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Render of proposed development

PRELIMINARY SITE INVESTIGATION NORTHCOTE VILLAGE, 25 SEPARATION STREET, NORTHCOTE

Final | 13 August 2026

Client: T&P Northcote Development Pty Ltd

ADVERTISED PLAN

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Abbreviations Used by DRC Environmental

Acronym	Definition	Acronym	Definition
ANZECC	Australian and New Zealand Environment and Conservation Council	**mg/kg**	Milligrams per kilogram (also ppm parts per million)
AST	Aboveground Storage Tank	**mg/L**	Milligrams per litre (also ppm parts per million)
ACM	Asbestos Containing Materials	**mm**	Millimetres
C6-C36	Hydrocarbon chain length fraction	**MW**	Monitoring Well
B(a)P	Benzo(a)Pyrene	**NATA**	National Association of Testing Authorities
bgl	below ground level	**NEPM**	National Environment Protection Measure
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes	**NHMRC**	National Health and Medical Research Council
COC	Chain of Custody	**NSW EPA**	Environment Protection Authority of New South Wales
COPC	Contaminant of Potential Concern	**OCP**	Organochlorine Pesticides
CUSFARP	Clean up so far as reasonably practicable	**PAH**	Polycyclic Aromatic Hydrocarbons
DBYD	Dial Before You Dig Service	**PAN**	Pollution Abatement Notice
DNAPL	Dense Nonaqueous Phase Liquids	**PCB**	Polychlorinated Biphenyls
DO	Dissolved Oxygen	**PFAS**	Per- and polyfluoroalkyl substances
DRC	DRC Environmental	**PID**	Photo ionisation Detector
DSI	Detailed Site Investigation	**PQL**	Practical Quantification Limit
EAO	Environmental Audit Overlay	**PSI**	Preliminary Site Investigation
EC	Electrical Conductivity	**QA**	Quality Assurance
EIL	Ecological Investigation Level	**QC**	Quality Control
EMP	Environmental Management Plan	**RPD**	Relative Percent Difference
EPA	Victorian Environment Protection Authority	**RAP**	Remediation Action Plan (or Cleanup Plan)
ERS	Environment Reference Standard	**SVOC**	Semi Volatile Organic Compound
ESA	Environmental Site Assessment	**TCE**	Trichloroethene
GME	Groundwater Monitoring Event	**TDS**	Total Dissolved Solids
HIL	Health Investigation Level	**TIT**	Triple Interceptor Trap
km	Kilometres	**TPH**	Total Petroleum Hydrocarbons
LNAPL	Light Non-Aqueous Phase Liquid	**µg/L**	Micrograms per litre (also ppb parts per billion)
LOR	Limit of Reporting	**UPSS**	Underground Petroleum Storage System
m	Metres	**UST**	Underground Storage Tank
mAHD	Metres above Australian Height Datum	**VOC**	Volatile Organic Compounds

1. INTRODUCTION

DRC Environmental Pty Ltd (DRC) was engaged by T&P Northcote Development Pty Ltd to undertake a Preliminary Site Investigation (PSI) for the land located at Northcote Village, 25 Separation Street, Northcote. 'The site' includes only the southern portion of the Northcote Plaza and surrounding parking area.

It is understood by DRC that the site is subject to a proposed mixed-use commercial and high-density residential tower development, which includes a basement level, together with additional podium car parking levels, providing three levels of car parking in total. The site is located on and in the vicinity of two former landfills.

The site location is presented in **Figure 1** in the **Figures** section of the report and proposed development plans for the site are provided in **Appendix A**.

Previous investigation works which included soil, groundwater and landfill gas assessments have been undertaken by Douglas Partners (DP), FSG Geotechnical (FSG) and Compass Environmental (Compass). Information obtained during the site history review and previous investigations has been incorporated into this PSI for completeness. These reports are provided in **Appendix B**.

DRC has also undertaken works pertaining to landfill gas risk and continued monitoring of groundwater conditions, which have been reported separately.

This PSI report has been produced with reference to the **Statement of Limitations** detailed in **Section 8** of this report.

1.1. Purpose

It is understood by DRC that the site is to be developed for high density residential and commercial use and that a statutory environmental audit is required to be undertaken for the site due to the proximity to the former Northcote Landfill. The current appointed environmental auditor for the site is Mr Charlie Barber of Australian Environmental Auditors Pty Ltd (AEA) (the 'Auditor').

1.2. Objectives

The objectives of this PSI are to:

- Complete a preliminary site investigation and desktop environmental contamination assessment to assess the potential risks associated with the proposed development of the site;
- Provide details of assessment works that have been undertaken;
- Provide details on nearby landfills and the potential impacts on the site; and
- Make recommendations as to the site's condition and further environmental works that may be deemed necessary for the site based on the findings of this report.

1.3. Scope of Works

The works undertaken at the site to facilitate the completion of the PSI were as follows:

- A review of site details with regards to the site's geographical setting and planning information;
- A desktop assessment of the environmental setting of the site, which includes the geological and hydrogeological profile underlying the site;
- A desktop site history review of selected third party and historic environmental records which may have resulted in soil and/or groundwater contamination at or surrounding the site; and
- Compilation of collected data into an PSI report (this report) with conclusions regarding the suitability of the site for the proposed development and categorisation of the site in accordance with the Department of Environment, Land, Water and Planning (DELWP) *Planning Practice Note 30 – Potentially Contaminated Land* (PPN30).

2. SITE DETAILS

The site is located approximately 5 km northeast of the Melbourne CBD. For planning information regarding the site, basic and planning property reports were acquired from the State Government Victoria Land Channel website (www.land.vic.gov.au) on 16 July 2026. A general summary of the information regarding the site and its surrounds is presented in **Table 2.1** below and property reports are provided in **Appendix A**.

Table 2.1: General Site Information

Site Location	25 Separation Street, Northcote, VIC 3070 (**Figure 1**)	
Current land use zoning and planning overlays	**Zone:**	Commercial 1 Zone (C1Z)
	Overlays:	Design and Development Overlay Schedule 14 (DDO14) Development Contributions Plan Overlay – Schedule 1 (DCPO1)
Municipality	Darebin City Council	
Title and plan information	• Lot 100 on SP27953 (eastern portion) • Part of Lot 101 SP27953 (western portion) • Lot 102 SP27953 (southwestern corner)	
Site Area	Approximately 1.5 ha	
Current site use	Northcote Plaza shopping centre and outdoor car park	
Surrounding land use	A review of the Planning Property Report indicated that the surrounding land is under the following zoning: • North: Commercial Zone 1 (C1Z), Public Park & Recreation Zone (PPRZ), beyond which is General Residential Zone 2 (GRZ2) and Neighbourhood Residential Zone 1 (NRZ1). • East: Public Park & Recreation Zone (PPRZ), beyond which is Public Use Zone 6 (PUZ6), and General Residential Zone 2 (GRZ2). • South: Commercial Zone 1 (C1Z), Public Use Zone 6 (PUZ6), General Residential Zone 2 (GRZ2) and Neighbourhood Residential Zone 1 (NRZ1). • West: Commercial Zone 1 (C1Z), Trasport Zone 3 (TRZ3), Mixed Use Zone (MUZ) and General Residential Zone 2 (GRZ2) The surrounding land uses are mainly non-sensitive uses as described below: • North: Northcote Plaza shopping centre and carpark; • East: All Nations Park, beyond which is residential use; • South: Separation Street, beyond which is Santa Maria College, Northcote Library and commercial use shops; and • West: Northcote Plaza and commercial use shops.	
Proposed future use	Mixed use commercial and high density residential.	

3. ENVIRONMENTAL SETTING

3.1. Topography

The site is located on relatively flat land at elevations of between approximately 48 and 52 m AHD except in the southwestern boundary where there is an elevation increase to about 54m AHD.

Information regarding the topography at the site, including a figure of the topographical conditions, is provided in **Appendix C**.

3.2. Geology

A search of geological information from the State Government Victoria – Department of Energy, Environment, and Climate Action (DEECA) identified that the site is underlain by the Silurian-aged Melbourne Formation comprising siltstone and sandstone.

Soil conditions identified in the groundwater database search (see **Section 3.4.2** below) were generally consistent with the above descriptions.

Information regarding the geology underlying the site, including a figure of the geological conditions, is provided in **Appendix C**.

3.3. Surface Water

No surface water bodies exist on the site. The closest surface water bodies to the site are:

- Unnamed lake in All Nations Park (closed landfill), located approximately 350 m east of the site. This lake is man-made and has a liner system to stop any connection with underlying groundwater.
- Yarra River, approximately 2.03 km southeast of the site; and
- Darebin Creek, located 2.5 km east of the site.

3.4. Hydrogeology

3.4.1. Environmental Values of Groundwater

A review of the Visualising Victoria's Groundwater website (www.vvg.org.au) and DEECA groundwater resource report for the site (using the DEECA online groundwater resource map at (https://www.water.vic.gov.au/groundwater/groundwater-resource-reports) indicates the following with regards to the hydrogeology underlying the site:

- Underlain by the Mesozoic and Palaeozoic Bedrock (basement) sedimentary (fractured rock) aquifer, which comprises sandstone, siltstone, mudstone and shale;
- The depth to groundwater is expected to be approximately 5 to 10 m below ground level (m bgl); and
- Total Dissolved Solids (TDS) concentrations ranging between 1,001 and 3,500 mg/L are expected in groundwater underlying the site.

This TDS range places the site within either Segment A2, B or C of the groundwater segments outlined in the 2021 Environment Reference Standard. Based on this classification, the following environmental values that apply are:

- Water dependent ecosystems and species;
- Potable water supply (acceptable)- Segment A2 only;
- Potable mineral water supply;
- Agriculture and irrigation (Irrigation) – Segments A2 and B only;
- Agriculture and Irrigation (Stock Watering);
- Industrial and Commercial;

- Water-Based Recreation (Primary Contact Recreation);
- Traditional Owner Cultural Values;
- Buildings and Structures; and
- Geothermal properties.

Information relevant to the hydrogeology underlying the site is presented in **Appendix C**.

During previous groundwater monitoring, groundwater was generally encountered at various depths ranging between 2.9 and 9.35 m below top of casing (37 to 46 m AHD) and reported a laboratory TDS ranging from 680 to 8,900 mg/L. This suggests that site specific groundwater is conservatively within Segment A2.

3.4.2. Groundwater Bore Database

A groundwater database search using the Visualising Victoria's Groundwater website (https://www.vvg.org.au) was undertaken in July 2026.

The search identified a total of 50 registered groundwater bores within a 2 km radius of the site. Of the 50 groundwater bores, eight groundwater bores were listed as being used for extractive purposes.

The remaining non-extractive groundwater bores were listed as being Investigation/Groundwater Observation or non-listed purposes.

The closest groundwater bore (WRK062051) is located within the council parking area to the east of the site and appears to be associated with the monitoring of the adjacent All Nations Park area (former landfill site).

Information regarding groundwater bores that are listed as being used for extractive purposes has been summarised in **Table 3.1** below. It is noted that no extractive groundwater bores are in the vicinity of the subject land that would be deemed relevant to the site.

Details regarding all wells within a 2 km radius of the central portion of the site are provided in **Appendix C.**

Table 3.1: Registered bores within a 2 km radius of the site that are used for extractive purposes

Bore ID	Approximate distance and direction from site	Bore Depth (m bgl)	Use	Lithology
WRK967348	524 m southwest	15.4	Domestic & Stock	Unknown
WRK981941	686 m southeast	15	Domestic & Stock	Unknown
WRK981942	686 m southeast	15	Domestic & Stock	Unknown
WRK985110	1,080 m east	12	Domestic & Stock	Unknown
WRK043351	1,440 m east	81	Commercial	0.00m-2.00m Rubble and Clay Fill 2.00m-2.50m Basaltic Clay 2.50m-12.00m Weathered Basalt 12.00m-20.00m Basalt 20.00m-33.00m Yellow/brown Mudstone 33.00m-81.00m Grey Siltstone
WRK105427	1,640m east	18	Domestic & Stock	0.00m-2.00m Clay 2.00m-18.00m Basalt
WRK981285	1,640 m northeast	78	Domestic & Stock	Unknown
WRK984107	1,660 m northeast	63	Domestic	0.00m-5.00m Soil & Clay 5.00m-20.00m Basalt 20.00m-63.00m Mudstone/Siltstone Sandstone

4. SITE INSPECTION

An initial inspection of the site was undertaken by DRC on 17 August 2023, which comprised a walkover of the marketplace shopping centre and confirmation of the condition of landfill gas bores at the site. The following was observed during the site inspection:

- The site is a portion of the Northcote Plaza shopping centre complex. All the outdoor area at the site is the car park for the centre and covered by asphalt, with the exception of several garden bed areas which were vegetated and dirt covered;
- Apart from a few trees planted within carpark garden beds, no natural vegetation was observed at the site;
- Within the garden beds to the east of the building was a large concrete water tank;
- The southern portion of the building appeared to be a former garage. This area also sloped down to the loading docks for the former Coles Supermarket;
- Separation Street rose several metres in elevation above the Coles loading dock and southern Northcote Plaza façade. A retaining wall was present between the footpath and building;
- The entry road between the two portions of Northcote Plaza shopping centre sloped down to the north and was flat by the shopping centre entry;
- The shopping centre entry was flanked by a post office and bank; and
- North of the shopping centre entry was a large asphalt carpark and multi-storey commercial/residential tower called Arcadia Apartments.

No evidence of underground petroleum storage systems (UPSS), storage of hazardous chemicals or extensive chemical spills were identified during the site walkover. The asphalt and concrete observed at the site were in good condition.

The surrounding land uses of the site observed during the site inspection include:

- The remaining shopping centre and the car park to the north and west of the site;
- All Nations Park to the east (former landfill site); and
- Santa Maria College, Northcote Community Health and Northcote Library to the south.

Features/ items identified during the site inspection that may pose a potential contamination risk to the site include:

- The former landfill that has been developed as All Nations Park which extends across the eastern site boundary and former filled quarry extends across the western site boundary; and
- Former MyCar mechanics shop in the southeastern portion of the Northcote Plaza shopping centre.

Photos taken during site investigation works are provided in the **Plates** section.

5. SITE HISTORY REVIEW

In order to identify activities that have the potential to cause contamination that may have been undertaken at the site, a review of a range of media likely to provide insight into the history of the site was undertaken. Details within the section have been taken from previous reports at the site and updated by DRC where required.

5.1. Previous Environmental Reports

Historical works have been conducted across the site. Works were undertaken by Douglas Partners (DP), FSG Geotechnical and Foundations (FSG) and Compass Environmental (Compass). These reports are summarised in **Table 5.1** below and are provided in **Appendix B**.

It is DRC's understanding that no other previous environmental investigations other than those discussed above have been undertaken at the site.

Table 5.1 Historical Reports

Report Reference	Key Findings
DP (2021). *Preliminary Site Investigation for Contamination; Proposed Mixed Use Development, 25 Separation Street, Northcote*	Key information from the report is as follows: • Report was produced after receipt of additional landfill gas and leachate management data from Council-owned adjacent landfill to provide an initial indication of landfill gas risk beneath the proposed development and contamination status of soils. • Works included historical review, drilling of 10 bores and provisional waste soil categorisation. • Landfill to the east (former Northcote Landfill) was confirmed to have extended into the site. • A review of All Nations Park Landfill Gas Risk Assessment, Hydrogeological Assessment and After care Management Plan (all from 2020) was undertaken. The former brick quarry was filled in the late 1970s and capped and rehabilitated between 1998 and 2002. It was up to 50 m deep. Management measures at the former landfill include leachate management, cap inspections, massive landfill gas vents and gas drainage layer beneath the carpark to the east of the site. The gas drainage layer is a 1m thick gravel layer with additional gravel-filled 5-6 m deep 1-2 m wide trench around the perimeter of the landfill. • Landfill gas migration from the landfill is relatively low and leachate is managed by pumping and disposal. • Soil bores were extended to identify the extent of the old clay quarry to the west of the site and former Northcote Landfill to the east, and confirm ground conditions to the south. Several of the bores were drilled for geotechnical information. • Fill depths to the west (Old Clay Pit) were reported between 6.2 and 12.1 m bgl. Inert waste within fill consisted of brick, concrete and plastic fragments, slag/ash sands and gravels. • Fill depths to the south ranged between 0.3 and 0.5 m bgl with no inert waste observed. • Fill depths to the east (former Northcote Landfill) ranged from 0.45 to 6.5 m bgl and contained brick fragments and slag/ash sands. • Underlying natural soils were generally yellow brown silty clay, pale brown and orange-brown clayey silts and grey-brown siltstone with clay and sandstone seams. • Soils were compared to IWRG621 for offsite disposal. Soils were classified as Category C or B contaminated soils with some areas consistent with fill material. Asbestos testing was undertaken on a fragment of material found at the surface at DP06. It contained Chrysotile and Amosite asbestos, though asbestos fibres were not detected within fill at DP06. It was considered that this asbestos was illegally dumped, rather than a result of historic landfill practices. • DP recommended additional testing and investigation and that the site could be made suitable (from a contamination perspective) for the proposed development.
DP (2021). *Limited Detailed Site Investigation (Contamination); Proposed Mixed Use Development, 25 Separation Street, Northcote.*	Key information from the report is as follows: • Works were undertaken to address data gaps regarding the extent of the landfill, presence of landfill gas within the development envelope and suitability of the site for the proposed development. • Intrusive works included the drilling of 12 boreholes, to depths between 2 and 9 m, within the recently vacated Kmart. • Each borehole was converted into a landfill gas monitoring well. These were installed and screened across a range of fill and natural soil formations. One round of gas monitoring was undertaken.

Report Reference	Key Findings
	• Additionally, three groundwater wells were installed (DP12, DP13 and DP16). Large amounts of silt were observed to have filled these wells 1 week after installation. Groundwater sampling could not be undertaken due to the silt. • Soil sampling encountered TPH, PAH and lead impacted soils. Natural soils identified an isolated area with elevated total PAHs. Hydrocarbon contamination from an unidentified source was found in the northwest corner of the site in the vicinity of borehole DP14. • Soil results included exceedances of the EILs (DP considered this to represent a negligible risk) and HIL-C (DP02 and DP07 for PAHs and benzo(a)pyrene TEQ and DP14 for total PAHs). • HIL exceedances were at depths and locations which would be removed during basement development. Location DP14 impacts were likely associated with petroleum hydrocarbons at this location. • Landfill gas screening did not report methane or carbon dioxide concentrations above the gas trigger vales of 1% v/v and 6.6% v/v, respectively. DP14 and DP15 reported elevated PID readings which corresponded to odours noted during drilling works. This area also reported elevated TRH readings in soil from an unknown source. • Landfill gas sampling gas screening value based on gas flow and concentration was calculated to be 0.042 L/hr and classified the site as 'very low risk'. • DP recommended passive landfill gas protection measures be included in the development design and additional delineation testing for soil around DP14 be undertaken.
FSG (March 2022). *Northcote Plaza, 25 Separation Street, Northcote – Preliminary Geotechnical Investigation.*	Key information from the report is as follows: • Works were to provide client with a pre-demolition geotechnical investigation and included drilling of nine boreholes between 13 and 21.4 m bgl. Five of the bores were converted to groundwater wells (FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH07 and FSG-BH09). • The extent of the former Northcote quarry/landfill is relatively well known based on previous investigations, however due to the Plaza building the western landfill boundary was inferred. • Site was generally flat with elevations between 48 and 52 m AHD except in the southwestern boundary where there is an elevation increase to about 54 m AHD. • The geology encountered included Unit 1 – Fill ranging from 0.1 m (centre of the site) to 6.5 m (former eastern landfill/quarry). No landfill material was identified. A strong hydrocarbon odour was noted at BH06. Unit 2 – Residual Siltstone consisted of clay, silt and sandy clays, where encountered depth of base ranged from 0.8 to 6.3 m. Unit 3 – Melbourne Formation, very weathered siltstone found beneath either Unit 1 or Unit 2 at all locations, was identified from depths as shallow as 0.8 m to over 20 m bgl (end of borehole). Unit 4 – Weathered dyke material was identified in DP04 from 3.5 to 8.3 m bgl and possibly BH01 and BH02. • Groundwater was encountered at depths of between 3.3 and 7.2 m bgl (42.5 to 47.4 m AHD) with a flow generally to the east – towards the former landfill. • Several options of footings were provided along with groundwater management during development. Groundwater management included temporary dewatering of the site during development using pumps and sumps.
Compass (September 2022), *Summary of Completed Environmental Investigations, 25 Separation Street, Northcote*	Key information from the letter report is as follows: • Completed a higher density soil investigation including installation of 11 soil bores (B1 to B10, and GW3), eight landfill gas bores (LFG1 to LFG8) and five groundwater wells (GW1, GW2, GW3A, GW4 and GW5). Although works were completed, these have not been fully reported by Compass. • Two trenches were also excavated (TP1 and TP2) east of the site in an attempt to find if any gas mitigation systems were installed on-site. These were dug to between 3.0 and 3.2 m bgl in the vicinity of the Kmart loading dock. Soils from these trenches were generally below the LOR and/or guideline values, with the exception of nickel above EILs for urban residential and public open spaces. • Soil bore locations were predominately in the former Kmart building and outside the plaza to the east, south and west. Soil bores were drilled to depths of between 0.5 and 1.4 m bgl. Soils were generally described as Fill (gravel silty SAND/silty SAND) overlying natural extremely weathered siltstone (from depths ranging from 0.15 to 1.15 m bgl). No natural soil was encountered at B1 and B7 due to refusal on rock at 0.7 and 1.0 m bgl, respectively. Siltstone at B2 was reported to be significantly deeper than other locations – this location was in the northeastern portion of the site and outside the landfill mass. • Compass tabulated all sampling to date with new guidelines. Soil analytical results were generally reported below the LOR and/or adopted guideline values, except for: – EIL exceedances for metals (copper, nickel, tin and zinc), naphthalene and total PAHs – One HIL A exceedance for lead (DP02_0.5); – Several HIL B exceedances for benzo(a)pyrene TEQ and one for total PAHs (DP14)

Report Reference	Key Findings
	– ESL and HIL A to HIL C exceedances at DP14 and DP15 for TRH F2, TRH C_{10}-C_{16} and TRH C_{16}-C_{34} – HSL A/B exceedances for naphthalene in DP14 and DP15 • Groundwater wells were generally drilled to depths ranging from 8.5 to 10.5 m bgl using solid augers. GW2, GW3A and GW5 were screened over a large interval to allow for landfill gas monitoring (gravel surrounding screen) and groundwater (sand surrounding screen). GW3A and GW4 observed borehole collapse during auger removal and were redrilled where possible to allow for full groundwater interception. • Groundwater results from sampling in 2021 and 2022 reported the following: – TDS (1,020 to 4,530 mg/L); – Inorganics - sulfate (152 to 900 mg/L), chloride (92 to 2,420 mg/L), field pH (5.49-7.38 pH units), sodium (216 to 1,360 mg/L), dissolved methane (<0.01 to 0.832 mg/L) – Nitrogens - nitrate (<0.01 – 99.8 mg/L), nitrite (<0.01 to 0.54 mg/L), ammonia (0.02 – 2.79 mg/L) , total nitrogen (1.8 to 98.4 mg/L) – Metals - aluminium (<0.005 to 0.45 mg/L), arsenic (<0.001 to 0.017 mg/L), beryllium (<0.0001 to 0.005 mg/L), boron (<0.05 to 1.7 mg/L), chromium (<0.001 to 0.247 mg/L), hex chromium (<0.001 to 0.002 mg/L), cobalt (<0.001 to 0.135 mg/L), copper (0.003 to 0.25 mg/L), lead (<0.001 to 0.169 mg/L), manganese (0.033 to 2.1 mg/L), molybdenum (<0.005 to 0.052 mg/L), nickel (0.004 to 0.2 mg/L), selenium (up to 0.03 mg/L), vanadium (<0.0002 to 0.08 mg/L) and zinc (0.016 to 0.964 mg/L) – TRH – C_6-C_{10} (<0.02 mg/L), C_{10}-C_{16} (<0.05 to 0.61 mg/L), C_{16}-C_{34} (<0.1 to 0.68 mg/L), C_{10}-C_{40} <0.1 to 1.29 mg/L) – VFA were reported <5 to 90 mg/L – Sum of PFAS (0.067 to 1.671 ug/L), PFOS (<0.002 to 0.22 ug/L), PFHxS+PFOS (<0.002 to 0.521 ug/L). – The following concentrations were below the LOR and/or only minor detections: cyanide, BOD, PAH, phenols, halogenated volatiles, chlorinated hydrocarbons, herbicides, alcohols, solvents. – Elevated LORs above guideline values were reported for PAHs (anthracene, phenanthrene, benzo(a)pyrene), phenols (2,4,6-TCP, pentachlorophenol, 2,4-dinitrophenol, 2,4-dinitrophenol), HalVols (bromomethane, dichloromethane, vinyl chloride, 1,2,3-trichlorobenzene, 1,4-DCB), CHCs (hexachlorobenzene), herbicide (2,4,5-TCPP acid), metals (mercury, silver, tin, selenium). • Landfill gas bores were installed along the eastern and western site boundaries in the vicinity of the identified filled Old Clay Pit and former Northcote landfill. All LFG bores were placed within the landfill mass with the exception of LFG4, which was placed between the landfill mass and Kmart building on the eastern site boundary. • Landfill gas monitoring on 27 January 2022 reported the following: methane 0-13.9%, CO_2 0.1-12.0%, CO 0-1% and H_2S 0%. Methane was only observed in DP15. CO_2 was reported highest at DP13 and DP14. Elevated readings were considered to be associated with hydrocarbon impacted soils at these locations, rather than landfill gas. Monitoring during March 2022 reported similar trends and concentrations. • Two rounds of underground service pit monitoring in the vicinity of the site using a GA5000 unit. No methane or carbon monoxide were reported, with only very minor carbon dioxide (up to 0.2% v/v) observed during the two events. Compass results confirmed that no landfill gas migration was occurring along the accessible underground services. • Compass recommended additional investigation works including additional soil bores to target hydrocarbon impacted area to be converted into groundwater bores, deeper bores where natural soils were not intercepted near DP10/DP11, five more bores to improve site coverage and a new landfill gas bore along the western site boundary.
DRC (June 2026), *Draft Landfill Gas Risk Northcote Plaza, 25 Separation Street, Northcote*	A landfill gas risk assessment (LFGRA) was conducted to assess potential risk to future users of the site due to landfill gas ingress into the proposed buildings at the site. Key information from the letter report is as follows: • A range of sampling events were undertaken including GA5000 monitoring and the use of GasClam continuous monitors on selected bores within both landfills to allow for an assessment based on site-specific data. • DRC concluded from the assessment of risk pertaining to potential receptors including commercial workers, construction workers and residents in close proximity to the former Northcote Landfill and Old Clay Pit landfill (including the subject site):

Report Reference	Key Findings
	– Risk level for uncontrolled event of exposure to workers in trench or pits is 'acceptable'; assuming continued application of standard OHS practices in regard to confined space entry. – Lateral migration of landfill gases via subsurface to the site is considered 'low' risk based on the age/type of wastes, shallow groundwater reducing lateral migration and landfill gas, groundwater and leachate systems in place within the Northcote Landfill. – Risk level for uncontrolled event of exposure to occupants of nearby houses and workers within the proposed site development from LFG explosion is 'insignificant' – Emissions of methane from leachate contaminated groundwater was not considered a likely pathway or the migration of methane off the landfill site, with risk considered 'very low'. • The site-specific landfill gas assessment confirmed that methane concentrations at the site were below the LOR and generally carbon dioxide concentrations were elevated above BPEM guidelines within the former Northcote Landfill/All Nations Park. • The landfill was classified as 'low risk' and by the modified Wilsons Card classification as a '2'. • Based on the risk classification and total Protection Score of 2.0 one or more mitigation measures is required at the site including: venting of basement/subfloor area, horizontal soil barriers beneath the building footprint and/or reinforced concrete ground-bearing slab or waffle pod slab/tanked basement. • DRC recommended a gas vapour management plan (GVMP) be provided to incorporate the required protection measures of the LFGRA and an Environmental Management Plan (EMP) to manage standard OHS practices during site development.

Soil assessments conducted at the site to date indicated that fill soils containing anthropogenic wastes were present to depths from 0.25 to over 12.5 m deep in the eastern portion (former Northcote Landfill) and 0.17 to greater than 4.9 m onsite and between 1.4 and greater than 11.9 m offsite to the west (former Old Clay Pit). Areas outside of the former landfills reported fill depths generally ranged between 0.3 and 0.5 m. Elevated concentrations of metals, TPH and PAH were reported in fill soils with only elevated total PAHs reported in an isolated area of natural soils., where TRH impacts were observed (DP14) likely caused by leaking underground fuel infrastructure or unknown UST.

DRC considers that petroleum impacted soil and vapour identified in the northwest of the site may be indicative of a former underground storage tank (UST) or fuel infrastructure in this vicinity. After building demolition, DRC propose to undertake additional investigation and remediation in this area.

Light non-aqueous phase liquid (LNAPL) was also encountered by DRC in GW4 during the 2024 groundwater monitoring event at a thickness of 12mm for the first time since sampling had been undertaken at the site.

5.2. Historical Aerial Photographs

A search of relevant historical aerial photographs was undertaken by reviewing the DEECA aerial photograph collection and NearMap aerial imagery. A total of seven historical aerial photographs (**Appendix D**) were reviewed for the site from the years 1945 to 2023 and are summarised in **Table 5.2** below.

Table 5.2: Historical Aerial Photograph Review

Date	Site Description	Surrounding Land Use	Reference
1945	Two kilns are shown in the central portion of the site. Two large buildings are shown to the west and north of the kilns. The clay quarry to the east appears to have slightly encroached on to the site, mainly in the southeastern corner. There is limited evidence of a quarry pit to the west, however uneven ground and a slight depression are visible further to the west.	A large quarry is visible to the east of the site. Northwest of the site three kilns are visible along with several industrial sized buildings. Separation Street is shown to the south with several residential scale buildings across the road. There is a slight amount of disturbed ground to the west, possibly the 'Old Clay Pit' listed on the MMBW map, however it appears shallow and no longer used.	DEECA (Vicmap Topographic Mapping Program)

Date	Site Description	Surrounding Land Use	Reference
1965	Two kilns are shown in the central portion of the site. Two large buildings are shown to the west and north of the kilns. The clay quarry to the east appears to have slightly encroached on to the site. A large ramp down into the quarry is visible in the eastern portion of the site.	Land to the west appears to be disturbed ground level with the site. The eastern quarry appears to be deeper than the previous aerial photograph Separation Street is shown to the south with several residential scale buildings across the road. Land north of the site appears to also be part of the Northcote Brick Works and clay pit quarry.	
1970	Nearly the entirety of the site is now covered by buildings. The two kiln chimneys are still visible in the centre of the site, with the clay quarry pit now visible along the entire eastern boundary. The quarry has gotten deeper and larger, with large walls visible. The former quarry pit to the west is flat land used for parking or storage.	Further development of the Brick Works is apparent to the north. The clay quarry pit is now very large with a ramp from the eastern edge and a large wall visible in the southeast and south of the pit.	
1979	The site remains generally unchanged from the 1970 aerial photograph.	Conditions remain generally unchanged from the 1970 aerial photograph; however deeper excavation of the pit is visible with the walls to the southeast and south appearing taller.	
1984	Site has been redeveloped as Northcote Plaza Shopping Centre. A large building covers the central portion of the site and extends northwards. A large water tank is visible to the east of the building and car parks surround the building. Garden beds with trees are visible along the southern boundary. The western portion of the site is a car park.	The quarry area is now disused and appears to be in the process of being filled (landfill) with over 15 trucks visible backing up to the tipping face. The landfill extends nearly all the way to the site boundary.	
2009	Further expansion of Northcote Plaza has occurred in the southwestern portion of the site with car parking no longer in this area.	All Nations Park has now been developed to the east of the site along with car park between the site and park. Some extensions to the north of the Plaza are also visible. A multistorey residential tower is currently being built just north of the site and attached to the shopping centre on Breavington Way.	Nearmap
2023	No significant changes from the 2009 aerial photograph; however, the loading dock behind Kmart is now fenced off and a long trench and two piles of soil/rubble are visible within the fenced area.	Conditions remain generally unchanged from the 2009 aerial photograph, apart from residential tower to the north now being complete.	

The aerial photograph review indicates that the site formed part of the Northcote Brick Works from at least 1945 to some point between 1979 and 1984 when it was developed as part of the Northcote Plaza shopping centre. To the east of the site was historically a clay quarry pit that extended across the boundary into the site. This quarry was filled with municipal waste and then developed as All Nations Park between 1984 and 2009.

The same building layout was present across the site from at least 1984 with some extensions made by 2009.

Features/items identified during the aerial photograph review that pose a potential contamination risk to the site include:

- Various contaminating industrial activities that were potentially undertaken within the Northcote Brick Works over its time of operation; and

- Potential contamination associated with the quarry, including potential backfilling with waste/uncontrolled contaminated soils. Further description is provided in **Section 5.8**.

5.3. Historical Maps

A review of historical maps was undertaken. Historical maps were reviewed from the years 1908 to 1996.

Findings of the review are summarised in **Table 5.3** below. The reviewed maps are provided in **Appendix D**.

Table 5.3: Historical Map Review Summary

Year	Site	Surrounding Area	Reference
1908	Clay Pit to the west is listed as 'Old Clay Pit – not in use' which encroaches on the western site boundary and is located south of Robbs Parade. The site contains two kilns and possibly some smaller buildings adjacent to Separation Street. The whole area is considered 'Northcote Brick Works'	Separation Street is shown adjacent to the south. A clay quarry is located to the northeast of the site. Three further kilns are located northeast of the site along with five large industrial scale buildings and a conveyer which drops into the eastern Clay Quarry. Residential house development appears to be occurring along the northwestern edges of the brickworks and south of the main clay quarry (along Hopetoun Street)	MMBW Map 2098
1933	No significant changes from the 1908 MMBW Map		MMBW Map 2098
1966	The very northern portion of the site is listed as 'Brickworks' (north of Robbs Parade). South of the brickworks is unlabeled.	JA Thomson Reserve is listed to the west. Separation Street is located to the south. The Brickworks is bounded by Dennis St to the north, St David and Hopetoun Streets to the east and Hunter Street to the west. The vicinity of the site appears mostly residential, outdoor playing fields/parks and education facilities. Some commercial use is expected along the major roads however this is not shown in Melway maps.	Melway Edition 1
1970	Entire site is labeled 'Brickworks'.	The area formerly listed as JA Thomson Reserve is now listed as a car park. No significant changes from 1966 Melway map.	Melway Edition 4
1975	No changes from the 1970 map.	Conditions remain generally unchanged from the 1970 Melway directory	Melway Edition 8
1986	The site is listed as parking	North of the site is listed as Northcote Shopping Plaza. The eastern boundary of the building is listed as Northcote Regional TIP (non-putrescible no household garbage). This extends between Separation Street, Dennis Street and as far east as Wakanui Street. Santa Maria College is listed to the south along with a library. Commercial use is listed along High Street to the west.	Melway Edition 11
1996	The site is listed as parking	An entry road into Northcote Plaza to the west is now visible, beyond which is Northcote Central shopping centre. Northcote Plaza is shown to the north of Robbs Parade. Northcote Regional Tip remains the same as the 1986 Melway Directory.	Melway Edition 24

The site was labelled as Northcote Brick Works in the early 1900s until 1986 where it is labelled as parking for the adjacent Northcote Plaza. DRC notes that the layout of the plaza was not shown to extend to the site during the historical map search, however the aerial photograph search showed the plaza building extending onto the site by 1984.

Properties labelled in the area surrounding the site were predominantly educational, recreational and commercial facilities apart from the following:

- Brickworks and clay hole adjacent to the east of the site – 1933, 1966, 1970 and 1975; and
- Northcote Regional Landfill – 1986 and 1996.

DRC considers the adjacent landfill to pose a potential contamination risk to the site, predominantly to groundwater and landfill gas.

5.4. Cathodic Protection Systems Search

Cathodic protection (CP) systems are installed to protect a wide range of metallic structures in various environments and are commonly applied to UPSS infrastructure. The CP regulations commenced in 1970, which requires any newly installed CP system in Victoria to be registered with Energy Safe Victoria.

A search for CP systems at the site was undertaken using the Energy Safe Victoria website on 30 October 2023 as an indication of UPSS infrastructure that may have been installed on the site. The search did not identify cathodic protection systems at the site.

It should be noted that a CP search will not identify such infrastructure if the infrastructure is not metallic (therefore not requiring CP), the tank is metallic however CP was never installed, the CP system was never registered (i.e. pre 1970 or the regulations were not followed) or the CP system has been de-commissioned (Energy Safe Victoria's database only keeps records of active CP systems, however if they are not notified of their removal they will remain on the system).

A copy of the cathodic protection system search results provided by Energy Safe Victoria is presented in **Appendix E.**

5.5. Universal Business Directory and Sands & McDougall Directories Search

A review of the Universal Business Directory (UBD) and Sands & McDougall directories of the intersection of Separation and High Street was undertaken by DRC as part of site history review. DRC reviewed editions from 1890, 1900, 1920, 1930, 1940, 1950, 1960 and 1970.

The directories are a record of addresses of tenants and businesses within the Melbourne metropolitan area. Occupants of the site are summarised below:

- Carters Arms Hotel was listed at the corner of High and Separation Streets in the 1890 and 1900 directories.
- Northcote Brickworks / Northcote Brick Company were listed in 1900 & 1930 on the north side of Separation Street.
- In the 1950 directory an electrical substation was listed near the corner of High and Separation Streets.
- In 1960, the electrical substation, Baron Motors (motor engineer), central car park/service station, a reserve and a house being built were labelled along the north site of Separation Street. The Baron Motors was replaced by Mills Motors in the 1970s directory. DRC considers the site to be occupied at this time by the car park and it is unknown if this was solely for parking or also included a service station as well.

- The southside of Separation Street has mainly been listed for residential or commercial use since 1890 to 1970.

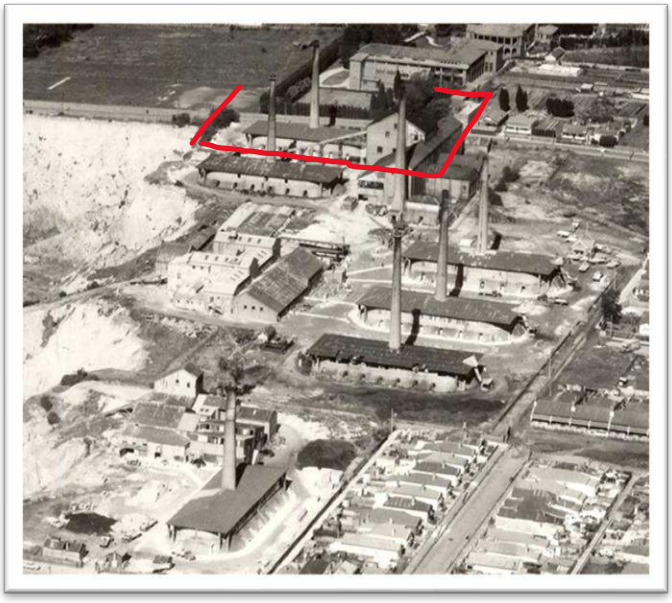
These dates are further corroborated below in **Section 0**.

5.6. Further Historical Data

Further historical information was provided about the site in from the City of Darebin's website.

- Northcote Brickworks started in 1866 when quality clay soils were discovered near the rear of Carter's Arms hotel on Separation Street by John Roberts.
- Large parcel of land was sold to the Groom brothers who established Patent Brick Co. The first bricks to be produced were in 1873 with a single kiln/chimney stack. Production was approximately 1-2 million bricks per year.
- In 1882 a group of businessmen joined to form the Northcote Brick Co. Ltd who bought out the Patent Brick Co. and quarry.
- A new state of the art kiln was added in 1883 which allowed for faster and more effective production of bricks. Two more kilns were added in 1886. This allowed production to increase to 4 million bricks per month.
- Due to strikes and the depression in 1889-1890 brick prices fell and production stopped for 2 months.
- The new Northcote Brickworks Company continued production at a reduced rate with only two of five kilns operating.
- Steam works were installed in 1919.
- The brickworks closed for extended periods during the depression of 1930s and undeveloped land behind the Carter's Arms hotel was sold to the Northcote Council for a park. However, this park was never developed, and land was instead used for car parking in the 1960s and Northcote Central in 1982.





Approximate site location with brickworks visible (1957) – Source: Darebin Council

- By 1970s the suburbs surrounded the brickworks. The Northcote Brickworks Company ceased operations in 1977 and sold the quarry to the Northcote Council.
- From 1977 to 1998 the council used the quarry pit as a landfill. The tip was used to dump timber, car bodies, concrete and garden waste.



Northcote Landfill 1987 – Operated by Northcote Council

- Redevelopment of the former quarry site into All Nations Park was undertaken, and the park officially opened in 2002.

5.7. Environment Protection Authority

A review of EPA records was undertaken by DRC in July 2026 through Victoria Unearthed (https://mapshare.vic.gov.au/victoriaunearthed/). Details are provided in **Appendix F.**

5.7.1. EPA Priority Sites Register

A search of the EPA Victoria Priority Sites Register (PSR) was undertaken to identify whether the site or any surrounding properties within a 2 km radius were listed as priority sites or former priority sites by the EPA Victoria.

The search found that the site is not listed on the EPA Victoria PSR, however 24 Leinster Grove, Northcote was listed. This site is located approximately 1.37 km northwest of the site and was a former chemical storage facility that requires assessment and/or clean up.

Historically, All Nations Park was also listed on the PSR as 56 Brickworks Lane, Northcote (EAN-00005000) – Former Landfill that requires ongoing management. However, this is no longer listed.

Given the distance to the former chemical facility to the site, it is not considered to pose a contamination risk to the site. Although All Nations Park has been removed from the PSR, there is still a potential for it to pose a contamination risk to the site (and extend onto the site).

5.7.2. EPA Audit Reports

A search of the EPA Victoria list of Certificates and Statements of Environmental Audit and 53X Audit Reports (www.vvg.or.au) in July 2026 found 74 Environmental Audits within a 2 km radius of the site. Given the high number of environmental audits, only the audits undertaken adjacent to or in close proximity have been reviewed. Key findings of the audit reports are summarised in **Table 5.4** below.

Table 5.4: Summary of Surrounding Audit Reports

Audit Report Reference & Distance from Site	Key Findings
GHD (2004), Environmental Audit, All Nations Park, Brickworks Lane/Clifton Street, Northcote, Victoria CARMS No. 54790-13 (75 m east) Transaction Number 0008006270 14 May 2004	Key information from the audit report is as follows: • Audit was undertaken due to EAO and EPA pollution abatement notice (PAN). Audit was requested by the City of Darebin. PAN was issued in February 2001 for the maintenance of four groundwater bores and measurements/sampling to be undertaken every six months along with maintenance of three leachate pumps. • The initial PAN was revoked in 2003 with another PAN issued in November 2003 which required 3 monthly maintenance, SWL measurements and sampling of the groundwater wells and leachate sumps. • Site was already developed as All Nations Park which is a capped and mounded former landfill. • Site was historically a quarry and brickworks and then filled with inert waste and municipal wastes. It was capped in March 1999 with clay, covered in topsoil and grassed. • Four groundwater and 12 gas monitoring wells were installed in early 1999 and later a leachate collection sump was connected to sewer after a trade waste agreement was obtained. • Groundwater wells were sampled and analysed for pH, DO, TKN, nitrate, COD, sulfide, EC, temperature, ammonia, bicarbonate and TOC. Annual testing included chloride, potassium, alkalinity, magnesium, mercury, lead, carbonate, sodium, total iron, calcium, chromium and zinc. Additionally volatile fatty acids, redox potential and TDS were added to the suite together with total combined nitrogen. • TDS concentrations ranged from 8,700 and 13,300 mg/L, placing it within current Segment E or F. • Full groundwater result tables were not provided. However, the report stated generally low concentrations of metals, ammonia and other analytes with a neutral pH. Low concentrations of ammonia suggest leachate is not present at high concentrations. Nitrate concentrations ranged from 10-20 mg/L and zinc ranged from 0.01 – 0.1 mg/L, which exceeded ecological criteria at all locations. • Leachate quality assessment included analysis for a range of analytes, similar to groundwater. Ammonia (as N) concentrations in leachate were typically 100-150 mg/L with all samples exceeding Yarra Valley Water specifications for ammonia (as N) of 50 mg/L. All other analytes were within the specification ranges for discharge to the sewerage system. Leachate was considered to be occurring from the decomposition of garden waste within the landfill. • A revised trade waste agreement with ammonia concentration increased was applied for. • Generally, the previous monitoring undertake by Derbin Council did not comply with the PAN or Yarra Valley Water requirements, however the current monitoring program was found to comply. • Risk to Merri Creek due to leachate form the landfill is considered low due to biodegradation of nitrate occurring in the sediments of the creek during any potential discharge. • Contamination of groundwater was not expected to adversely affect other beneficial uses of groundwater or land. • It was proposed to lower the leachate pumping level to at least 1 m below the groundwater level to reduce potential groundwater contamination by leachate and potential to adversely affect Merri Creek. • No statement or certificate of environmental audit was issued as part of this audit.
Peraco (2020), *Environmental Audit, 1A Separation Street, Northcote, Victoria* CARMS No. 73322-1 (390 m west) Transaction Number 0008004544 30 October 2020	Key information from the audit report is as follows: • Site was vacant until 1950s-1960s when it was owned by individuals. In 1957 Commonwealth Oil Refineries owned the site until 1961. Site may have been a car park and service station. Motor mechanics operated from at least 1965 until the site was demolished in 2014. • Site was proposed to be developed as a multi-level building with car stacker and storage on the ground level and residential use above. • Demolition works occurred in 2014 which included UST removals, soil investigations and groundwater well drilling. Further wells were installed in 2016 and 2020. • Landfill gas installation and assessment was undertaken in 2015 and 2020. • Melbourne Formation Siltstone with groundwater flow inferred to the west of southwest. Local geology was fill overlying sandy SILT/silty CLAY weathered siltstone with competent siltstone from 1.7 to 8.0 m bgl (limit of investigation). • Groundwater was intercepted at approximately 7 m bgl. • TDS 810 to 1200 mg/L places property in Segment A2. • Regional groundwater depth ranged from 2.6 to 3.8 m bgl.

Audit Report Reference & Distance from Site	Key Findings
	• Groundwater pollution was considered to be naturally occurring (boron, copper, zinc, manganese, sodium) • Presence of thin contaminated fill material (up to 0.3m thick) across the site was evaluated for risk to human health. No volatile components were above adopted guidelines. • Landfill gas sampling results reported that risk was considered low and acceptable. A Statement of Environmental Audit was issued.
Peter J Ramsay & Associates (2008), *Environmental Audit Report – 404-412 High Street, Northcote* CARMS No. 62459-1 (160 m northwest) Transaction Number 0008002439 11 December 2008	Key information from the audit report is as follows: • Historically use as a blacksmith, fuel merchant and clothing manufacturer. • The geology beneath the site consisted of fill to a depth of 0.9 m bgl and was highly variable with anthropogenic inclusions (including coke and slag) overlying natural silty clays to up to 10 m bgl. Both basalt and Silurian aged siltstone was found beneath the clays. • Soil assessment reported fill contamination with PAHs and TRH which was excavated and removed from the site. • Groundwater was encountered 9.2 to 9.7 m bgl with a TDS of 7,600 to 8,000 mg/L, Segment C of the former SEPP. • Groundwater flow was considered to be to the southwest towards Merri Creek. • Concentrations of nickel, selenium and fluoride were identified in groundwater and were considered to be naturally elevated. • Elevated nitrate and manganese in groundwater were considered to be from an off-site source. A Certificate of Environmental Audit was issued.
Senversa (2015), Environmental *Audit – Purnell Apartments 9-13 Arthurton Road, Northcote, Victoria* CARMS No. 70786-1 Transaction Number 0008003300 (250 m southwest)	Key information from the audit report is as follows: • The site was zoned mixed use and was originally used for concrete and shoe manufacturing plus retail uses. It was proposed to be developed for high density residential with basement car parking. • Fill extended to 0.7 m bgl comprising clayey gravelly silt, silty clay and sandy gravel with anthropogenic inclusions including trace bricks and gravels. Beneath the fill was silty clay/clay to 6 m bgl and siltstone (from as shallow as 4.1 to 13.1 maximum depth of investigation). • Soil remediation was undertaken as part of basement excavation which included removal of the top 3 m of soil with additional excavation to 5 m bgl along the northern boundary to accommodate a car stacker. At the base of the excavation, natural siltstone was visible. • Soil samples reported slightly elevated hexavalent chromium within fill and natural soils; this was considered to be naturally occurring. Additionally test pit works at the completion of basement excavation did not encounter any elevated hexavalent chromium above the LOR. No soils remaining at the site were in excess of the adopted investigation levels. • Groundwater was encountered at 8 m bgl. Groundwater flow direction was inferred to be to the west towards Merri Creek, 1.2km from the site with some local flow to the southwest. • TDS was measured at approximately 6,700 to 7,000 mg/L and was classified as Segment C of the SEPP. • The investigations identified elevated metals (copper, nickel, selenium, zinc), nitrate and sulfate above adopted guideline values in groundwater. The site was not considered to be the source of any of the identified groundwater impacts. These were considered to either be regionally occurring/naturally elevated. A Certificate of Environmental Audit was issued.

The following features/activities undertaken at surrounding audit sites may pose a potential contamination risk to the site:

- Former quarry pit extends over the eastern and western portions of the site, which has been backfilled and may present a soil, air and groundwater contamination risk.

5.7.3. EPA Victoria Licensed Premises

EPA licenses are required for premises owned by a person, company, statuary corporation or municipal council whose operations may adversely affect the environment (including waste acceptance and treatment, air and water discharges and noise and odour).

A search of the EPA Victoria list of licensed premises (www.epa.vic.gov.au) did not identify any licensed premises within 1 km of the site.

5.7.4. EPA Check Your Groundwater

The EPA Check Your Groundwater (CYG) map highlights areas in Victoria where there has been historic groundwater pollution as a result of previous industrial activities. A search of the EPA CYG in 2026 identified three properties within 1 km of the site that are included in a CYG. A map of nearby CYG is provided in **Appendix F**. Details regarding these properties are provided in **Table 5.5** below.

Table 5.5: Surrounding EPA CYG Properties

Address	Location from Site	Site history	Restricted uses
84-96 Bastings Street, Northcote	674 m southeast	Industrial-general	Drinking Water
137 St Georges Road, Northcote	865 m west	Former Service Station	Drinking water Water used for Irrigation Water use for recreational purposes (e.g. swimming)
338 Separation Street, Northcote	935 m east	Quarry Filled with Industrial Waste	Drinking Water Water used for Irrigation Water used for recreational purposes (e.g. swimming)

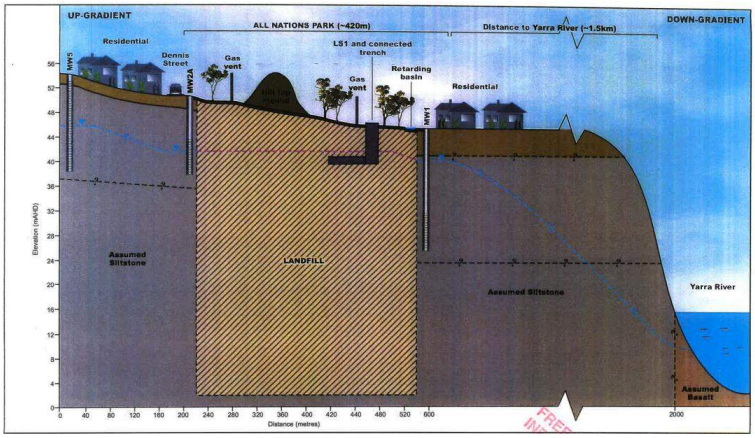
It should be noted that regional pollution may pose a contamination risk to groundwater underlying the site. DRC also notes that the former landfill adjacent and partially on the site was not identified as having a CYG. However, DRC considers that additional groundwater monitoring should be undertaken at the site to further assess the potential risk from the landfill. This work will be undertaken as part of the Environmental Audit at the site.

5.8. Further Landfill Information

DRC has summarised the Freedom of Information (FOI) reports received from the adjacent former Council Landfill. These reports provide further information regarding the landfill and mitigation measures undertaken by the Council regarding to hydrogeological investigations and aftercare management. These reports are summarised below in **Table 5.6**.

Table 5.6: Summary of adjacent landfill reports

Audit Report Reference & Distance from Site	Key Findings
GHD (2020), *All Nations Park, Hydrogeological Assessment (HA)*	Key information from the hydrogeological report is as follows: • HA was undertaken to meet requirements of EPA PAN 90013075 issued 9 April 2020. • The landfill was underlain by Melbourne Formation siltstone and thin-bedded sandstone with New Volcanics weathered basalt on the eastern boundary. • Basement rock aquifer was recharged by rainfall and considered likely to discharge to local creeks including Merri Creek (south) and the Yarra River (south southeast). Leachate impact from the property is not considered to pose a risk at the receptors due to dilution and groundwater velocity. • Three leachate sumps were on the property. Only one (LS1) was fitted with an extraction pump and discharged to sewer via a Trade Waste Agreement (TWA). No information was provided on whether this pump had been extracting leachate. LS1 was designed to maintain leachate at not greater than 41.80 m AHD to avoid seepage through the landfill cap. • Standing water levels (SWL) ranged from 36 to 42 m AHD. A large portion of the waste mass is saturated by groundwater. Groundwater flow was inferred towards the south southeast with some mounding within the waste mass. • Slug tests reported conductivity between 0.4 and 0.7 m per day. With a calculated gradient of 0.01 m/m and an estimated porosity of 0.1, the estimated groundwater flow rate ranges from 15 to 26 m per year.

Audit Report Reference & Distance from Site	Key Findings
	• Pathways for leachate generation were considered to be most likely through the percolation of rainfall through the clay cap of the landfill cell and flow of groundwater into the landfill, intercepting the waste mass. • Assessor considered the groundwater and leachate bore network to be adequate to assess landfill impact. • Distinct differences between leachate and groundwater concentrations were reported, with groundwater dominated by sodium and chloride and leachate (LS2) dominated by bicarbonate. • Leachate bores reported elevated ammonia (as N) with MW1 also reporting elevated ammonia (as N), suggesting some leachate impact on the groundwater bore. MW1 concentrations have however remained below ANZECC freshwater criteria. • The absence of elevated methane (<0.05 to 0.1 mg/L) and potassium in groundwater suggests there was no significant leachate impacts to groundwater. Leachate methane concentrations have been reported as high as 5 to 7.6 mg/L. • Minor amounts of PFOS (0.67 ug/L), PFOA (0.77 ug/L) and PFHxS (0.67 ug/L) were reported in LS1 in September 2018. This was analysed for to inform the new TWA. These concentrations were on the lower/middle end of what is generally reported in landfill leachate within Victorian landfills. • The groundwater at the landfill was not considered to preclude any relevant beneficial use. Some elevated results (sodium, chloride and zinc) were considered to be background. • Impacted groundwater and leachate was expected to attenuate before reaching nearby surface water bodies. • The assessor recommended the leachate pump be repaired or reprogramed as it does not appear that leachate was pumped in the previous 10-year period. However, leachate level data was available. It was also suggested that a data logger be installed in LS1 to monitor water level data over a three-month period. • The CSM for the site is shown below. 
GHD (2020), *All Nations Park, Landfill Gas Risk Assessment (LFGRA)*	Key information from the LFGRA report is as follows: • The LFGRA was undertaken to assess onsite receptors (park users, staff, contractors) and offsite residential and commercial properties (i.e. shopping centre users/workers) adjacent to the former Northcote Landfill • Scope included preparation of a CSM, modelling of landfill gas generation rates, assessment of the landfill gas monitoring results, qualitative risk assessment and a semi-quantitative risk assessment. • Landfilling occurred between 1979 to 1998 within the current extent of All Nations Park to a depth of 50 m. The reported landfill volume was 3,000,000 m^3. The landfill was unlined and capped with 0.5 m of clay overlying 0.2 m of topsoil to support vegetation growth. • There is a landfill gas collection system below the cap comprising of gas collection trenches, perimeter cut off trenches and a gas drainage blanket. The gas drainage blanket is vented passively via tall steel vents across the park. The gas drainage blanket was constructed of 1 m thick clean gravel or rubble sized between 35 and 200 mm and contains less than 10% fines. A geofabric is placed over the fill to ensure that gravel remains free of clay and fines. The clay cap overlies the drainage blanket.

Audit Report Reference & Distance from Site	Key Findings
	• Approximately 8,500 m of perimeter and internal gas trenches were also constructed prior to cap placement. The perimeter trenches were intended to minimise gas migration between the waste and quarry walls by directing the base to perimeter gas venting points for passive venting. Internal trenches were approximately 1 m deep x 0.5 m wide, with perimeter trenches 1.5 m deep and 0.5 m wide. All trenches were filled with 20-40 mm aggregate and sloped to a minimum 2% grade with slotted 100 mm MDPE pipe in the upper half of the trenches. Geofabric was placed over the top of the trenches to stop fines from building up. The Assessor noted as-built plans were not provided, so confirmation of actual design was not available. • Passive gas vents consisted of 33 steel pipes extending up to 6 m above the final site surface. A number of vents were reported to be in different locations than indicated in the design documents. • Gas seepage was reportedly recorded near the southeast corner of Northcote Plaza in 1986 when gas was observed to have migrated through rubble access ramp to near the Kmart Tyre and Auto shop. A 5-6 m deep trench was reported to have been excavated and backfilled with coarse gravel in this area to control gas seepage and accumulation beneath the building. A gas drainage blanket was also designed and installed in the car park area, consisting of 150 mm deep gravel layer overlain by bentonite to prevent migration of gas in the car park crushed rock base layer. A layer of rock was placed on top of the bentonite followed by the pavement layer. Internal gas drainage trenches were designed to be installed at 50 m intervals and connected to the passive venting system. The perimeter trenches were designed to be installed at the eastern edge of the car park and at the quarry edge and were approximately 2 m deep. Based on DRC's review, it is unsure if the gas drainage blanket near the Plaza building was ever installed. • Modelled landfill gas generation rates ranged from 186 to 385 m^3/hr. Data from 2010 to 2020 was used for the LFGRA. • Pathways to receptors were via direct surface emissions to onsite buildings and diffusion and/or advection for offsite buildings either through the base of structures or via gaps/cracks in the seals of pipes/conduits connecting the surface to buildings. • The following was noted: landfill gas bore spacing exceeds the recommended spacing outlined in the landfill BPEM, landfill gas was still being generated within the landfill mass and elevated methane (>1% v/v) has not been recorded in any perimeter bores outside the gas collection blanket and waste extent. • Carbon dioxide concentrations were consistently reported in perimeter bores (GB2A, GB7A, GB9A and GB13A/B) which appears to be from oxidised methane. • Recorded flow rates were generally low (no more than 0.1 L/hr). • No elevated methane was detected in surrounding underground service pits, the onsite toilet or park office. Ambient levels of methane were detected in the underground loading dock adjacent to the site. • Dissolved methane in groundwater was generally low and below adopted criteria and not considered to pose a significant landfill gas risk. • No elevated surface methane emissions have been detected since 2016. Previous readings appear to be related to the edges of the leachate sumps or damage to the cap. • The assessor concluded that of the 11 landfill gas bores, nine were assessed as very low risk and two were low risk. • The semi-quantitative risk assessment gave the overall site a 'Characteristic Situation CS2 – low hazard potential' or 'low risk' based on elevated carbon dioxide detected in the perimeter bores. • The following was recommended by the Assessor: any new buildings constructed on the extent of the landfill where there is potential for gas migration would require gas protection measures and existing passive gas collection and venting system should remain and be maintained.
GHD (2020), *All Nations Park, Aftercare Management Plan (AMP)*	Key information from the report is as follows: • AMP and risk based environmental monitoring program (EMP) were prepared for the closed Northcote Landfill to meet the EPA PAN 90010376 requirements. • Included an overview of site conditions, site inspections/maintenance plan and EMP. Inspection and maintenance plans included the following: • Cap Inspection Program: should be undertaken biannually, ideally in summer and winter, following significant rainfall events or when issues are observed by park maintenance staff. Remediation measures were identified for any issues with the cap.

Audit Report Reference & Distance from Site	Key Findings
	• Leachate Management: LS1 levels of leachate were observed above the maximum leachate level of 41.8 m AHD. Leachate inspection process is currently in place for annual testing in line with TWA and includes water flowmeter readings on 15th of each month. Leachate pump must be kept in working condition and pumping and flow meter calibration is required annually. • Landfill Gas Management: landfill gas venting pipes require inspection at the same time as the landfill cap inspections to check for damage to be undertaken biannually – ideally in December and June. • Surface Water Management: water collection system inspections and checklist to be undertaken biannually at the same time as the landfill cap inspections and following significant landfill events (1 in 20-year rainfall) or when ongoing wet weather occurs. • Groundwater monitoring (MW1, MW2A, MW3, MW4 and MW5), leachate sumps (LF1, LS2 and LS3) to be monitored for SWL and analysed for a range of potential contaminants biannually in December and June. • Guidance for workers and contractors was also provided within the AMP. • The AMP did not recommend any ongoing environmental audit (53V) was required based on the low environmental risks posed by the former landfill. Some maintenance requirements and monitoring actions were recommended to be undertaken at the site including: • Attempting to unblock MW1; • Repairing the leachate extraction pump and undertaking calibration; • Installation of a data logger for continuous reporting of water levels at LS1; • Undertaking leachate quality screening for the TWA; and • Installation of continuous gas monitors in GB2A, GB7A, GB12C and GB13B for four weeks. Guidance for workers and contractors was also provided within the AMP. The AMP did not recommend any ongoing environmental audit (53V) was required based on the low environmental risks posed by the former landfill.

5.9. Summary of Site History Review

The site history review identified the following with regards to the site and surrounding area:

- Northcote Brickworks started in 1866 when quality clay soils were discovered near the rear of Carter's Arms Hotel on Separation Street by John Roberts. The first bricks to be produced were in 1873 with a single kiln/chimney stack. Production was approximately 1-2 million bricks per year, increasing to 4 million bricks per month by 1886. The quarry used for brick production was excavated to a depth of 50 m.
- Two kilns and other buildings were situated on the site during brick production.
- The former brick quarry was used by the local council as a solid inert waste landfill (including garden cuttings, paper and timber) and began being filled in the late 1970s, and was capped and rehabilitated between 1998 and 2002. Management measures at the former landfill include leachate management, cap inspections, massive landfill gas vents and gas drainage layer beneath the carpark to the east of the site. The gas drainage layer is a 1m thick gravel layer with additional gravel-filled 5-6 m deep 1-2 m wide trench around the perimeter of the landfill.
- Landfill gas migration from the former Northcote landfill is relatively low and leachate is managed by pumping and disposal.
- The Old Clay Pit landfill was also identified on the site's western boundary. Fill depths were between 6.2 and 12.1 m bgl. Inert waste within fill consisted of brick, concrete and plastic fragments, slag/ash sands and gravels.
- The following features/activities undertaken at the site may pose a potential contamination risk to the site:

- Historical landfill uses on western (Old Clay Pit) and eastern (Northcote Landfill/All Nations Park) boundaries of the site. Landfill gas ingress to the site is possible.
- Historical industrial use – two former kilns were originally on the site as part of brickworks production.
- DRC identified LNAPL within groundwater in the centre of the site (GW4) during the November 2024 for the first time. There is potential for an underground storage tank to be present beneath Northcote Plaza near the northern boundary of the site.

It is noted that given the extensive industrial use and landfill beneath portions of the site, it is likely that groundwater underlying the site is contaminated from landfilling activities and that landfill gas might migrate to the site. The potential contamination risks identified are in the process of being assessed as part of the ongoing Environmental Audit at the site.

6. CONTAMINANTS OF POTENTIAL CONCERN (COPCS)

Based on the historical primarily industrial use of the site, the COPCs identified for the site are presented in **Table 6.1** below.

Table 6.1: Contaminants of Potential Concern Applicable to this Site

Site Use	Contaminants of Potential Concern	Likely media in which COPCs may be identified at the subject site
Subject Site		
Former Quarrying and brickworks (kilns and possible manufacturing)	Metals, petroleum hydrocarbons and PAH[2]	Shallow soils, deeper soils and groundwater
Landfill / Uncontrolled fill in eastern and western potions of the site	TRH[1], metals, PAH[2], asbestos, inert waste, nitrogen species (including ammonia), methane, carbon dioxide, VFA[3]	Soils, soil vapour and groundwater
Potential historical fuel storage in the Underground Storage Tanks (USTs) in the north central portion of the site	TRH, BTEXN[4] and metals	Shallow soils, deeper soils, soil vapour and groundwater
Offsite		
Historical industrial businesses throughout area	TRH, VOCs[5], solvents, metals, PFAS[6]	Groundwater / Soil Vapour
Landfill Activities	VOCs, TRHs, LFG[7]	Soil Vapour / Groundwater

[1]Total recoverable hydrocarbons [2] Polycyclic aromatic hydrocarbons [3] Volatile Fatty Acids [4] Benzene, Toluene, Ethylbenzene, Xylenes [5]Volatile Organic Compounds [6]Per- and polyfluoroalkyl substances [7]LFG – Landfill Gases including Methane / Carbon Dioxide

Based on the current and historical works undertaken at the site, risk from landfill gas ingress to the site is considered to be 'low' and soil sampling has not indicated significant contamination that would preclude proposed uses. As part of the ongoing Environmental Audit being conducted at the site, additional works are required around assessment and remediation of the potential USTs beneath the building, including potential for vapour intrusion, and soil conditions beneath onsite buildings.

7. ASSESSMENT CONCLUSIONS

The site subject to this report, being the 25 Separation Street, or the southern portion of Northcote Plaza shopping centre and parking area (**Figure 1**), has been subjected to preliminary site investigation.

The outcomes of the investigation program completed at the site and reported, summarised or referred to by this document, indicate the following:

- The site was formerly part of Northcote Brickworks which started in 1866. Two kilns and other buildings were situated on the site during brick production with the clay quarries extending onto the site in the east and in the west.
- At the completion of brick making, the former brick quarry (east of the site) was used by the local council as a solid inert waste landfill (including garden cuttings, paper and timber) and began being filled in the late 1970s, and was capped and rehabilitated between 1998 and 2002. Management measures at the former landfill include leachate management, cap inspections, massive landfill gas vents and gas drainage layer beneath the carpark to the east of the site. The gas drainage layer is a 1m thick gravel layer with additional gravel-filled 5-6 m deep 1-2 m wide trench around the perimeter of the landfill.
- Landfill gas migration from the former Northcote landfill is relatively low and leachate is managed by pumping and disposal.
- The Old Clay Pit landfill was also identified on the site's western boundary. Fill depths were between 6.2 and 12.1 m bgl. Inert waste within fill consisted of brick, concrete and plastic fragments, slag/ash sands and gravels. This pit was filled prior to 1965.
- The following features/activities undertaken at the site may pose a potential contamination risk to the site:
  - Historical landfill uses on western (Old Clay Pit) and eastern (Northcote Landfill/All Nations Park) boundaries of the site. Landfill gas ingress to the site is possible, although risk is considered 'low'.
  - Historical industrial use – two former kilns were originally on the site as part of brickworks production.
  - Previous site assessments identified LNAPL within groundwater in the centre of the site. There is potential for an underground storage tank to be present beneath Northcote Plaza near the northern boundary of the site.

In accordance with the DELWP *Planning Practice Note 30 - Potentially Contaminated Land* (PPN30), the site meets the definition of 'potentially contaminated land' as landfill use is listed in Table 2 of PPN30 as having a high potential for contamination.

Given that the landfill extends onto the site both in the east and west, in the opinion of DRC, the site is subject to provisions made by Ministerial Direction No.1 under Section 12(1A) of the *Planning and Environment Act* 1987.

It is noted that based on the extensive industrial use and landfill beneath portions of the site, the potential contamination risks identified are in the process of being assessed as part of the ongoing Environmental Audit at the site. Additional works will be undertaken at the site to further assess soil, soil vapour and groundwater at the site prior to redevelopment.

8. STATEMENT OF LIMITATIONS

This document has been prepared based on a specific brief provided to DRC Environmental by T&P Northcote Development Pty Ltd. This document has been prepared with care and consideration to acceptable standards and current industry practice. This document is based on sub-surface conditions that may be variable which may result in changes to procedures, advice, recommendations or professional conclusions established by this document. DRC Environmental therefore reserve the right to change or withdraw this report.

DRC Environmental recommends only suitably qualified and experienced contractors and consultants should undertake technical assessment of this document and attempt contaminated land remediation projects.

Report prepared by:



Renee Prochazka
Principal Environmental Scientist

DRC Environmental Pty Ltd
13 August 2026

Reviewed by:



Sheridan Chapman
Senior Environmental Scientist

DRC Environmental Pty Ltd

FIGURES

PLATES



Plate 1: Separation Street looking east, observe drop in land height in this area.



Plate 2:FSG-BH09 (28/8/2024) – north of site



Plate 3: Eastern Carpark (Streetview December 2025)

.



Plate 4: GW4 Bailer check for LNAPL during GME (12/11/2024)

APPENDIX A – PROPERTY REPORTS AND DEVELOPMENT PLANS

PROPERTY REPORT

Energy, Environment and Climate Action

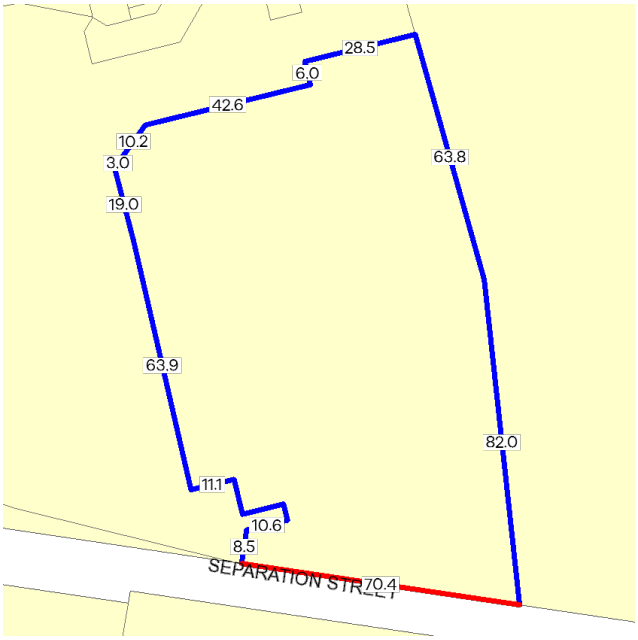
Created at 16 July 2026 11:53 AM

PROPERTY DETAILS

Lot and Plan Number:	**Lot 100 SP27953**
Address:	**33/25 SEPARATION STREET NORTHCOTE 3070**
Standard Parcel Identifier (SPI):	**100\SP27953**
Local Government Area (Council):	**DAREBIN** www.darebin.vic.gov.au
Council Property Number:	**216575**
Directory Reference:	**Melway 30 F8**

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.



Area: 9917 sq. m
Perimeter: 443 m
For this property:
Site boundaries
Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

3 overlapping dimension labels are not being displayed

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan at
Title and Property Certificates

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

PLANNING INFORMATION

Property Planning details have been removed from the Property Reports to avoid duplication with the Planning Property Reports from the Department of Transport and Planning which are the authoritative source for all Property Planning information.

The Planning Property Report for this parcel can found here - Planning Property Report

Planning Property Reports can be found via these two links
Vicplan https://mapshare.vic.gov.au/vicplan/
Property and parcel search https://www.land.vic.gov.au/property-and-parcel-search

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PROPERTY REPORT

Energy, Environment and Climate Action

Area Map



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PLANNING PROPERTY REPORT

Department of Transport and Planning

From www.planning.vic.gov.au at 16 July 2026 12:01 PM

PROPERTY DETAILS

Lot and Plan Number:	**Lot 100 SP27953**
Address:	**33/25 SEPARATION STREET NORTHCOTE 3070**
Standard Parcel Identifier (SPI):	**100\SP27953**
Local Government Area (Council):	**DAREBIN** www.darebin.vic.gov.au
Council Property Number:	**216575**
Planning Scheme:	**Darebin** Planning Scheme - Darebin
Directory Reference:	**Melway 30 F8**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

OTHER

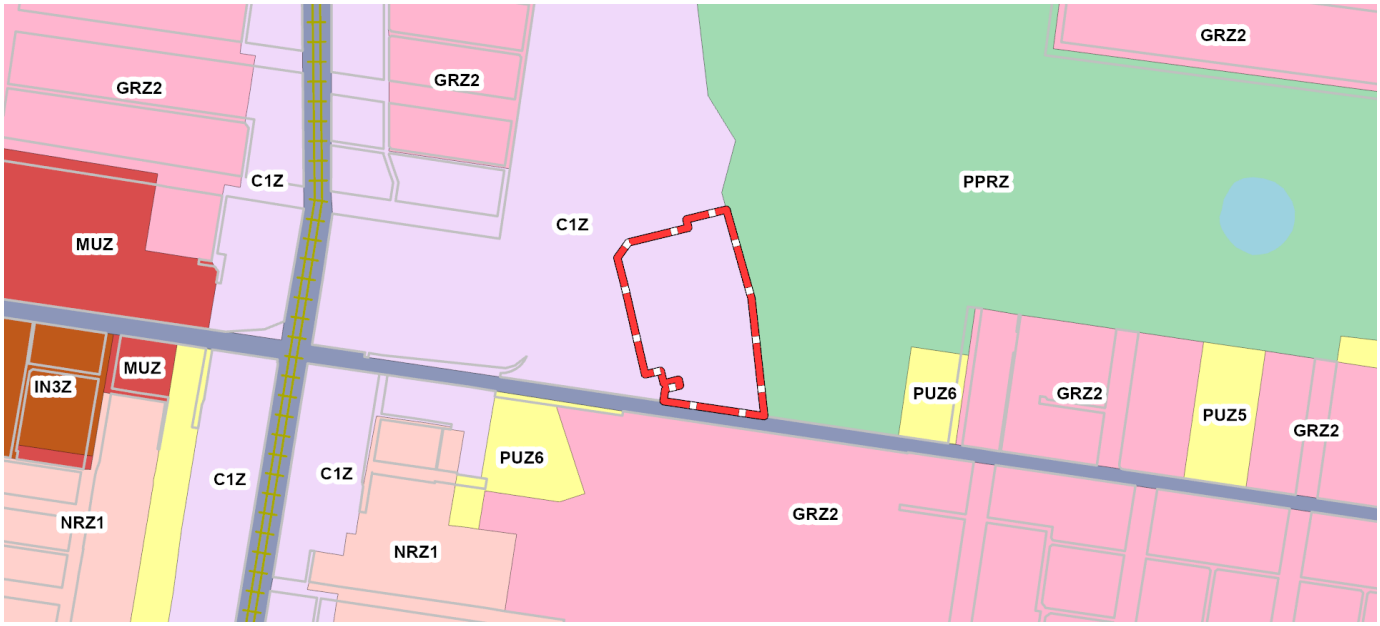
Registered Aboriginal Party:	**Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**
Fire Authority:	**Fire Rescue Victoria**

View location in VicPlan

Planning Zones

COMMERCIAL 1 ZONE (C1Z)

SCHEDULE TO THE COMMERCIAL 1 ZONE (C1Z)



C1Z - Commercial 1
GRZ - General Residential
IN3Z - Industrial 3
MUZ - Mixed Use
NRZ - Neighbourhood Residential
PPRZ - Public Park and Recreation
PUZ5 - Public Use-Cemetery/Crematorium
PUZ6 - Public Use-Local Government
TRZ3 - Significant Municipal Road
Tram line
Water area

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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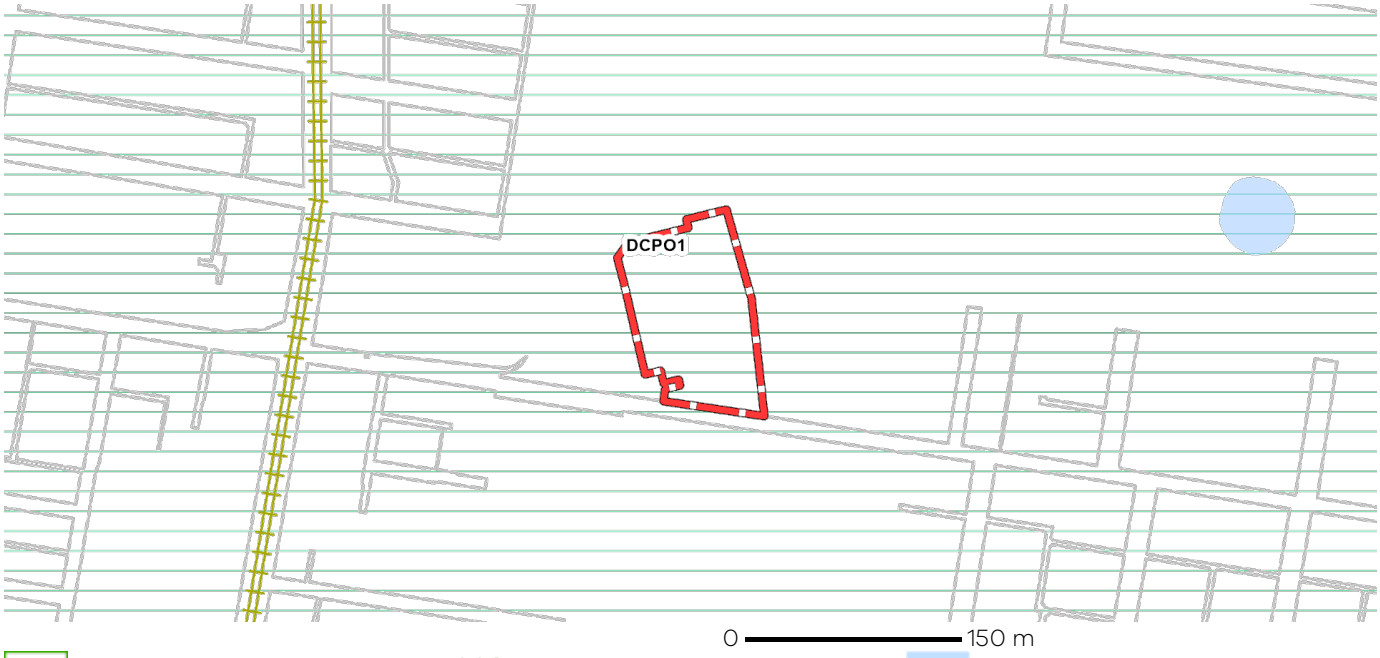
PLANNING PROPERTY REPORT

Department of Transport and Planning

Planning Overlays

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO)

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1 (DCPO1)



DCPO - Development Contributions Plan Overlay

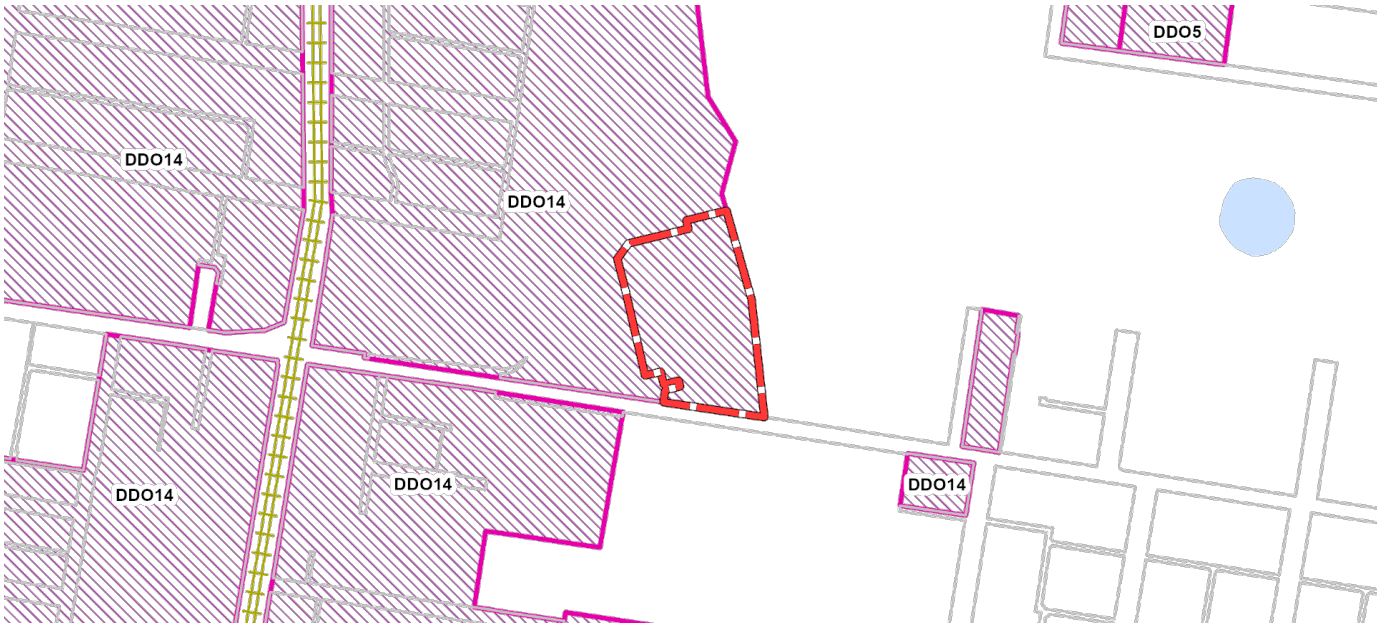
Tram line

Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

DESIGN AND DEVELOPMENT OVERLAY (DDO)

DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14 (DDO14)



DDO - Design and Development Overlay

Tram line

Water area

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PLANNING PROPERTY REPORT

Department of Transport and Planning

Planning Overlays

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

DEVELOPMENT PLAN OVERLAY (DPO)
ENVIRONMENTAL AUDIT OVERLAY (EAO)
HERITAGE OVERLAY (HO)
PUBLIC ACQUISITION OVERLAY (PAO)
SPECIAL BUILDING OVERLAY (SBO)



DPO - Development Plan Overlay
EAO - Environmental Audit Overlay
HO - Heritage Overlay
PAO - Public Acquisition Overlay
SBO - Special Building Overlay
Tram line
Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

Further Planning Information

Planning scheme data last updated on 14 July 2026.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.vic.gov.au/vicplan/

For other information about planning in Victoria visit https://www.planning.vic.gov.au

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PLANNING PROPERTY REPORT

Department of Transport and Planning

Designated Bushfire Prone Areas

This parcel is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.



Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to Victoria and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Regulations Map (NVR Map) https://mapshare.vic.gov.au/nvr/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

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PLANNING PROPERTY REPORT

Department of Transport and Planning

From www.planning.vic.gov.au at 16 July 2026 12:02 PM

PROPERTY DETAILS

Address:	**GX4/25 SEPARATION STREET NORTHCOTE 3070**
Lot and Plan Number:	**Lot 58 SP27953**
Standard Parcel Identifier (SPI):	**58\SP27953**
Local Government Area (Council):	**DAREBIN** www.darebin.vic.gov.au
Council Property Number:	**231128**
Planning Scheme:	**Darebin** Planning Scheme - Darebin
Directory Reference:	**Melway 30 F8**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

OTHER

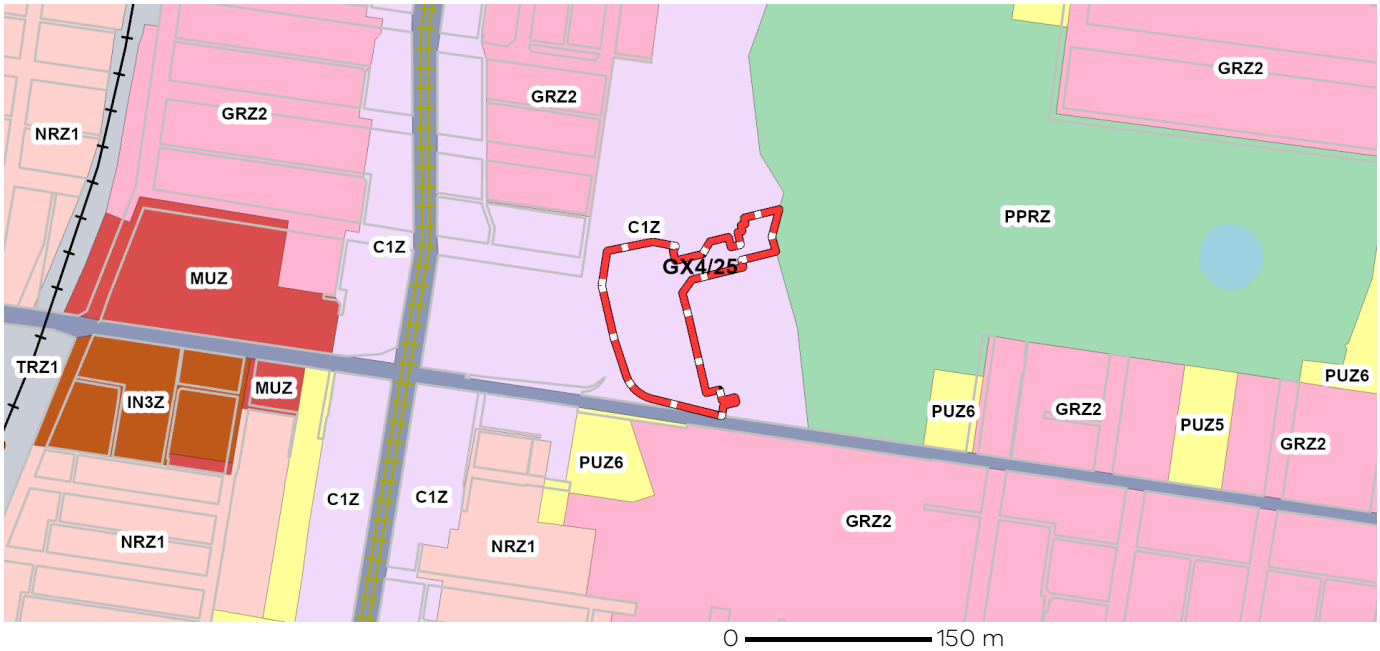
Registered Aboriginal Party:	**Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**
Fire Authority:	**Fire Rescue Victoria**

View location in VicPlan

Planning Zones

COMMERCIAL 1 ZONE (C1Z)

SCHEDULE TO THE COMMERCIAL 1 ZONE (C1Z)



C1Z - Commercial 1
GRZ - General Residential
IN3Z - Industrial 3
MUZ - Mixed Use
NRZ - Neighbourhood Residential
PPRZ - Public Park and Recreation
PUZ2 - Public Use-Education
PUZ5 - Public Use-Cemetery/Crematorium
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Railway line
Tram line
Water area

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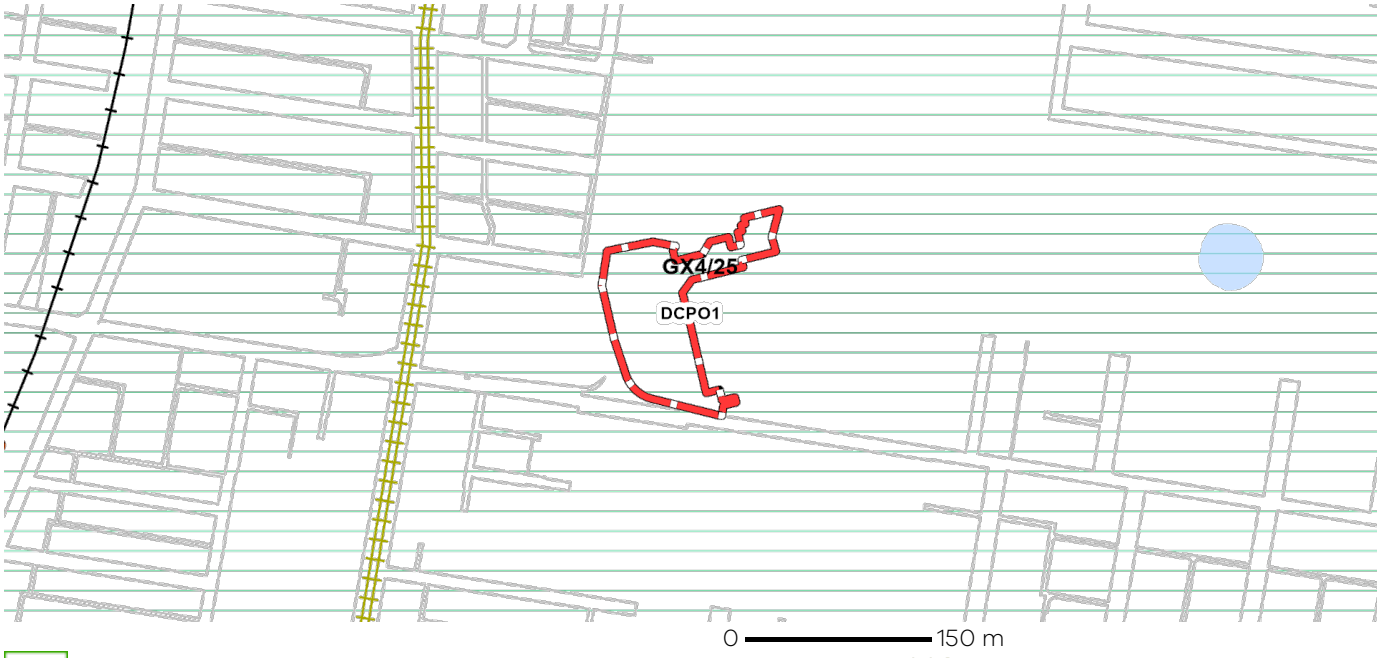
PLANNING PROPERTY REPORT

Department of Transport and Planning

Planning Overlays

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO)

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1 (DCPO1)



DCPO - Development Contributions Plan Overlay

Railway line

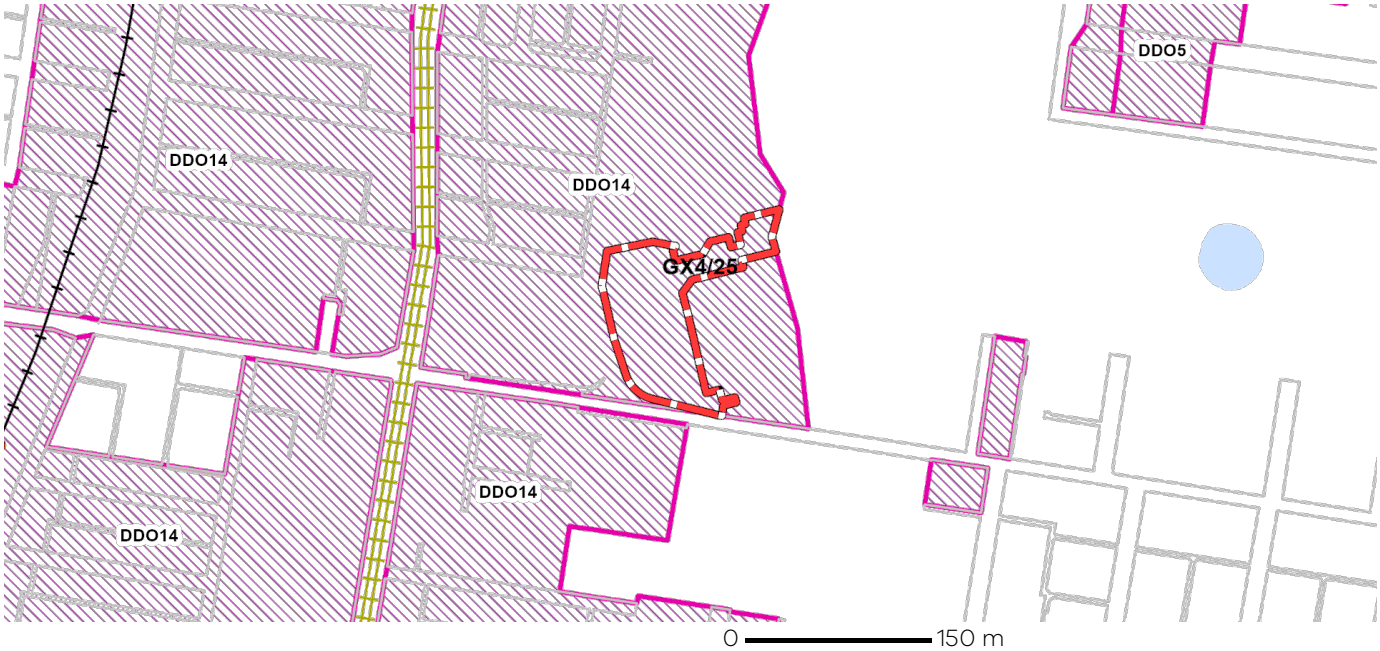
Tram line

Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

DESIGN AND DEVELOPMENT OVERLAY (DDO)

DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14 (DDO14)



DDO - Design and Development Overlay

Railway line

Tram line

Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

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Planning Overlays

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

DEVELOPMENT PLAN OVERLAY (DPO)
ENVIRONMENTAL AUDIT OVERLAY (EAO)
HERITAGE OVERLAY (HO)
PUBLIC ACQUISITION OVERLAY (PAO)
SPECIAL BUILDING OVERLAY (SBO)



DPO - Development Plan Overlay
EAO - Environmental Audit Overlay
HO - Heritage Overlay
PAO - Public Acquisition Overlay
SBO - Special Building Overlay
Railway line
Tram line
Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

Further Planning Information

Planning scheme data last updated on 14 July 2026.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.vic.gov.au/vicplan/

For other information about planning in Victoria visit https://www.planning.vic.gov.au

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PLANNING PROPERTY REPORT

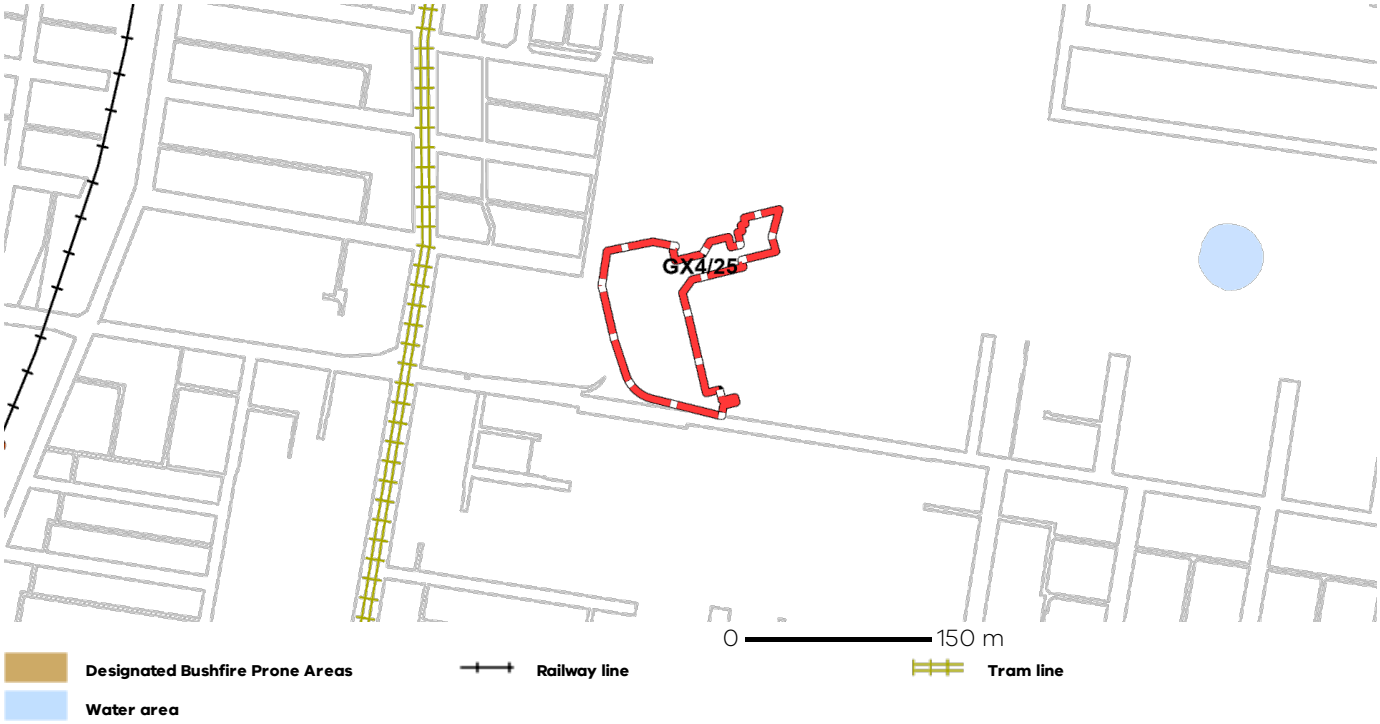
Department of Transport and Planning

Designated Bushfire Prone Areas

This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.



Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to Victoria and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Regulations Map (NVR Map) https://mapshare.vic.gov.au/nvr/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

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PROPERTY REPORT

Energy, Environment and Climate Action

Created at 16 July 2026 11:53 AM

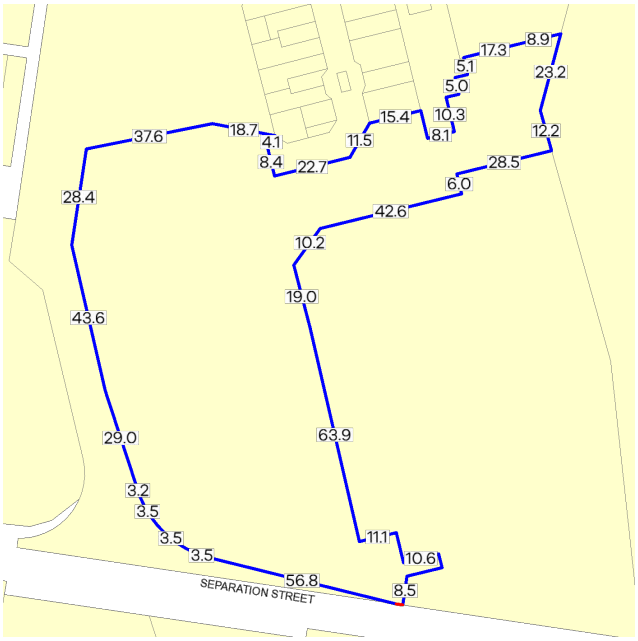
PROPERTY DETAILS

Lot and Plan Number:	**Lot 52 SP27953**
Address:	**GX12-13/25 SEPARATION STREET NORTHCOTE 3070**
Standard Parcel Identifier (SPI):	**52\SP27953**
Local Government Area (Council):	**DAREBIN** www.darebin.vic.gov.au
Council Property Number:	**231132 (Part)**
Directory Reference:	**Melway 30 F8**

Note: There are 38 properties identified for this site.
These can include units (or car spaces), shops, or part or whole floors of a building.
Dimensions for these individual properties are generally not available.

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.



Area: 10124 sq. m (1.01 ha)
Perimeter: 646 m
For this property:
— Site boundaries
— Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

16 overlapping dimension labels are not being displayed

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan at
Title and Property Certificates

PARCEL DETAILS

This is 1 parcel of 2 parcels comprising this property.The parcel searched for is marked with an * in the table below

	Lot/Plan or Crown Description	SPI
*	Lot 52 SP27953	52\SP27953
	Lot 53 SP27953	53\SP27953

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

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PROPERTY REPORT

Energy, Environment and Climate Action

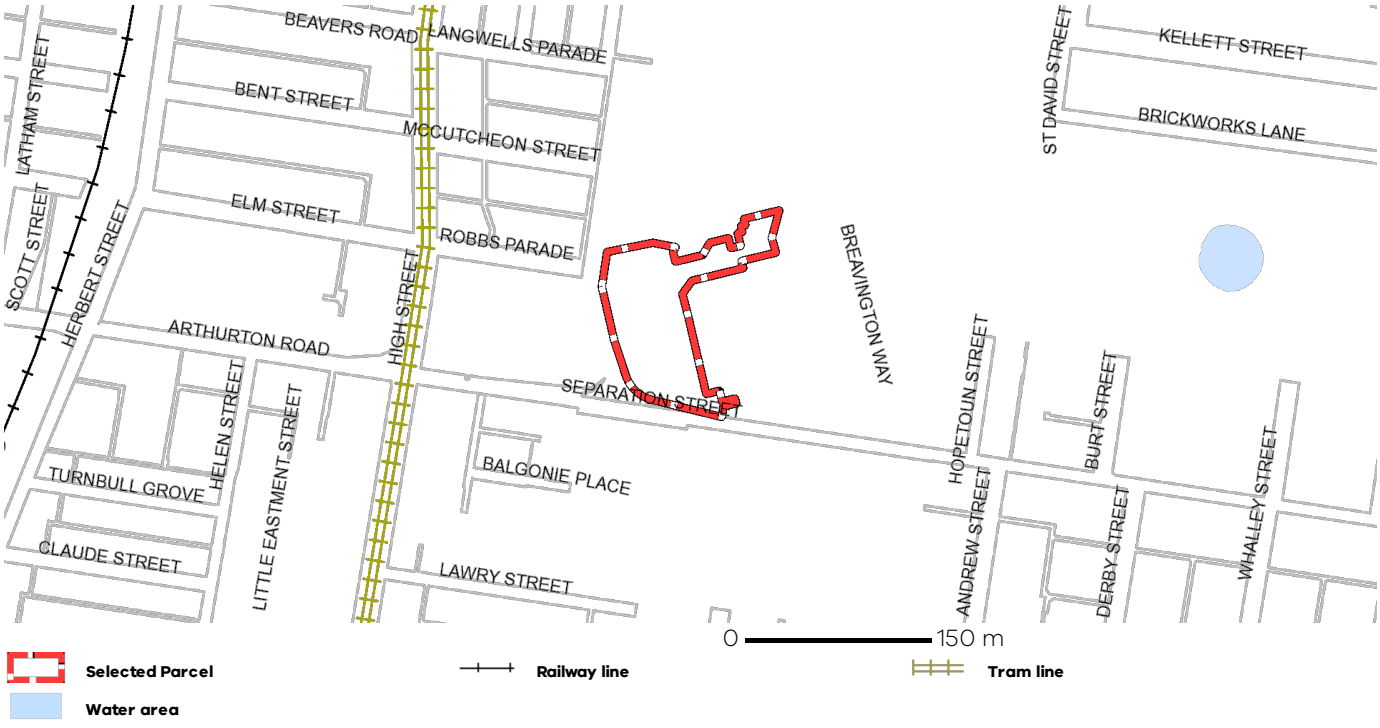
PLANNING INFORMATION

Property Planning details have been removed from the Property Reports to avoid duplication with the Planning Property Reports from the Department of Transport and Planning which are the authoritative source for all Property Planning information.

The Planning Property Report for this parcel can found here - Planning Property Report

Planning Property Reports can be found via these two links
Vicplan https://mapshare.vic.gov.au/vicplan/
Property and parcel search https://www.land.vic.gov.au/property-and-parcel-search

Area Map



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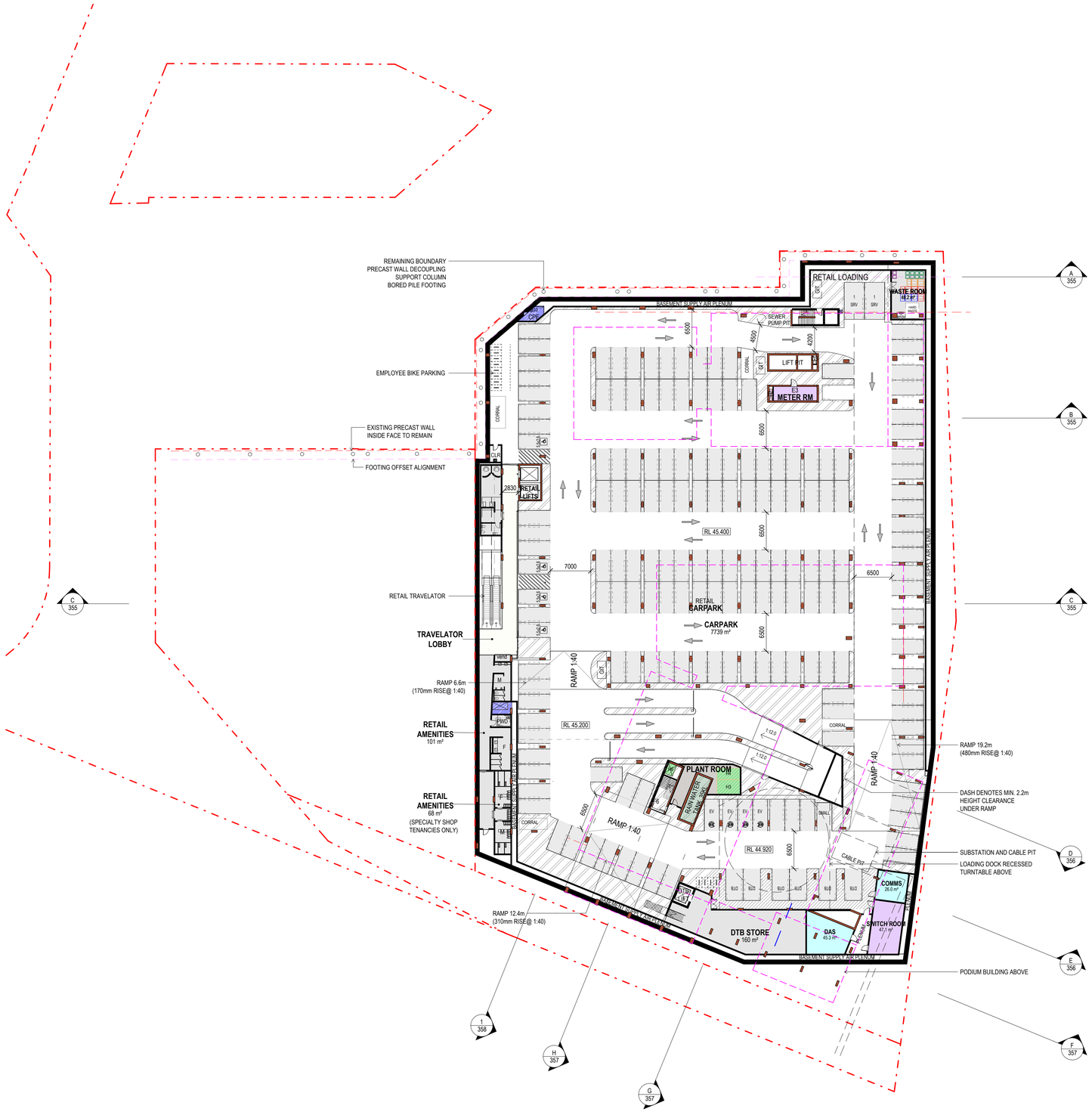

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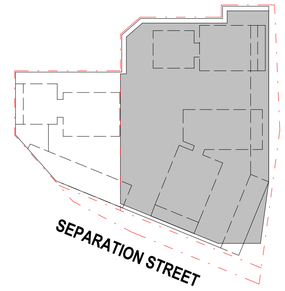

BASEMENT 1 RETAIL CAR PARK		
TYPE	BAY SIZE	COUNT
B01		
ACCESSIBLE	2600x5500	4
DTB	3000x5500	6
SMALL	2600x4900	1
STANDARD	2600x5500	169
TOTAL: 180		

Rev.	Issue	Revision Description	Date	Appr by
8		CONSULTANT BACKGROUND ISSUE	22.05.26	
7		COORDINATION ISSUE	16.05.26	
6		UPDATE	15.05.26	
5		COORDINATION ISSUE	17.04.26	
4		OVGA REVIEW 3	27.03.26	
3		COORDINATION ISSUE	20.03.26	
2		OVGA REVIEW 2	13.02.26	
1		OVGA REVIEW	05.11.25	

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ABN 83 006 814 268

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Client: TIME AND PLACE

Project: NORTHCOTE VILLAGE
NORTHCOTE VILLAGE

Title: FLOOR PLANS
FLOOR PLAN - BASEMENT 01

Project No.: 2413
Scale @ A1: 1 : 400
Date: 22/05/2026
Drawing Status: SCHEMATIC DESIGN
Drawing No.: AR 100
Revision: 8

PRINTED: 22/05/2026 6:30:12 PM
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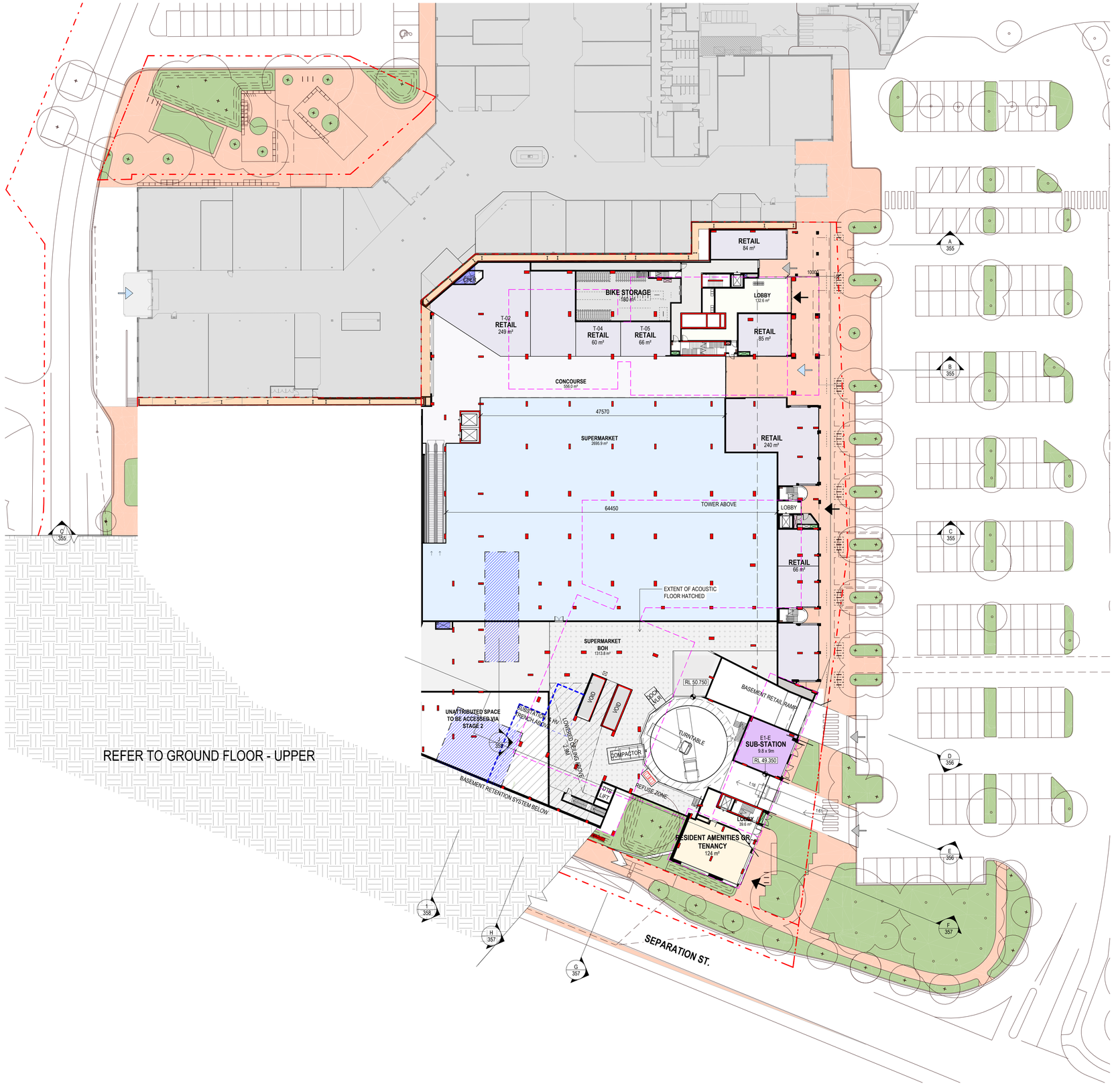

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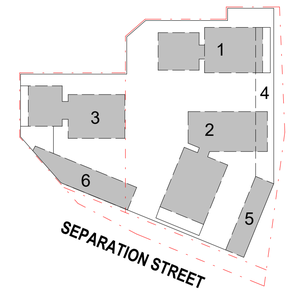

Rev.	Issue	Revision Description	Date	Appr by
6		CONSULTANT BACKGROUND ISSUE	22.05.26	
5		COORDINATION ISSUE	16.05.26	
4		COORDINATION ISSUE	17.04.26	
3		COORDINATION ISSUE	20.03.26	
2		OVGA REVIEW 2	13.02.26	
1		OVGA REVIEW	05.11.25	

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Project: NORTHCOTE VILLAGE
NORTHCOTE VILLAGE

Title: FLOOR PLANS
FLOOR PLAN - GROUND LOWER (STAGE 1)

Project No.: 2413

Scale @ A1: 1 : 400

Date: 22/05/2026

Drawing Status: SCHEMATIC DESIGN

Drawing No.: AR 101.1

Revision: 6

PRINTED: 22/05/2026 7:09:36 PM
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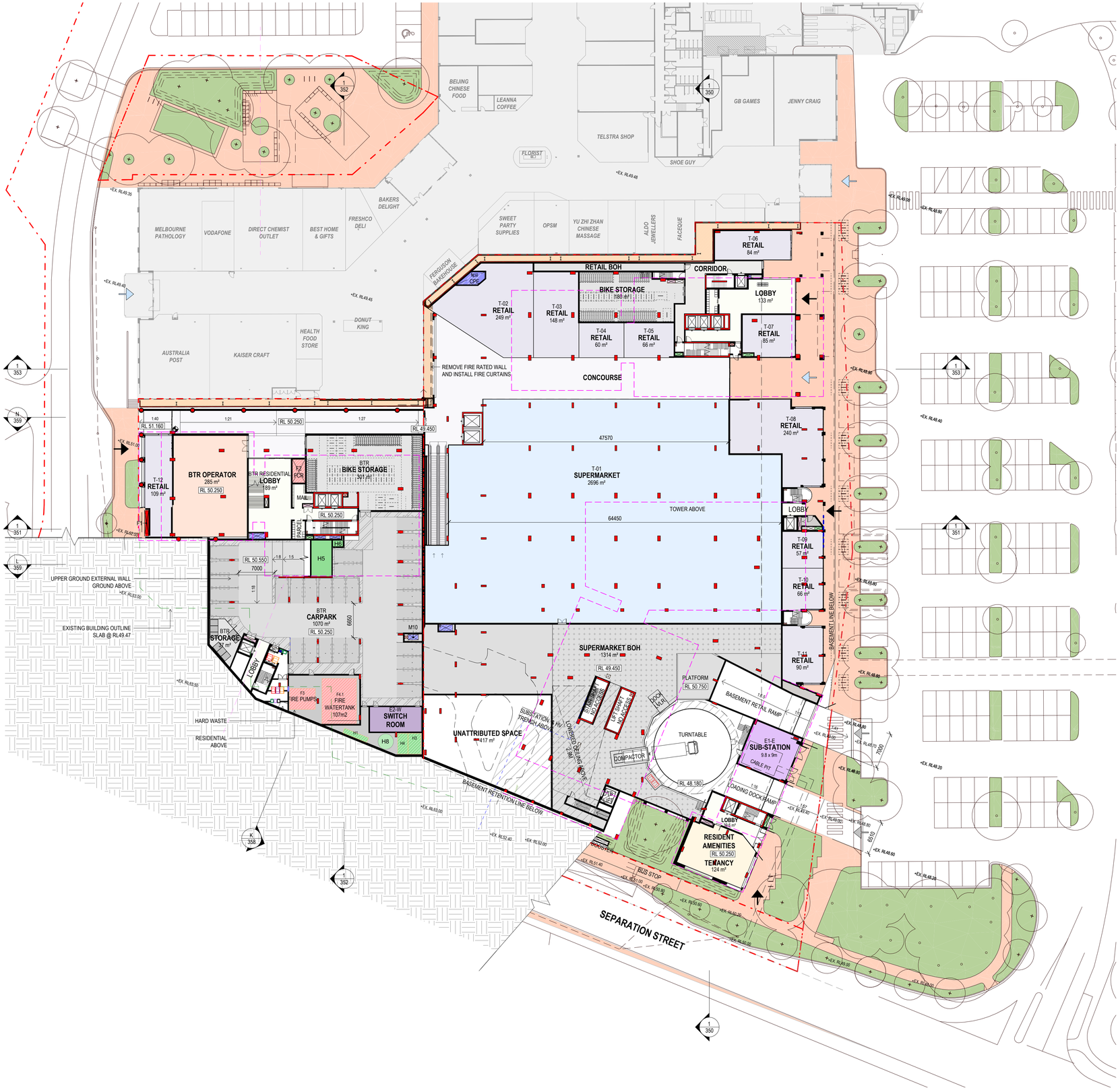

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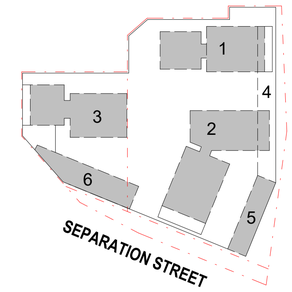

CAR PARKING LEVEL LOWER GROUND	
STAGE 2	COUNT
RESIDENTIAL (STAGE 2 BTR)	30

TOTAL: 30

Rev.	Issue	Revision Description	Date	Appr by
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7		COORDINATION ISSUE	16.05.26	
6		UPDATE	15.05.26	
5		COORDINATION ISSUE	17.04.26	
4		OVGA REVIEW 3	27.03.26	
3		COORDINATION ISSUE	20.03.26	
2		OVGA REVIEW 2	13.02.26	
1		OVGA REVIEW	05.11.25	

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Project: NORTHCOTE VILLAGE
NORTHCOTE VILLAGE

Title: FLOOR PLANS
FLOOR PLAN - GROUND LOWER (STAGE 2)

Project No.: 2413
Scale @ A1: 1 : 400
Date: 22/05/2026
Drawing Status: SCHEMATIC DESIGN
Drawing No.: AR 101.2
Revision: 8

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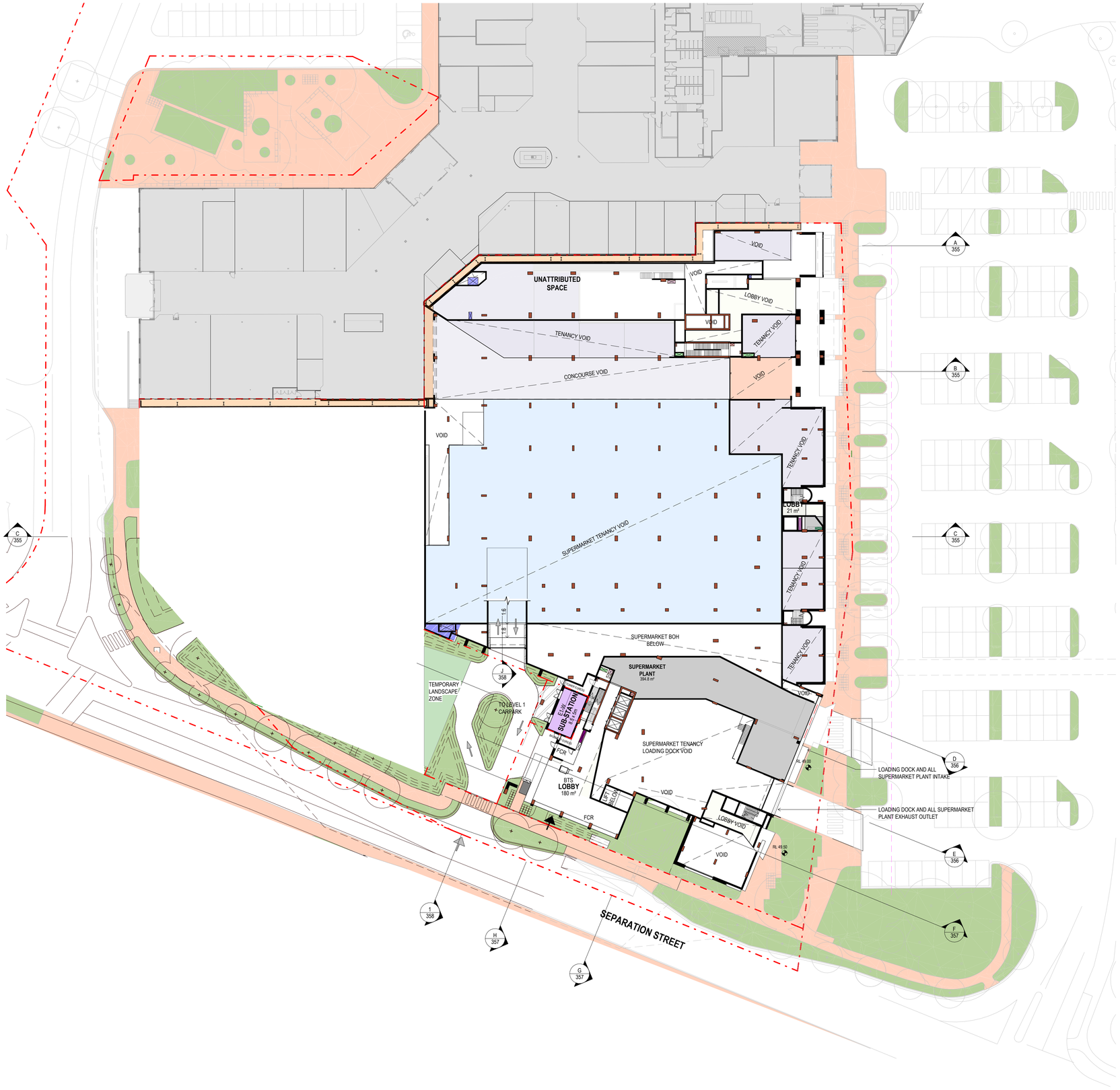

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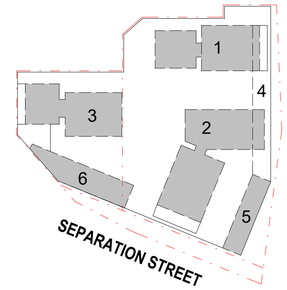

Rev.	Issue	Revision Description	Date	Appr by
2		CONSULTANT BACKGROUND ISSUE	22.05.26	
1		COORDINATION ISSUE	16.05.26	

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Project: NORTHCOTE VILLAGE
NORTHCOTE VILLAGE

Title: FLOOR PLANS
FLOOR PLAN - GROUND UPPER (STAGE 1)

Project No.: 2413

Scale @ A1: 1 : 400

Date: 22/05/2026

Drawing Status: SCHEMATIC DESIGN

Drawing No.: AR 102.1

Revision: 2

PRINTED: 22/05/2026 7:09:49 PM
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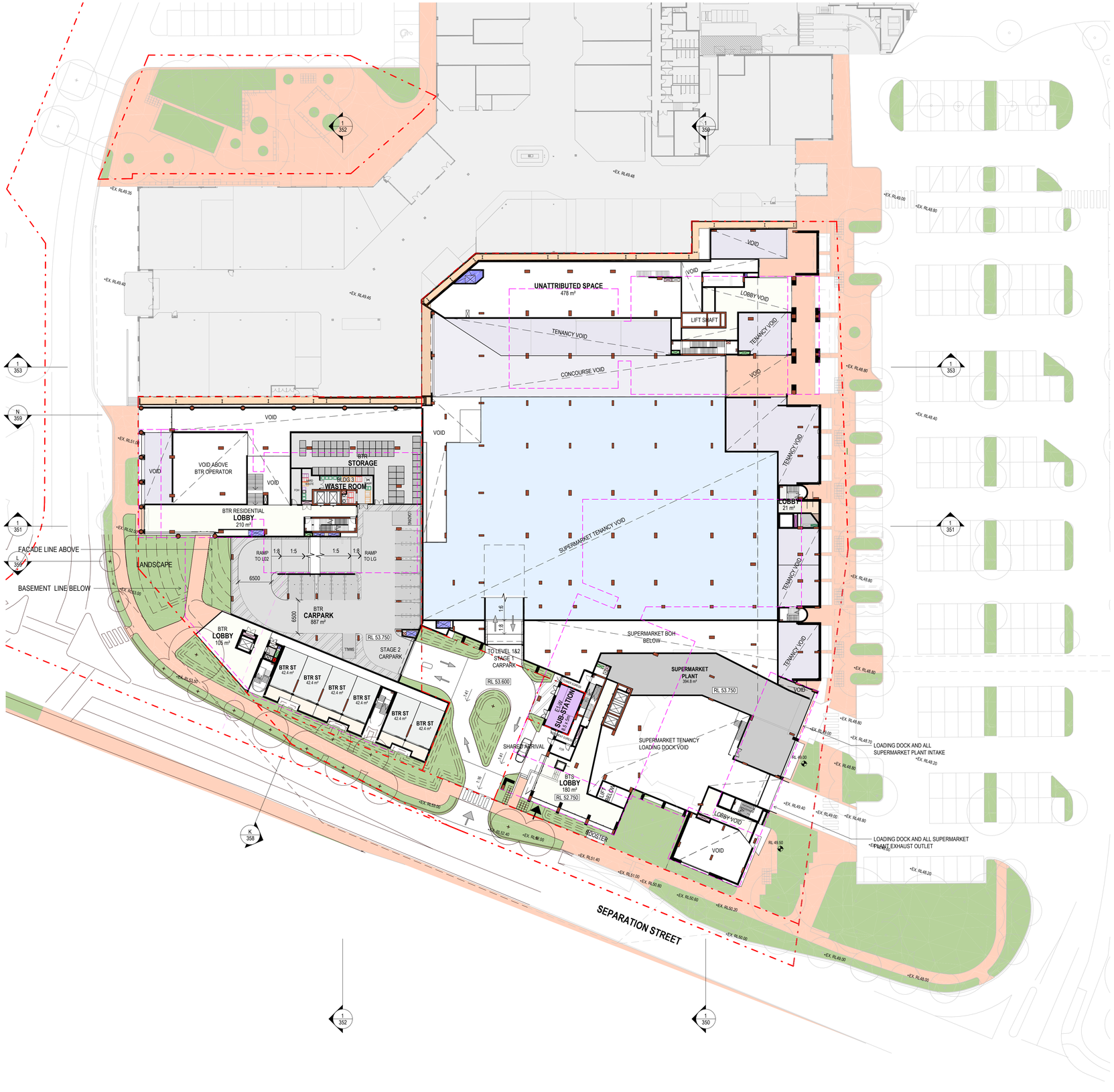

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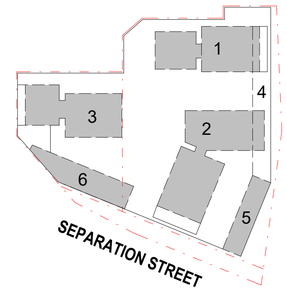

CAR PARKING LEVEL UPPER GROUND	
STAGE 2	COUNT
RESIDENTIAL (STAGE 2 BTR)	13

TOTAL: 13

Rev.	Issue	Revision Description	Date	Appr by
8		CONSULTANT BACKGROUND ISSUE	22.05.26	
7		COORDINATION ISSUE	16.05.26	
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NORTHCOTE VILLAGE

Title: FLOOR PLANS
FLOOR PLAN - GROUND UPPER (STAGE 2)

Project No.: 2413
Scale @ A1: 1 : 400
Date: 22/05/2026
Drawing Status: SCHEMATIC DESIGN
Drawing No.: AR 102.2
Revision: 8

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APPENDIX B – PREVIOUS REPORTS & FOI REPORTS FOR ALL NATIONS PARK

Douglas Partners
Geotechnics | Environment | Groundwater

Integrated Practical Solutions

Report on
Limited Detailed Site Investigation (Contamination)

Proposed Mixed Use Development
25 Separation Street, Northcote

Prepared for
Northcote Devco Pty Ltd

Project 95409.02
R.002.Rev2
2 August 2021



Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	95409.02	Document No.	R.002.Rev2
Document title	Report on Limited Detailed Site Investigation (Contamination) Proposed Mixed Use Development		
Site address	25 Separation Street, Northcote		
Report prepared for	Northcote Devco Pty Ltd		

Document status and review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Felix Smalley	Dean Woods	23 July 2021
Revision 1	Felix Smalley	Dean Woods	30 July 2021
Revision 2	Felix Smalley	Dean Woods	2 August 2021

Distribution of copies

Status	Electronic	Paper	Issued to
Revision 0	√	0	Ryan O'Sullivan Northcote Devco Pty Ltd
Revision 1	√	0	Ryan O'Sullivan Northcote Devco Pty Ltd
Revision 2	√	0	Ryan O'Sullivan Northcote Devco Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature		Date
Author		Felix Smalley	2 August 2021
Reviewer		Dean Woods	2 August 2021

bsi. ISO 9001 Quality Management
FS 604853

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ABN 75 053 980 117
www.douglaspartners.com.au
231 Normanby Road
South Melbourne VIC 3205
PO Box 5051
South Melbourne VIC 3205
Phone (03) 9673 3500

Executive Summary

In 2019, Douglas Partners Pty Ltd (DP) undertook a preliminary site investigation for contamination (PSI) for the proposed redevelopment of the southern portion of Northcote Plaza at 25 Separation Street, Northcote. To provide an initial indication of the extent of historical quarrying and landfilling activities around the site, a review of historical site images and maps, and an intrusive soil investigation was undertaken. The presence of deep fill was identified to the east and west of the site, and fill soil was provisionally categorised as Category B contaminated soil. In subsequent revisions to the PSI, the final being prepared in February 2021, DP responded to the following concerns raised by Darebin City Council (Council);

- The proximity of the development to Council-owned landfill gas management infrastructure extending into the eastern portion of the site;
- The location of the site within the buffer zone of the Council-managed landfill to the east;
- The landfill gas conditions beneath the site and environmental requirements for development; and
- The ongoing risk to occupants of the proposed development with respect to the adjacent landfill.

Council subsequently provided DP with landfill gas and hydrogeological assessment reports conducted by their consultants as part of a Freedom of Information request. DP's PSI report concluded that the site could be made suitable for the proposed development, although data gaps were required to be addressed in additional intrusive investigations.

This limited detailed site investigation for contamination (DSI) sought to address those data gaps by further defining the extent of landfill, assess the presence and status of landfill gas within the development envelope, and to assess the suitability of the site for the proposed development from a contamination perspective.

A preliminary conceptual site model (CSM) was developed based on the PSI and all known information. 12 boreholes were drilled within the recently vacated Kmart tenancy located using a combined systematic and judgemental based method. Landfill gas monitoring wells were installed in every borehole and subsequently measured for the presence of landfill gases. Soil samples were submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis. Results were analysed and discussed with a view to creation of a revised CSM, and final report of results and related discussion.

Laboratory analysis of soil samples reported fill soil results consistent with Category B contaminated soil due to leachable lead (identified during the PSI), Total Petroleum Hydrocarbons (TPH) and Total Polycyclic Aromatic Hydrocarbon (PAH) concentration. Natural soil is provisionally categorised as Category A contaminated soil due to elevated concentrations of Total PAH in an isolated area. Hydrocarbon contamination from an unidentified source was found in underlying soil in the north-west corner of the site, in the vicinity of borehole DP14. A final landfill gas screening value (GSV) was selected based on individual Q_{hg} (product of measured individual borehole flow and gas concentration) to be 0.042 L/hr, classifying the site as 'very low risk'. The maximum Q_{hg} calculated was 0.878 L/hr at DP14, although this is considered to be associated with natural degradation of hydrocarbon contamination. No individual results for CH_4 and CO_2 % v/v exceeded the gas trigger values adopted by Council's consultants of 1.0% v/v for CH_4 and 6.6% v/v for CO_2.

Based on these findings and the amendment of the development plan to avoid disturbance to the Council-owned landfill infrastructure [Council issue 1 (a), 2 (a), 2 (b), 3, 4 (a), 4 (c), 4 (a), 4 (c), 4 (d), 4 (e)], DP recommends that readily available passive landfill gas protection measures such as: structural barriers (i.e. basement walls), ventilation measures (e.g. vented crushed rock layers), and membranes incorporated into the structure walls should be included in the development design [Council issue 1 (b), 2 (b), 2 (c), 2(d), 4 (b)]. Additional delineation testing is recommended by DP for the soil around DP14, as is installation of extra landfill gas and groundwater monitoring bores in this area. DP considers that the site represents a 'very low risk' with respect to landfill gas concentrations and can be made suitable for the proposed development subject to the implementation of the recommended and readily achievable management measures.

Douglas Partners
Geotechnics | Environment | Groundwater

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Report on Limited Detailed Site Investigation (Contamination)
Proposed Mixed Use Development
25 Separation Street, Northcote

1. Introduction

This report presents the findings of a limited detailed site investigation for contamination (DSI) undertaken for the proposed mixed use development within the southern portion of Northcote Plaza at 25 Separation Street, Northcote (from hereon in referred to as 'the site'). The investigation was commissioned via signed acceptance dated 16 June 2021 by Ryan O'Sullivan representing Northcote Devco Pty Ltd. The investigation was undertaken in general accordance with Douglas Partners Pty Ltd (DP) proposal 95409.02.P.002.Rev1, dated 16 June 2021.

DP has previously undertaken a preliminary site investigation for contamination (PSI) at the site (DP ref no. *95409.02.R.001.Rev4*) which was prepared in response to the following concerns raised by Darebin City Council (Council);

- The proximity of the development to Council-owned landfill gas management infrastructure extending into the eastern portion of the site;
- The location of the site within the buffer zone of the Council-managed landfill to the east;
- The landfill gas conditions beneath the site and environmental requirements for development; and
- The ongoing risk to occupants of the proposed development with respect to the adjacent landfill.

(Darebin City Council, Planning Committee Meeting minutes - 10 May 2021). The intention of this DSI was to fill some data gaps with respect to the landfill gas and ground conditions beneath the now-vacated Kmart tenancy.

The objectives of the DSI were to define and assess to what extent the landfill, situated to the east of the site, extends within the proposed development envelope and how this may affect the development, to assess the landfill gas condition within the recently amended development envelope, and finally to assess the suitability, from a contamination perspective, of the site for the proposed development and whether further investigation and/or management is required. It is understood that the report will be used to support a development application for the proposed development. DP understands the eastern boundary of the development envelope has been amended to exclude the portion where Council-owned landfill gas management infrastructure is present, and that there may be further reduction to the overall width of the basement footprint.

This investigation was conducted concurrently with a geotechnical investigation. A separate factual geotechnical report has been prepared, DP report *95409.02.R.003.Rev0*, and should be referred to for geotechnical considerations.

The following key guidelines were consulted in the preparation of this report:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013); and

- NSW EPA. (2020). *Assessment and Management of Hazardous Ground Gases.* NSW Environment Protection Authority.

This report must be read in conjunction with all appendices including the notes provided in Appendix A.

2. Proposed Development

Based on email correspondence, DP understands that part of the existing Northcote Plaza Shopping Centre is proposed to be demolished prior to construction of a multi-tower development with a one to three level basement. The overall footprint of the basement and other aspects of the development are yet to be finalised.

3. Scope of Work

As per discussions with the client, DP undertook the scope of work described below. Note that the initial scope of works was altered on 24 June 2021 during investigation works due to time constraints, changes to the design and conditions encountered during drilling works. The geotechnical scope is discussed in DP report *95409.02.R.003.Rev0*.

- Scanned for the presence of below ground services at the proposed drilling locations using a certified service locator;
- Provided ventilation equipment for drilling indoors;
- Drilled four boreholes to 2 m, four to top of rock and four to approximately 9 m, or 6 m into rock using coring techniques;
- Collected environmental soil samples at regular intervals from each borehole and submitted to a National Association of Testing Authorities (NATA) accredited laboratory for the following testing:
    - One sample for an IWRG 621 Table 2 Screen. This comprises metals (arsenic, cadmium, chromium (VI), copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), total cyanide, total fluoride, speciated phenols (halogenated and non-halogenated), monocyclic aromatic hydrocarbons (including benzene, toluene, ethyl benzene and xylenes known as BTEX), polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCB), chlorinated hydrocarbons (volatile and semi-volatile) and organochlorine pesticides (OCP);
    - Fifteen samples for heavy metals, (arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH) which were identified to be the contaminants of potential concern during the PSI;
    - Five samples for TRH;
    - Three samples for PAH;
    - One sample for leachable metals, two samples for leachable PAHs; and
    - One sample for leachable phenols.
- Installation of a screened standpipe in each bore and monitoring for both water level in three bores and the presence of landfill gas in all bores one week after drilling.

3.1 Analysis and Reporting

Following completion of the fieldwork and laboratory analysis, this report was prepared and includes discussion related to the following aspects:

- Summary of DP's Preliminary Site Investigation (PSI) report;
- Preparation of a conceptual site model (CSM);
- Comparison of soil results to site specific criteria to comment on the significance of any contamination present;
- Calculation of landfill gas screening values; and
- Recommendations for any further investigation, remediation or management with reference to national guidelines and council requirements.

A separate factual geotechnical report was prepared, *95409.02.R.003.Rev0*, in conjunction with this report and should be referred to for geotechnical considerations.

4. Site Information

The site consists of the southern portion of Northcote Plaza. A borehole and site location plan is presented on Drawing 1 in Appendix B, and a copy of the planning property report is provided in Appendix B.

At the time of investigation, the site consisted of Northcote Plaza shopping centre and some surrounding car parks. The area of the site investigated during this stage was limited to the recently-vacated Kmart tenancy and its associated loading dock along the eastern boundary of the building. The remainder of the site was occupied by a Mycar service centre, a Coles Supermarket and part of the shopping mall

A summary of site details is presented in Table 1.

Table 1: Site Identification Summary Details

Identification	Description
Land Title	**100/SP27953**
Local Government Area	Darebin
Current Zoning	Schedule to the Commercial 1 Zone (C1Z)
Overlays	Design and Development Overlay Schedule 14 (DDO14) Development Contributions Plan Overlay Schedule 1 (DCP01)
Priority Sites Register Status	Not listed
Current Land use	Commercial – Northcote Plaza Shopping Centre, vacant retail building
Proposed Land Use	Three-level basement car park Mixed use commercial, retail and residential above ground level.

Note that an Environmental Audit Overlay currently applies to All Nations Park, located immediately to the east of the site, and sections of the park are listed on the EPA Priority Sites Register. Discussion of the landfill is included in the summary of the PSI in Section 6, as well as in subsequent sections below.

5. Geological Setting

5.1 Topography

The site is situated on the lee side of a hill sloping down in a north-east direction, although the site was largely level due to cutting and filling for construction of the current buildings. Two loading docks were present in the north-east corner (Kmart) and adjacent to the south-west corner (Coles) of the site. The Kmart ground floor where most of the drilling took place was level without steps or noticeable changes in elevation throughout.

5.2 Geology

The Geological Survey of Victoria 1:63,360 Series Ringwood map sheet indicates that the site is located on Silurian age sandstone and siltstone known as the Melbourne Formation.

This sedimentary formation forms the regional bedrock and consists of a sequence of folded and fractured siltstones, mudstones and relatively thin sandstone strata that have been variably and occasionally deeply weathered under an oxidising environment. A capping of residual clay typically overlies the rock. The rock quality typically improves with increasing depth. The rock mass can be locally affected by more penetrative weathering in the proximity of structural dislocations or shear zones.

Igneous dykes intruded into the rock mass, commonly found to be wholly decomposed to soil-like material, are not uncommon. The host rock adjacent to these intrusions can be altered to appreciable depths. The strata have been subjected to a process of sub-aerial weathering and chemical oxidisation.

6. Summary of Preliminary Site Investigation for Contamination

A summary of DP's Preliminary Site Investigation for Contamination dated 9 February 2021, reference number *95409.01.R.001.Rev4*, is provided below. The latest revision of the aforementioned report was commissioned in response to receipt of additional information pertaining to landfill gas and leachate management within the adjoining council-owned landfill.

6.1 Historical Aerial Images

DP reviewed a historical Melbourne Metropolitan Board of Works (MMBW) map from 1933, and aerial images from 1945, 1965, 1970, 1979 and 1984 to ascertain the apparent boundaries of historical quarries and the landfill. Boundaries were then laid out over a georeferenced drawing of the site. The site is located inside the boundaries of the former Northcote Brick Works which was comprised of kilns and associated buildings. The clay quarry was seen to encroach on the eastern boundary of the current site over time prior to being backfilled with waste as part of the Northcote Regional Tip. It was during this period that Northcote Plaza was constructed.

The apparent boundaries of the quarries and landfill can be seen on Drawing 1, Appendix B.

6.2 City of Darebin Council Reports

Three reports were reviewed as follows:

- All Nations Park, Aftercare Management Plan (May 2020);
- All Nations Park, Hydrogeological Assessment (May 2020); and
- All Nations Park, Landfill Gas Risk Assessment (June 2020).

All report references, company and individual author details were redacted, and so accurate referencing of those documents cannot be made.

- The former quarry, up to 50 m deep (base RL of 3.9 m AHD), was purchased by Council in 1977 after cessation of brick manufacturing. It was then converted to the Northcote Regional Tip;
- Landfilling operations were in process until 1998, and the total estimated volume of waste placed within the landfill was 3 million m^3;
- Capping and rehabilitation works were undertaken between 1998 and 2002 before All Nations Park was opened;
- Current landfill gas management includes:
  - Maintenance of leachate;
  - Capping inspections;
  - Twice yearly monitoring events of gas monitoring bores;
  - Passive landfill gas vent pipes; and
  - A gas drainage layer under the carpark to the east of the site and extending partially into the site boundary.
- DP understand that the gas drainage layer is constructed of a 1 m thick layer of gravel with an additional 5-6 m deep and 1-2 m wide gas interception trench around the perimeter of the landfill;
- Two passive gas vents are present within the subject site, to the south of the water tank and east of MyCar;
- Two landfill gas monitoring bores (GB6 and GB6A), not a part of Council's twice-yearly monitoring, were present within the subject site;
- The consultants adopted gas trigger values of 1.0 % v/v for methane (CH_4) and 6.6% v/v for carbon dioxide (CO_2) for bores outside of the waste mass, in accordance with EPA guidelines;
- Over 34 monitoring events that were conducted at GB6A in the period 2010 to 2019, the stabilised CH_4 concentration was found to be 0.0% v/v and stabilised CO_2 concentration was found to be 4.2% v/v;
- During indoor air quality monitoring, no elevated concentrations of CH_4 or CO_2 have been identified in service areas and retail spaces of Northcote Plaza; and

- The council's consultant noted that the minimum gas protection score for any new buildings (assuming basements and lower levels are of commercial use) would be 2.5 and requires a combination of the following three types of protection:
  - Structural barriers such as basement walls;
  - Ventilation measures such as vented crushed rock layers; and
  - Membranes incorporated into the structure walls.

Based on the information provided by council, DP noted the following implications for the proposed development:

- Various landfill gas management measures were constructed by council, although exact as-built dimensioned locations of these were not known and more information would be required;
- Council would need to be consulted in the event that installed gas management measures would be disturbed. It is understood that any disturbance would be avoided in the current design;
- In addition to maintaining council-owned gas management infrastructure, the proposed building would need at least a ventilated crushed rock gas drainage layer and gas protection membrane; and
- Based on DP's experience, this level of protection can be routinely incorporated into the development and would be readily achievable.

6.3 Soil Sampling

DP drilled nine boreholes in targeted sections of the site to investigate the extent of surrounding former quarry pits.

Table 2, taken from the PSI report, summarises the purpose, depth and description of fill and any potential contamination observations identified.

Table 2: Summary of Boreholes Drilled during PSI

Borehole	Purpose	Depth of Fill (m bgl)	Fill Description	Contamination Observations
DP01	Identify the extent of the old clay quarry on the western section of the site.	> 9.2	Brown silty sands, orange grey and brown silty clays and brown sandy clays with increased gravels and cobbles with depth.	Brick, concrete and plastic fragments, and slag/ash sands and gravels were identified within fill in this area.
DP02		6.2		
DP02B		12.1		
DP03	Confirm ground conditions in the southern section of the site	0.3	Concrete or asphalt layer overlaying crushed rock	None
DP04		0.5		
DP05		0.3		

Table 2: Summary of Boreholes Drilled during PSI ….*continued*

Borehole	Purpose	Depth of Fill (m bgl)	Fill Description	Contamination Observations
DP06*	Identify the extent of the clay quarry on the eastern section of the site	> 2.9	Brown and orange brown gravelly sands and brown clayey sands.	Brick fragments and slag/ash sands.
DP07		> 6.0		
DP08		6.5		
DP09		0.45	Concrete overlaying crushed rock	None

m bgl = metres below ground level

* White fibres were identified within fill from 1.5 to 2.9 m bgl at DP06 and a fragment of Potential Asbestos Containing Material was identified at surface level within a garden bed adjacent to DP06.

Soil laboratory analysis results were compared against EPA Soil Hazard Categorisation Criteria as at that time, full excavation and off-site of soil was proposed. Category B contaminated soil was found in fill at one location due to elevated concentrations of leachable lead, while Category C contaminated soil was found in fill at four locations due to elevated concentrations of pH, metals, benzo-a-pyrene (BaP) and total PAHs. Natural soil results were all consistent with Fill Material.

Note that since the time of investigation, the EPA waste soil disposal criteria have changed. Both current soil results and those obtained in November 2019 have been compared against current EPA waste soil disposal criteria and can be found in Table D2, Appendix D. Further discussion of soil laboratory results can be found in Section 11 below.

Asbestos Containing Material (ACM) was confirmed to be present on the surface adjacent to DP06. White fibres identified in fill were confirmed not to contain asbestos.

6.4 Conclusions, Recommendations, and Implications for Proposed Development

The following points summarise conclusions, recommendations and implications for the proposed development from the PSI:

- Landfill is likely to exist beneath the western section of the existing building, and beneath the eastern section of the carpark adjacent to All Nations Park;
- Category B and C contaminated fill soils are present on site;
- The fragment of ACM was not likely to represent asbestos in the landfill and was likely ‘fly-tipped’. An ‘unexpected finds’ protocol was recommended for during proposed excavations to account for ACM encountered; and
- The PSI recommended further investigations which were subsequently undertaken and described in later sections of this report.

7. Preliminary Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e.: it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

Potential Sources

Based on the current investigation, the following potential sources of contamination and associated contaminants of potential concern (COPC) have been identified.

- S1: Fill: Associated with landfilling activities in historical clay quarries, and imported fill for levelling activities for construction of current buildings, and fill utilising demolition materials from former buildings on the site and potential burying of waste.
  - COPC include metals, TRH, BTEX, PAH, PCB, phenols and asbestos.
- S2: Landfill: Landfill gases and vapours originating from Northcote Regional Tip and filling of nearby historical clay quarries.
  - COPC include gases and vapours of CH_4 and $CO_{2,}$.
- S3: Industrial activity associated with manufacturing of bricks.
  - COPC metals, TRH, PAH.

Potential Receptors

The following potential human receptors have been identified:

- R1: Current users – [Commercial and retail workers, customers, residents of nearby apartment blocks and houses];
- R2: Construction and maintenance workers;
- R3: End users [Commercial and retail workers, residents]; and
- R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].

The following potential environmental receptors have been identified:

- R5: Surface water [nearby lake in All Nations Park];
- R6: Groundwater; and
- R7: Terrestrial ecology in adjacent All Nations Park.

Potential Pathways

The following potential pathways have been identified:

- P1: Ingestion and dermal contact;
- P2: Inhalation of dust and/or vapours;

- P3: Lateral migration of surface water run-off providing overland flow into stormwater and nearby water body;
- P4: Leaching of contaminants and vertical migration into groundwater;
- P5: Lateral migration of groundwater providing base flow to water bodies; and
- P6: Contact with terrestrial ecology.

Summary of Potentially Complete Exposure Pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above sources (S1 to S3) and receptors (R1 to R7) are provided in Table 3.

Table 3: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: General Imported Fill: Metals, TRH, BTEX, PAH, PCB, phenols and asbestos	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies P6: Contact with terrestrial ecology	R1: Current users [Commercial and retail workers, customers, residents of nearby apartment blocks and houses] R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	A Detailed Site Investigation for contamination is recommended to assess possible contamination including testing of the soils and groundwater.

Table 3: Summary of Potentially Complete Exposure Pathways …..*continued*

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S2: Landfill: Gases and vapours of CH_4 and CO_2,	P2: Inhalation of vapours	R1: Current users [Commercial and retail workers, customers, residents of nearby apartment blocks and houses] R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	A Detailed Site Investigation for contamination is recommended to assess possible contamination including installation of landfill gas monitoring wells.
S3: Historical brick manufacturing: metals, TRH, PAH.	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies P6: Contact with terrestrial ecology	R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	A Detailed Site Investigation for contamination is recommended to assess possible contamination including installation of landfill gas monitoring wells.

8. Sampling and Analysis Quality Plan

8.1 Soil Sampling Rationale

Based on the CSM and DQO the following sampling rationale was adopted.

A combined systematic and judgemental sampling strategy to determine borehole locations was adopted. Locations were based on site history information, the findings of the PSI and the preliminary CSM with the rationale provided below. Borehole locations are shown on Drawing 1, Appendix B. Locations were placed in an approximate grid across the site with consideration of internal access inside the former Kmart. Boreholes were also laid out along the eastern boundary of the former Kmart building to investigate the extent of the edge of quarry pits / landfill, and for landfill gas sampling purposes.

Soil samples were collected from each borehole at depths of approximately 0.15 m, 0.5 m, 1.0 m every 1.0 m thereafter, and at changes in lithology or signs of contamination.

The general sampling methods are described in the field work methodology in Section 9.

8.2 Landfill Gas

In order to assess the effectiveness of council owned landfill gas infrastructure in capturing and venting landfill gas flow, and to provide a risk rating based on a site-representative gas screening value (GSV), landfill gas monitoring wells were installed in every borehole drilled as part of the DSI. Wells were screened across both filling and natural soil strata, depending on the conditions encountered.

The general sampling methods are described in the field work methodology in Section 9.

8.3 Groundwater

To gain an understanding of depth to groundwater, groundwater bores were installed where deeper boreholes were drilled for geotechnical investigation purposes, i.e. when coring 6 m into underlying rock.

9. Field Work

The following sections should be read with reference to Drawing 1 and photographs presented in Appendix B, as well as borehole logs presented in Appendix C. The locations of the boreholes are shown on Drawing 1 in Appendix B and are designated as DP10 to DP21. Note that boreholes from earlier works in 2019 are also shown on this plan.

9.1 Field Work Methodologies

Drilling works were undertaken between 21 and 25 June 2021. Prior to initiation of any intrusive drilling, service location was undertaken by a certified service locator across all test locations. 12 boreholes were drilled in an approximate grid across the site using a Comacchio 105 compact tracked drilling rig. Four were advanced to a maximum depth of 9 m, or 6 m into rock. Four shallow bores were drilled to 2 m, and the remaining four bores were drilled to top of rock. Ten boreholes were concrete cored prior to drilling. A solid flight auger (SFA) was used to drill through fill and residual soil, before swapping to continuous rotary diamond coring (NMLC) in weathered rock in the relevant boreholes.

9.1.1 Soil Sampling

Soil sampling procedures adopted for this investigation were conducted by an environmental scientist following DP's Field Procedures Manual and were as follows:

- Collection of soil samples directly from the SFA flights using disposable nitrile gloves (a new pair of gloves were used for the collection of each sample) at each location;
- Labelling laboratory-prepared glass sample containers with individual and unique identification details including project number, sampling date, borehole number and sample number;
- Placing samples into the jars and storing in a cooled, insulated and sealed container; and
- Transportation of samples to a National Association of Testing Authorities (NATA) accredited testing laboratory under chain-of-custody documentation.

9.1.2 Landfill Gas Wells

Landfill gas monitoring wells were installed in all boreholes and screened across a range of fill and natural soil formations. All wells were capped and sealed with a special valved cap for monitoring purposes. Construction layouts of the wells are shown in the borehole logs found in Appendix D. It is noted that, based on the approximate layout of landfill gas infrastructure shown on the client supplied diagram (shown in orange on the attached diagram, in Appendix B) and conditions encountered during drilling works, that all wells are located outside of the council owned landfill gas collection area. Wells were installed near to where the trench is expected to lie and throughout the building.

One round of landfill gas monitoring was completed one week after completion of the drilling works. Monitoring was undertaken using a Geotech GA5000 Portable Landfill Gas Analyser (GA5000) which measures methane (CH_4), Carbon Monoxide (CO), Carbon Dioxide (CO_2), Hydrogen Sulphide (H_2S) and Oxygen (O_2). To monitor, the GA5000 was connected to the valved cap on top of the well and measurements were taken once stable. Flow rates and barometric pressure were also taken from each well.

To screen for volatile organic compounds (VOC), a MiniRAE Photoionisation Detector (PID) was connected to the 'exhaust' of the GA5000 and readings were taken of VOC from within the monitoring wells.

9.1.3 Groundwater Monitoring wells

Three groundwater monitoring wells were installed by Urban Drilling at DP12, DP13 and DP16. Construction layout of the wells including the intervals of sand and bentonite backfill are shown in the borehole logs found in Appendix D. Each well was installed with a 6 m slotted PVC screen from the base of the borehole. The wells were installed under the works license ID WLE081215, a copy of which can be found in Appendix F.

All monitoring wells were purged of drilling water the day after installation to promote hydraulic conductivity with the water table if present. All wells were installed and developed with reference to DP's Field Procedures Manual.

9.2 Field Work Results

9.2.1 Subsurface Conditions

In boreholes DP10 to DP19, concrete was encountered at thicknesses of between 100 mm to 250 mm. A crushed rock layer was encountered in thicknesses of between 20 mm and 150 mm beneath concrete.

Fill typically extended to depths of 0.5 m below ground level (bgl), although at DP11, DP19 and DP21 fill was encountered at 1 m bgl or greater. Fill was typically comprised of gravelly clays and reworked natural clayey silt with inclusions of brick and basalt gravels. A hydrocarbon odour was noted in boreholes DP14 and DP15.

Natural soil comprised of pale brown and pale grey silts and clays derived from the residual weathering of the underlying siltstone rock, inferred to be of the Melbourne Formation geological unit.

9.2.2 Groundwater

One week after installation of the monitoring wells, a return visit was made to sample the wells, however, it was noted that between 0.91 m and 2.2 m of silt was built up in the base of the wells. Groundwater sampling could not be undertaken due to the silt.

A nearby well, measured to be 7.55 m bgl deep and installed by Council's consultant, contained a small amount of water with a standing water level (SWL) of 7.2 m bgl. Based on information in the council supplied document *All Nations Park, Hydrogeological Assessment*, the well accessed by DP was likely to be GB6A which was installed to a depth of 9.6 m below top of casing. An SWL of 7.34 m bgl was recorded in June 2011, three weeks after installation. The disparity between depths may be due to a blockage, potentially from built up silt in the base of the well. This does not appear to be unlikely given a separate monitoring well was recorded to be blocked in past in the hydrogeological assessment. Groundwater monitoring was undertaken from this well among others on three occasions in 2020, though SWLs were not available for these events.

9.2.3 Landfill Gas

Field observations and Bureau of Meteorology (BOM) data indicate that the atmospheric pressure was falling during the monitoring event. Atmospheric data recorded at Olympic Park by BOM showed that the mean sea level pressure dropped from 1032.5 mb to 1029.4 mb over the course of the day. This is considered to represent favourable conditions for accurate measurement of landfill gas. A table of weather observations can be found in Appendix C.

Background, peak and stabilised CH_4 flows from the landfill gas wells varied from 0.0% v/v, 0.0 – 0.8% v/v and 0.0-0.2% v/v, respectively.

Background, peak and stabilised CO_2 flows from the landfill gas wells varied from 0.1% v/v, 0.0 – 4.8% v/v and 0.1 – 4.8% v/v, respectively. A summary table of field results is shown below in Table 4.

Table 4: Summary of Field Observations Taken during Landfill Gas Monitoring

Borehole ID	Peak Static Flow (l/hr)	Background (% v/v)			Peak (% v/v)		Min O_2 (%v/v)	Stabilised (% v/v)		
		CH_4	CO_2	O_2	CH_4	CO_2		CH_4	CO_2	O_2
DP10	0.0	0.0	0.1	21.5	0.0	0.1	21.1	0.0	0.1	21.2
DP11	1.0	0.0	0.1	21.2	0.0	0.3	20.2	0.0	0.1	21.3
DP12	0.0	0.0	0.1	19.4	0.0	0.2	19.7	0.0	0.1	20.2
DP13	1.0	0.0	0.1	21.7	0.0	0.5	20.3	0.0	0.2	20.4
DP14	18.3	0.0	0.1	21.4	0.0	4.8	6.4	0.2	4.8	6.4
DP15	0.0	0.0	0.1	21.3	0.8	0.0	20.3	0.0	0.0	21.1
DP16	0.0	0.0	0.1	21.1	0.0	0.4	20.4	0.0	0.4	20.4
DP17	0.0	0.0	0.1	20.0	0.0	0.2	20.5	0.0	0.1	20.5
DP18	1.0	0.0	0.1	20.7	0.1	0.3	20.0	0.0	0.3	20.3
DP19	0.0	0.0	0.1	19.7	0.0	0.2	19.7	0.0	0.1	19.8
DP20	2.0	0.0	0.1	20.7	0.0	2.1	18.5	0.0	0.3	21.2
DP21	0.0	0.0	0.1	21.6	0.0	1.0	20.1	0.0	1.0	20.1

PID readings were taken from each well. DP14 and DP15 presented elevated readings relative to other boreholes, and this corresponds to odours noted during drilling works. A summary of results is shown below in Table 5.

Table 5: Summary of PID results

Borehole ID	PID Reading (ppm)
DP10	8.7
DP11	18
DP12	<1
DP13	<1
DP14	42
DP15	48.4
DP16	3.3
DP17	<1
DP18	<1
DP19	<1
DP20	<1
DP21	12.8

10. Site Assessment Criteria

10.1 Soil

To provide an assessment of the current contamination status of site soils, DP compared soil laboratory results to published ecological, human health, vapour intrusion assessment criteria, and management limits presented in the National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013), referred to as "*the NEPM*" (NEPC, 2013). It should be noted that the assessment criteria are not 'clean-up' criteria, are used as a 'first-pass' assessment of risk, and as such are conservative values.

To determine which land use setting was most appropriate for adopting criteria, Section 3.2 of Schedule B7 of the NEPM was referred to in line with known information of the proposed development:

"The land use scenario considered for the HIL D values is commercial/industrial, which assumes typical commercial or light industrial properties, consisting of single or multistorey buildings where work areas are on the ground floor (constructed on a ground level slab) or above subsurface structures (such as basement car parks or storage areas)."

And regarding HIL-C: "*This land use scenario assumes that the open space areas are in areas where young children may have supervised access and use the area outside of the home environment for frequent short periods of time (up to 2 hours a day, 7 days a week). Other users may include older children and adults who may visit the area frequently for a range of recreational purposes. These open space areas may contain lawns, gardens, vegetated areas and walkways, with some limited areas of hardstand and some areas of exposed soil.*"

Based on current information including that provided for a Darebin City Council planning committee meeting on 10 May 2021, DP understands that the development will include basement level carparks and ground level retail and commercial space, as well as communal and public open space areas on the upper ground floor level. As such, the proposed development fits the descriptions for the above listed land use settings described in Schedule B7 of the NEPM.

DP adopted ecological and health assessment criteria specific to soil conditions, depth and the proposed development.

Details of the adopted assessment criteria are presented below. Tabulated results including adopted criteria are shown in Appendix D.

10.2 Ecological Assessment Criteria

Site specific Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for a commercial and industrial land use setting were used to evaluate potential risks to ecosystems, as this was considered the most applicable to the proposed land use. EILs and ESLs apply to the top 2 m of the soil profile, which essentially corresponds to the root zone and habitation zone of many species, and generic EILs and ESLs for different land use settings are available in the NEPM ((NEPC, 2013). They were calculated as follows:

- EILs for arsenic, DDT, naphthalene, lead, copper, nickel, chromium (III), and zinc were calculated using the NEPM toolbox (http://www.nepc.gov.au/nepms/assessment-site-contamination/toolbox). The state of Victoria and a high traffic volume were adopted, as well as a clay content of 10% (based on the samples, which provided a more conservative value than using higher clay content percentages). The mean average of three pH results (8.80 pH units) obtained in fill, and the mean Cation Exchange Capacity (CEC) value for the localised region taken from Soil Explorer (RMIT, 2018) (7 cmolc/kg dwt) were also applied to the toolbox to generate the EILs due to filling extending past 2 m, which is the maximum depth that EILs are principally applied (NEPC, 2013). The criteria for aged contamination was adopted due to the historical land filling across the site;
- EILs for cadmium, manganese and mercury were sourced from Olszowy et al. (1995), referenced in section 2.5.7 of Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, of the National Environmental Protection Measure (NEPM) for Assessment of Site Contamination, December 1999 (amendment 2013); and
- ESLs for selected hydrocarbons were taken directly from Table 1B(6) of the NEPM.

10.3 Human Health Assessment Criteria

To assess the risk to Human Health, DP adopted generic Health Investigation Levels (HILs) for a public open space (HIL-C), and commercial and industrial (HIL-D) land use settings from Table 1A(1) of Schedule B1 of the NEPM, and Health Screening Levels (HSLs) for direct contact were adopted from Table A4 of CRC CARE's Technical Report No.10 (CRC CARE, 2011).

To assess the risk of vapour intrusion, DP adopted HSLs from Table 1A(3) of Schedule B1 of the NEPM.

Management limits were used to evaluate the likelihood of formation of observable light non-aqueous phase liquids (LNAPL), fire and explosive hazards, and effects on buried infrastructure and were adopted from Table 1B(7) of Schedule B1 of the NEPM.

10.4 EPA Waste Soil Hazard Categorisation Criteria

If soil is to be removed from a site, it is classified as a waste material in accordance with Table 2 of EPA Publication 1828.2, *Waste Disposal Categories – Characteristics and Thresholds* (EPA Victoria (a), 2021) which is the current guideline used to assess soil prior to off-site disposal. With reference to EPA Publication 1828.2, soil can be classified into one of five categories based upon its relative hazard. From least to most contaminated, the categories are:

- Clean Fill Material;
- Category D contaminated soil;
- Category C contaminated soil;
- Category B contaminated soil; and
- Category A contaminated soil.

Further information on each category can be found in the 1828.2 guideline. Adopted assessment criteria for EPA soil hazard categorisation are presented in Table D2, Appendix D.

10.5 Landfill Gas

Landfill gas results were compared against Table 7 criteria in *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases* (NSW EPA, 2020) which have been endorsed by EPA Victoria to provide a risk classification of the overall site. These guidelines state 'the product of borehole flow and gas concentration measured in an individual borehole is defined as Q_{hg}', adopted from BS 8485:2015+A1:2019. A site representative GSV is then selected based on a review, carried out in the context of the CSM, of all the Q_{hg} measured across all boreholes during all monitoring events.

11. Laboratory Results

The results of laboratory analysis are summarised in the following tables in Appendix D:

- Table D1: Comparison of soil laboratory results to NEPM ecological and human health criteria;
- Table D2: Comparison of soil laboratory results to EPA Publication 1828.2 criteria; and
- Table D3: PAH fingerprint calculator results.

Results displayed include those tested in prior investigations as summarised in Section 6.

The laboratory certificate(s) of analysis together with the chain of custody and sample receipt information are provided in Appendix E.

11.1 NEPM Ecological Assessment Criteria

Laboratory results reported Ecological Investigation Limit (EIL) exceedances of TRH F2 (C_{10}-C_{16} minus naphthalene), C_{16}-C_{34}, naphthalene, and BaP. A summary of exceedances is presented below in Table 6.

11.2 NEPM Human Health and Management Limit Assessment Criteria

Laboratory results reported human Health Investigation Level (HIL) exceedances for carcinogenic PAHs (BaP TEQ) and total PAHs. Laboratory results reported management limit exceedances for TRH C_{10}-C_{16}, and C_{16}-C_{34}. A summary of exceedances is presented below in Table 6.

Table 6: Summary of Samples Exceeding Site Specific EIL and HIL Criteria

Contaminant	Concentrations (mg/kg)					Samples Exceeding
	Range of Results	EIL	HIL-C	HIL-D	Management Limits Commercial Land Use	
TRH C_{10}-C_{16}	<50 – 4,000	-	-	-	1,000	DP14-0.4 DP14-0.9 DP14-1.4 DP15-0.18 DP15-0.4 DP15-1.4
F2 (TRH C_{10}-C_{16})	<50 – 3,700	170*^	-	-	-	DP14-0.11 DP14-0.4 DP14-0.9 DP14-1.4 DP14-1.9 DP15-0.18 DP15-0.4 DP15-1.4

Table 6: Summary of Samples Exceeding Site Specific EIL and HIL Criteria …. *continued*

Contaminant	Concentrations (mg/kg)					Samples Exceeding
	Range of Results	EIL	HIL-C	HIL-D	Management Limits Commercial Land Use	
TRH C_{16}-C_{34}	<100 – 9,100	300* (coarse soil) 1,700^ (Coarse soil)	-	-	3500 (Coarse soil)	DP14-0.11 DP14-0.4 DP14-0.9 DP14-1.4 DP15-0.18 DP15-0.4
		1,300* (fine soil) 2,500^ (Fine soil)	-		5000 (Fine soil)	
Naphthalene	<0.1 – 660	170* 370^	-	-	-	DP14-0.9 DP14-1.4
B(a)P	<0.05 – 6.3	0.7* 1.4^	-	-	-	DP02-0.2 DP02-0.5 DP03-0.9 DP04-0.5 DP05-0.9 DP07-1.9 DP21-0.8 DP21-1.2
BaP TEQ	<0.5 – 9.5	-	3	40	-	DP02-0.2 DP07-4.9
Total PAH	<0.1 – 913	-	300	4,000	-	DP14-0.9 DP14-1.4

* Residential and public open space ^ Commercial and Industrial Underlined sample ID indicates hotspot as per NEPM statistical analysis tests.

11.3 EPA Waste Soil Hazard Categorisation Criteria

In summary soil laboratory results reported:

- Two fill samples (DP02-0.5 and DP14-0.4) with concentrations of leachable lead, TPH C_{10}-C_{36} and Total PAH consistent with Category B contaminated soil;
- Seven fill samples (DP02-0.2, DP02-0.5, DP02-3.9, DP07-1.9, DP07-4.9, DP14-0.11, DP14-0.4 and DP21-0.8) with concentrations of copper, lead, nickel, tin, zinc, TPH C_{10}-C_{36}, BaP and total PAHs consistent with Category C contaminated soil;

- Three fill samples (DP02-3.9, DP07-4.9 and DP14-0.11) with concentrations of cadmium, TPH C_{10}-C_{36} and total PAHs consistent with Category D contaminated soil;
- Two natural soil samples (DP14-0.9 and DP14-1.4) with concentrations of total PAH consistent with Category A contaminated soil;
- Two natural soil samples (DP15-0.4 and DP15-1.4) with concentrations of TPH C_{10}-C_{36} consistent with Category C contaminated soil; and
- Two natural soil samples (DP14-0.9 and DP14-1.4) with concentrations of TPH C_{10}-C_{36} consistent with Category D contaminated soil.

95% Upper Confidence limits (95% UCL) of the mean values were calculated on all fill samples for analytes in exceedance of EPA Clean Fill criteria. Results were found to be within Category C contaminated soil criteria. This, however, is not enough to reclassify fill soil for disposal due to the individual elevated leachable lead result.

95% UCL of the mean values were calculated on all natural samples for analytes in exceedance of EPA Clean Fill Criteria. TPH C_{10}-C_{36} were within Category C criteria. Due to the small sample size causing skewed results, the value for Total PAH 95% UCL was higher than any reported by the laboratory.

As such, fill soil would be provisionally categorised as Category B contaminated soil and natural soil would be provisionally categorised as Category A contaminated soil due to the localised contamination at DP14.

11.4 Polycyclic Aromatic Hydrocarbon Source Characterisation Results

Soil laboratory results for analysed forms of PAHs were used to characterise the potential source of PAH contamination based on known ‘fingerprints’ of PAH source waste. A research paper conducted by Mulvey and McKay (2006) formulated a statistical method for calculation of PAH sources based on reviewing existing fingerprinting techniques. DP utilised these methods in developing a table where detectable concentrations of PAHs were used to generate a best fit of the PAH ‘fingerprint’. The final table of results can be found in Appendix D. Black coal tar, brown coal tar, ash from black and brown coal, bitumen and coke were the dominant best fits for the samples.

12. Discussion of Results

12.1 Soil

12.1.1 NEPM Ecological Assessment Criteria

The NEPM classifies a hotspot as a result which exceeds 2.5 times the relevant investigation and screening levels (NEPC, 2013). Hotspots were identified for copper, zinc, TRH C_{10}-C_{16}, TRH C_{16}-C_{34}, naphthalene and BaP.

ASLP testing was undertaken on sample DP02-0.5 and DP14-0.11 and it was found that leachable concentrations for analytes initially in exceedance of the relevant EIL were all low and considered to represent low contaminant leachability.

Elevated concentrations of TRH C_{10}-C_{16} and C_{16}-C_{34} fractions in DP14 and DP15 are likely isolated and not near to any exposed soil surfaces and hence do not form a risk to ecological receptors in the site's present state.

DP considers that the results found, while elevated in some areas, would present negligible risk to ecological receptors during and after the proposed development as much of the soil is understood to be excavated and disposed of, and a sealed cap minimising preferential exposure pathways will be placed over the majority of the site. Soil used in open space landscaping should not contain elevated concentrations of contaminants above EPA Publication 1828.2 Clean Fill criteria.

12.1.2 NEPM Human Health and Management Limit Assessment Criteria

Two samples (DP02-0.2 and DP07-4.9) reported contaminants in exceedance of HIL-C criteria for carcinogenic PAHs (BaP TEQ) and were sampled from outside of the proposed excavation area at 0.2 m bgl and 4.9 m bgl, respectively. The former may pose a potential preferential pathway to site users, although this would be dependent on the final design and if it is in a highly trafficable location by pedestrians. The latter result considered to be too deep to represent a preferential pathway to human receptors.

Two samples (DP14-0.9 and DP14-1.4) reported an exceedance of HIL-C criteria for Total PAHs. Naphthalene is a PAH which is included in the sum value for 'total PAHs'. The elevated total PAH concentrations are largely represented by naphthalene concentrations. DP considers that the PAHs are likely associated with the TRH fractions found in these locations. As this location is distant from the known contaminant source, ie. backfill associated with the landfill, the source and extent of this contamination cannot be determined at this point. Construction workers may be exposed to this soil, as such, the soil should be managed appropriately during proposed works. At this stage, soil in this area may or may not be excavated for basement construction. Based on the plans supplied to DP, attached in Appendix B, a potential reduction in basement size has been proposed and removes this area from the basement footprint.

Exceedances of management limit criteria for TRH C_{10}-C_{16} and C_{16}-C_{34} were identified in boreholes DP14 and DP15 from depths of 0.4 m to 1.4 m bgl in DP14, and 0.18 m to 1.4 m bgl in DP15. Further investigation would be required to define the extent of this contamination and whether it is isolated to the localised area surrounding these two boreholes, or a part of a larger plume.

12.1.3 EPA Waste Soil Hazard Categorisation Criteria

Comparison of soil laboratory results to EPA Publication 1828.2 Criteria provisionally categorises fill soil over the site as Category B contaminated soil due to leachable lead, TPH C_{10}-C_{36} and Total PAH concentration. Natural soil is provisionally categorised as Category A contaminated soil due to elevated concentrations of Total PAH in an isolated area. The remainder of the natural soil away from the identified contamination at DP14 and DP15 was categorised as clean Fill Material.

To provide a higher resolution on waste soil categories, and to potentially reduce the cost for off-site disposal of soil, delineation sampling could be undertaken around the locations of Category B and A contaminated soil.

12.2 Landfill Gas Results

The highest individual Q_{hg} calculated for the site was 0.878 L/hr in DP14. This value was calculated from the CO_2 reading in the well, and coincided with a depleted stabilised oxygen reading. The presence of hydrocarbon contamination throughout the soil profile at this location, combined with the above factors, are indicative of the respiration products from natural degradation of hydrocarbons by bacteria in soil. As such, DP considers this value not to be representative of landfill gas nor characteristic of the overall site.

The remaining Q_{hg} values ranged from 0 – 0.042 L/hr.

Based on a review of all Q_{hg} values, and in line with *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases* and BS 8485:2015+A1:2019 (NSW EPA, 2020), 0.042 L/hr was selected to be the GSV and thus classifies the site as very low risk. DP notes that results for CH_4 and CO_2 % v/v did not exceed the gas trigger values adopted by Council's consultants of 1.0% v/v for CH_4 and 6.6% v/v for CO_2.

12.3 Groundwater

The SWL measured in the monitoring bore near to DP12 corresponds with SWL's measured in the Council provided *All Nations Park Hydrogeological Assessment Report.* However, given there is still uncertainty in information on groundwater level and contamination status around the site that and that groundwater data was unobtainable during the site investigation, DP recommends that additional groundwater monitoring bores be drilled for long term monitoring across the site.

13. Revised Conceptual Site Model

The data collected for this DSI has generally confirmed that certain potential contaminant sources outlined in the CSM outlined in Section 7 pose a potentially complete pathway to the identified receptor(s) whilst others do not. One other potential source of contamination (S4) was identified as a result of the testing. This is summarised in Table 7.

Table 7: Updated Summary of Potentially Complete Exposure Pathways (Proposed Land Use)

Source	Transport Pathway	Receptor	Remediation Action Required
S1: Fill: Metals, TRH, PAH, asbestos	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies P6: Contact with terrestrial ecology	R1: Current users [Commercial and retail workers, customers, residents of nearby apartment blocks and houses] R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	Further intrusive investigation to investigate extent of lead and PAH contamination where above Category C criteria. Implementation of an unexpected finds protocol for asbestos during development works.
S2: Landfill: Gases and vapours of CH_4 and CO_2	P2: Inhalation of vapours P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies	R1: Current users [Commercial and retail workers, customers, residents of nearby apartment blocks and houses] R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	Installation of passive landfill gas protection measures such as: structural barriers (i.e. basement walls), ventilation measures (e.g. vented crushed rock layers), and membranes incorporated into the structure walls as per recommendations of the Council's consultants.

Table 7: Updated Summary of Potentially Complete Exposure Pathways (Proposed Land Use)

Source	Transport Pathway	Receptor	Remediation Action Required
S4: Unknown source: TRH fractions C10-C36, Naphthalene	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies	R1: Current users [Commercial and retail workers, customers, residents of nearby apartment blocks and houses] R2: Construction and maintenance workers R3: End users [Commercial and retail workers, residents] R4: Adjacent site users [recreational users of All Nations Park, customers at Northcote Plaza and proposed new commercial outlets].	Further intrusive investigation to delineate extent of TRH and naphthalene contamination, and installation of groundwater monitoring bores to assess if the contamination has migrated into the groundwater table.

14. Conclusions and Recommendations

The aims of this Limited DSI were to assess the extent of landfill in the eastern portion of the site and its potential effects on the development, to assess the landfill gas condition, and to assess the suitability of the site for the proposed development, from a contamination perspective.

Deep fill was encountered at DP21 in the south-east corner of the site. Natural soil was encountered at relatively shallow depths in the majority of the bores drilled along the eastern boundary of the site. Shallow imported fill was encountered elsewhere around the site, likely to have originated from construction of the current buildings. Fill soil was categorised as Category B contaminated soil due to elevated leachable lead (identified during PSI), TPH C_{10}-C_{36} and Total PAH concentrations. Natural soil was categorised as Category A due to elevated Total PAH concentration in an isolated area around DP14 and DP15. Furthermore, DP14 and DP15 soil results reported exceedances of HIL-C and EIL criteria for Total PAH, and TRH C_{10}-C_{34} and naphthalene, respectively. Management Limits were exceeded for TRH C_{10}-C_{34}. The source of contamination in DP14 and DP15 has been denoted as source number four (S4) in the revised CSM. DP recommends that, to potentially reduce the categorisation of soil, reduce cost of disposal and investigate the horizontal and vertical extent of this contamination, further delineation sampling be undertaken around these localised areas. Furthermore, during delineation works, groundwater monitoring bores should be installed to assess if contamination found in DP14 and DP15 has migrated into the groundwater table.

A GSV of 0.042 L/hr was selected for the site, thus a 'very low risk' rating can be applied based on Table 7 of *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases* (NSW EPA, 2020). The guideline states that a site with a 'very low risk' rating does not require landfill gas protection measures. However, due to the proximity to known landfills with a previously classified 'low risk' rating, DP recommends the installation of passive landfill gas protection measures to meet a 'low risk' rating such as: structural barriers (i.e. basement walls), ventilation measures (e.g. vented crushed rock layers), and membranes incorporated into the structure walls should be included in the development scope. This is considered a reasonable and conservative approach to mitigate risk of damage to, or leaks from landfill gas management infrastructure in future. Based on DP's experience, these measures are readily available and achievable in their application to the proposed development.

With reference to EPA Publication 1915 (EPA Victoria , 2021) Northcote Devco Pty Ltd are required to notify the EPA due to:

- Single sample contaminant concentrations equal to or greater than 250% of NEPM Health and Management Limit Criteria.

This forms a part of recently initiated EPA framework for a general environmental duty (GED) to notify for contamination, a part of updates to the Environmental Protection Regulations. The management measures to be implemented to minimise the potential for causing unacceptable risks to human health and the environment should also be reported. DP could provide advice and assistance for the notification process.

The site is presently capped with a concrete slab approximately 0.15 m thick in most places and in good condition. This slab provides a sufficient barrier to current site users thus minimising preferential exposure pathways to site users, and is considered acceptable for any ongoing usage of the site prior to the development phase.

The amendment of the development plan to avoid disturbance to the Council-owned landfill gas infrastructure is considered to address Council issue 1 (a), 2 (a), 2 (b), 3, 4 (a), 4 (c), 4 (a), 4 (c), 4 (d), 4 (e) from the 10 May 2021 Planning Committee Meeting minutes, The findings of this Limited DSI indicate that, from a contamination perspective, overall the site can be made suitable for the proposed development as long as appropriate landfill gas management measures be implemented as described above, and that hydrocarbon and PAH contamination be delineated and managed appropriately [Council issue 1 (b), 2 (b), 2 (c), 2(d), 4 (b)].

15. References

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16. Limitations

Douglas Partners (DP) has prepared this report for the proposed mixed use development project at 25 Separation Street, Northcote in accordance with DP's proposal dated 16 June 2021 and acceptance received from Ryan O'Sullivan dated 16 June 2021. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Northcote Devco Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

Appendix A

Notes About this Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

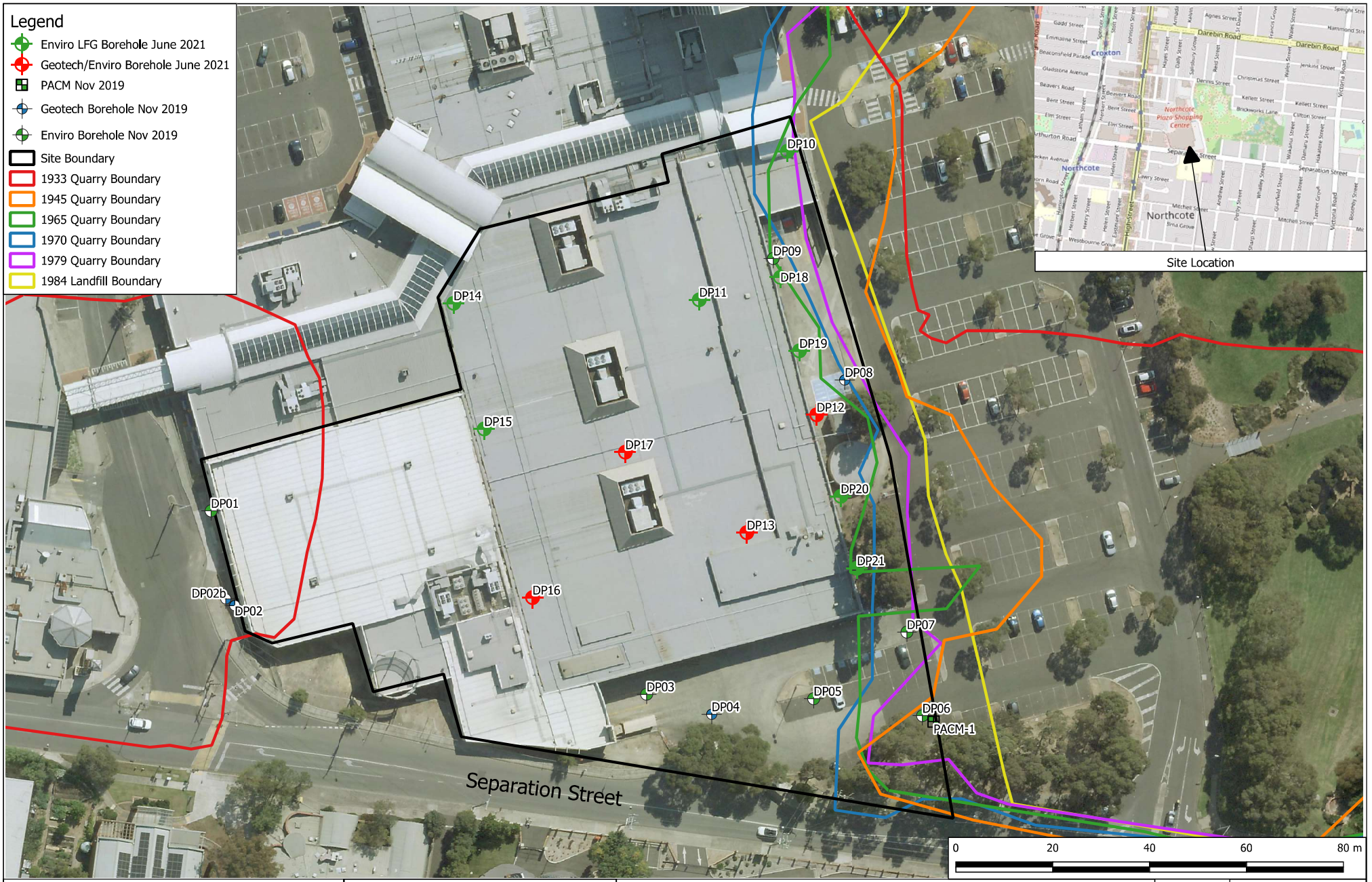
Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Appendix B

Borehole Location Plan
Client Supplied Survey Plan
Site Photographs
Planning Property Reports



Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: Time and Place Developments Pty Ltd		
OFFICE: Melbourne	DRAWN BY: FS	
SCALE: As shown	DATE: July 2021	

TITLE: Borehole Location Plan
Northcote Plaza Mixed Use Development
25 Separation Street, Northcote

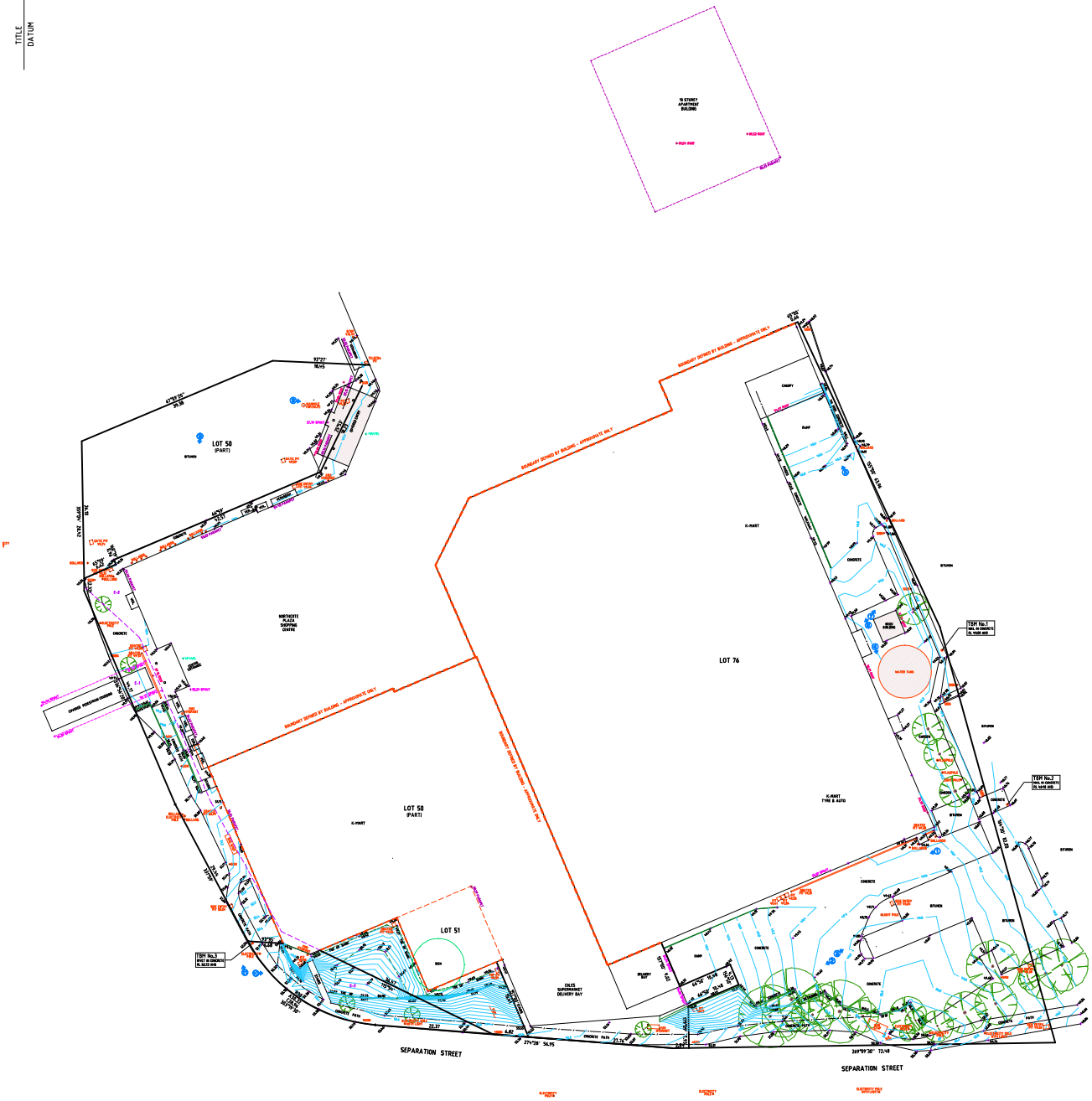
Note: Site location map sourced from OSM maps, and satellite image sourced from MetroMap April 2021

MGA

PROJ. #:	95409.02
DRAWING No:	1
REVISION:	Rev0



TITLE DATUM



NOTE:

This survey has been carried out for the exclusive use of LES SMITH for the purpose of DESIGN & DEVELOPMENT on the site and should not be used for any other purpose or by any other person or corporation.

Structures below the surface level (if any) including footings projecting into the site from adjoining properties have not been located by this survey. We have not excavated the site to determine their existence.

The levels and features shown on this plan have been located by this survey. Any other services and features which may be in the area have not been shown and no attempt to ascertain their existence has been made.

AHD Level Datum derived from JKA JKA PM 322 (RL 48.275) located at the corner of HIGH STREET & BEACONSFIELD PARADE.

The AHD datum has been established from one bench mark only. If a precise connection to AHD is critical an additional bench mark should be connected to for verification, if this is required please contact the office of CRA Survey.

Prior to any demolition, excavation or construction on the site the relevant authority should be contacted to ascertain the possible locations of further services and detailed locations of all services.

Unless shown otherwise the position of buildings is to plotting accuracy and the dimensions of buildings should NOT be determined from computer data for any final design plans or worksheet details.

This plan has been provided as a hard-copy plan and also in digital format. The hard-copy takes precedence over the digital data as no guarantee can be given to transfer of data to another system.

CRA Survey accepts no responsibility for any loss or damage howsoever suffered to any person or corporation that might use or rely on this plan in contravention of this disclaimer.

HEIGHT & DEPTH LIMITATIONS APPLY TO THIS PROPERTY AND SPECIFICALLY TO LOT 76. SEE CERTIFICATE OF TITLE FOR DETAILS.

CRA SURVEY PTY LTD
LAND SURVEYORS TOWN PLANNERS
DEVELOPMENT CONSULTANTS

7A/346 Belmore Road
Balwyn Vic 3103

office@crasurvey.com.au
Tel: 03 9890 0933

REF: 6561FL2

ORIGINAL SHEET SIZE : A1

LEVEL DATUM: AHD
CONTOUR INTERVAL: 0.2
LENGTHS ARE IN METRES

SURVEYOR: JD

DRAWN BY: BW
DATE OF SURVEY: 24/6/19
VERSION: 1 (22.07.2019)

UNIT 33, 25 SEPARATION STREET
NORTHCOTE, 3070

LOT 50, 51 & 76 ON SP 27953
V.10490 F.290, V.10492 F. 684 & V.10490 F.315

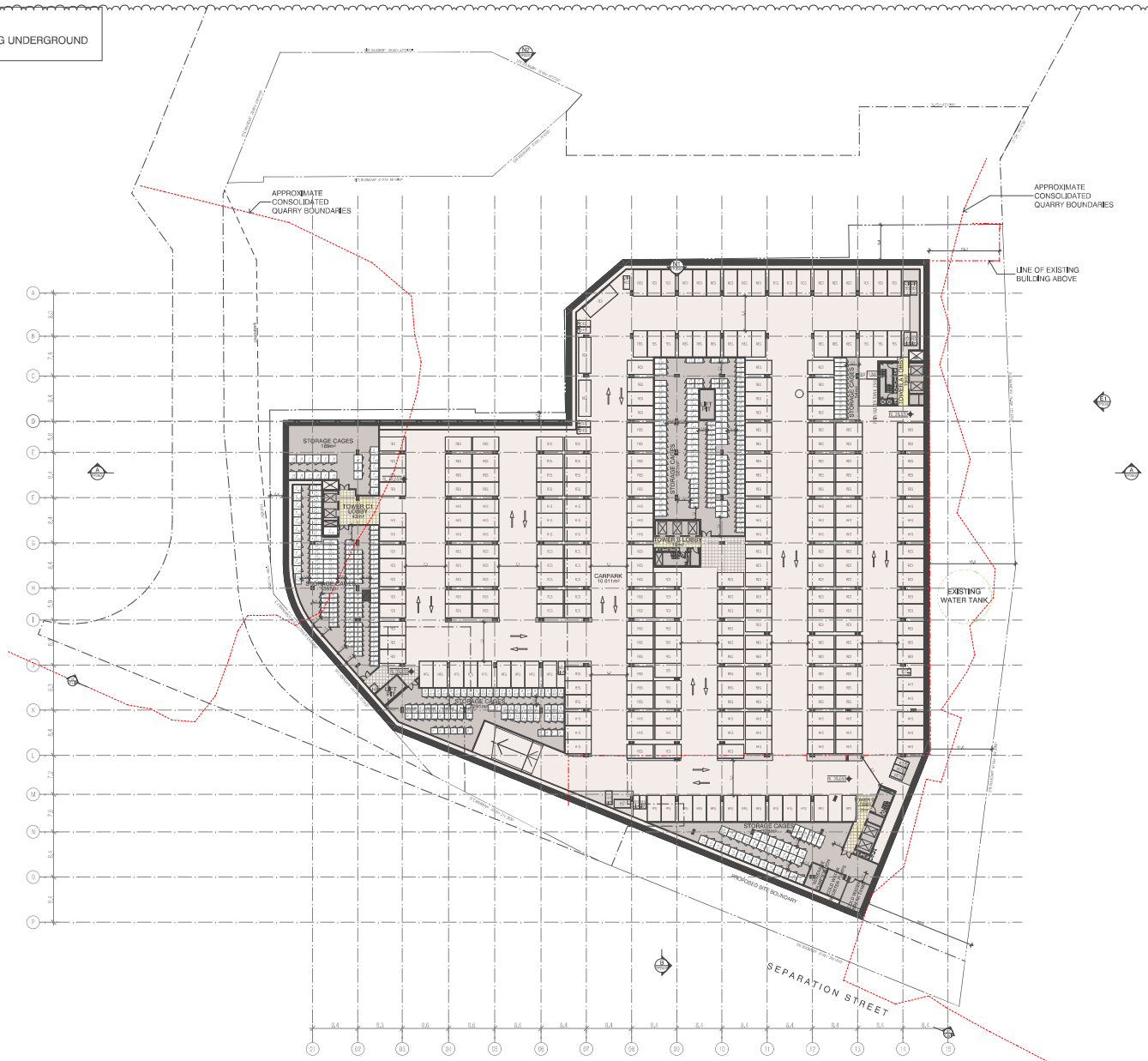
COUNTY OF BOURKE
PARISH OF JIKA JIKA
CROWN ALLOTMENT 2154 (PART)
CROWN PORTIONS 107 (PT), 112 (PT) & 122 (PT)

PLAN OF FEATURE & LEVEL SURVEY

SHEET 1 OF 1

ORIGINAL SCALE 1:400

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.



BIM Build: BIMSERVER2 – BIMBuild Basic for ARCHICAD 23/21045 Northcote Plaza (TAP)/21045 General

REVISION
- WITHOUT PREJUDICE KT 26.07.2021

REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001:2015)
THIS PROJECT IS SUBJECT TO THE FK QUALITY ASSURANCE SYSTEM

- [x] SCHEMATIC DESIGN REVIEW FOR THIS PROJECT IS COMPLETE. DATE OF REVIEW: 27.07.2021
- [ ] DESIGN DEVELOPMENT REVIEW FOR THIS PROJECT IS YET TO BE COMPLETED.
- [ ] TENDER DOCUMENTATION REVIEW FOR THIS PROJECT IS YET TO BE COMPLETED.
- [ ] CONSTRUCTION DOCUMENTATION REVIEW FOR THIS DRAWING IS YET TO BE COMPLETED.

IF THIS DRAWING IS STAMPED UNCONTROLLED COPY THEN IT IS TO BE CONSIDERED A DRAFT, SUBJECT TO REVISION WITHOUT NOTICE.

NOTES
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CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK. DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS. DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS ONLY. SEEK CLARIFICATION OF INCONSISTENCIES / CONFLICTS.

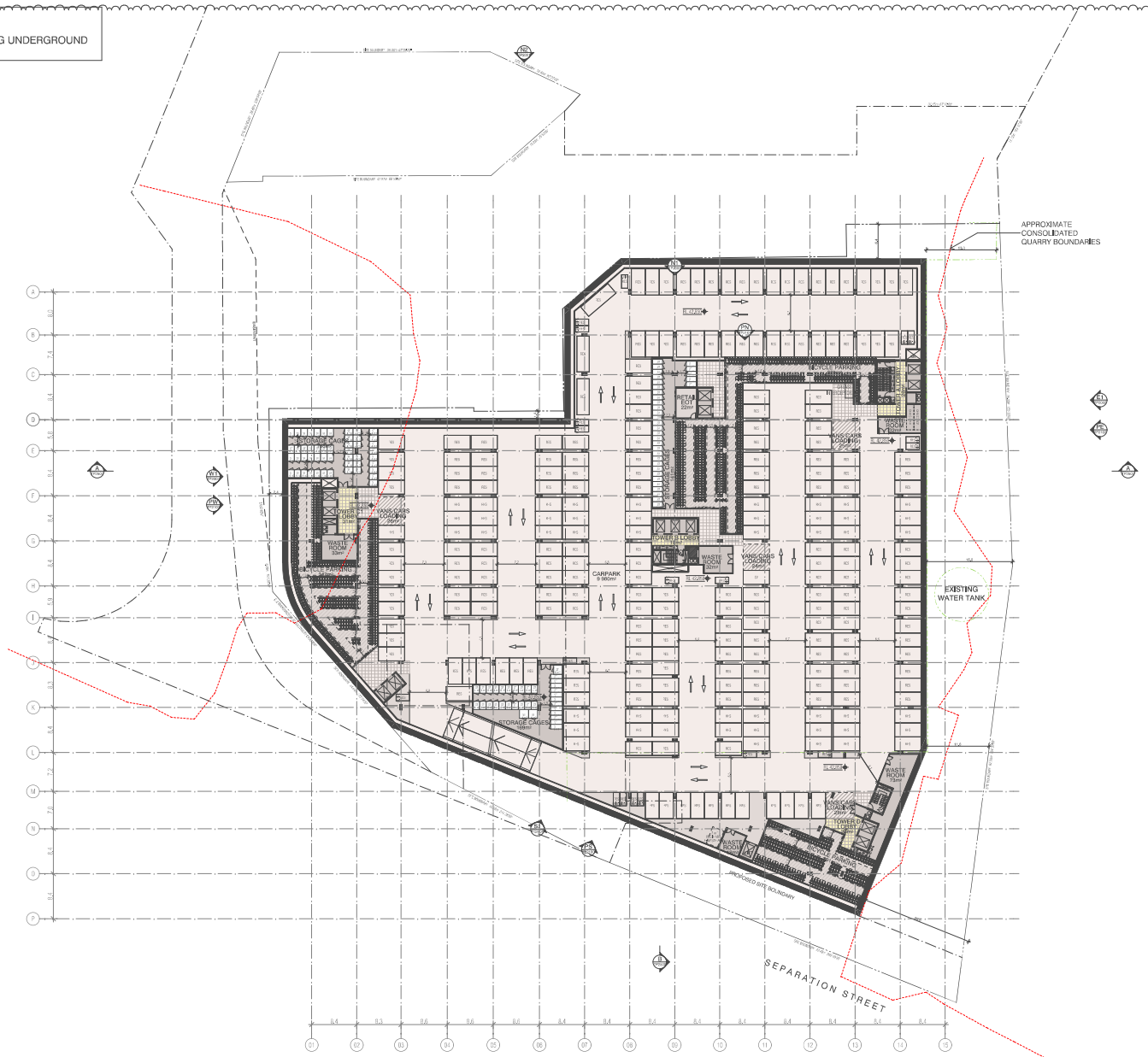
PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	26.07.2021	KT	30.07.2021	21045	1:400@A1	BASEMENT 3 FLOOR PLAN

ISSUE PURPOSE: WITHOUT PREJUDICE
REV.: -
DRAWING NO.: TP0997

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.



IRM-Built: IRMSERVER2 - IRM-Built Basic for ARCHICAD 23/21045 Northcore Plaza (TAP)/21045 General

REVISION			REVISION
-	WITHOUT PREJUDICE	KT 26.07.2021	

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001:2015)

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- [x] SCHEMATIC DESIGN REVIEW FOR THIS PROJECT IS COMPLETE. DATE OF REVIEW: 27.07.2021
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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	26.07.2021	KT	30.07.2021	21045	1:400@A1	BASEMENT 2 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
WITHOUT PREJUDICE	-	TP0998

GENERAL NOTE
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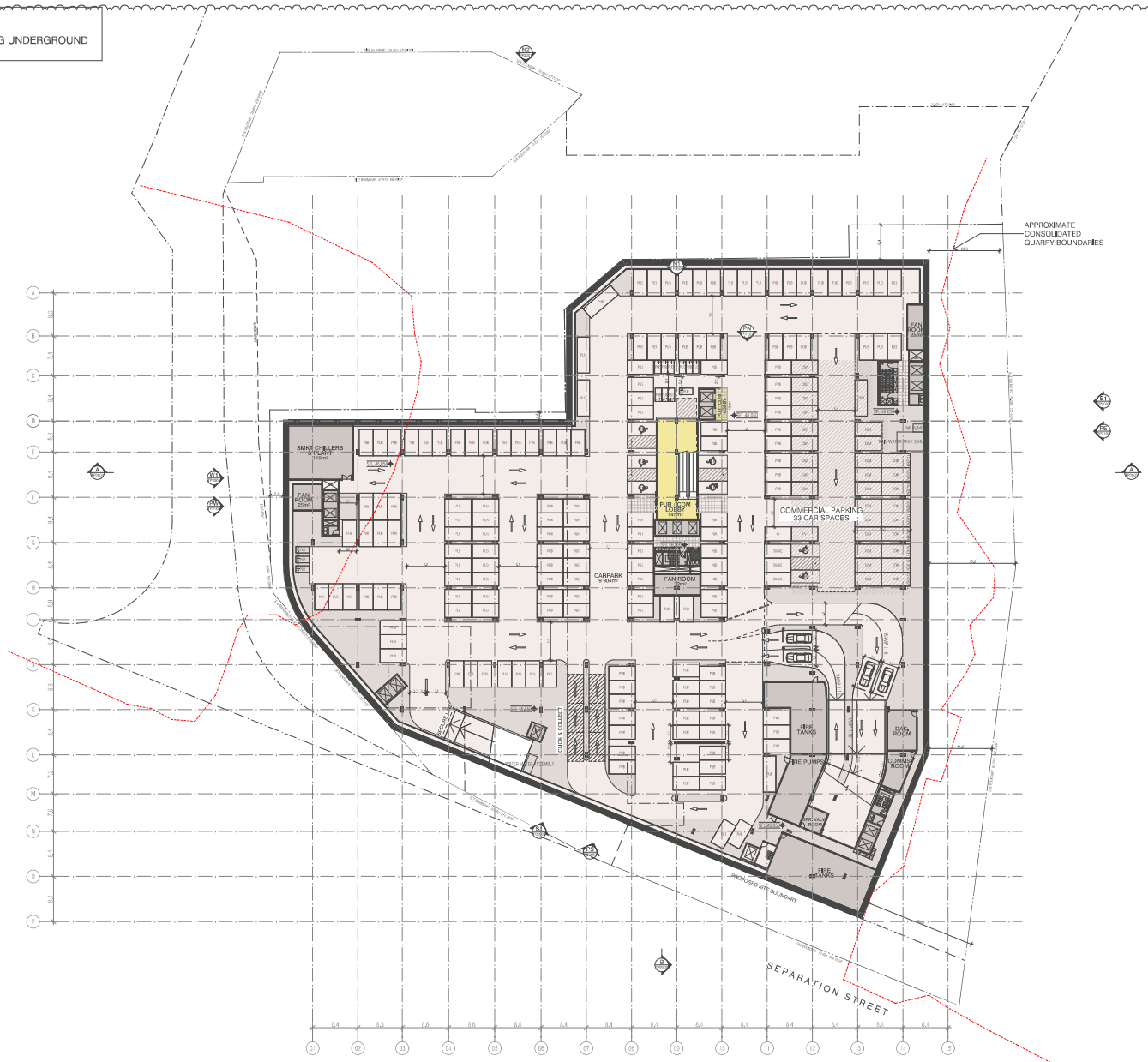

IRM Built: IRMSERVER2 - IRM Built Basic for ARCHICAD 23/21045 Northcote Plaza (TAP)/21045 General

REVISION			REVISION
-	WITHOUT PREJUDICE	KT 26.07.2021	

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001:2015)

THIS PROJECT IS SUBJECT TO THE FK QUALITY ASSURANCE SYSTEM

- [x] SCHEMATIC DESIGN REVIEW FOR THIS PROJECT IS COMPLETE. DATE OF REVIEW: 27.07.2021
- [ ] DESIGN DEVELOPMENT REVIEW FOR THIS PROJECT IS YET TO BE COMPLETED.
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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	26.07.2021	KT	30.07.2021	21045	1:400@A1	BASEMENT 1 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
WITHOUT PREJUDICE	-	TP0999



Photo 1 – View looking south-west from eastern boundary of site

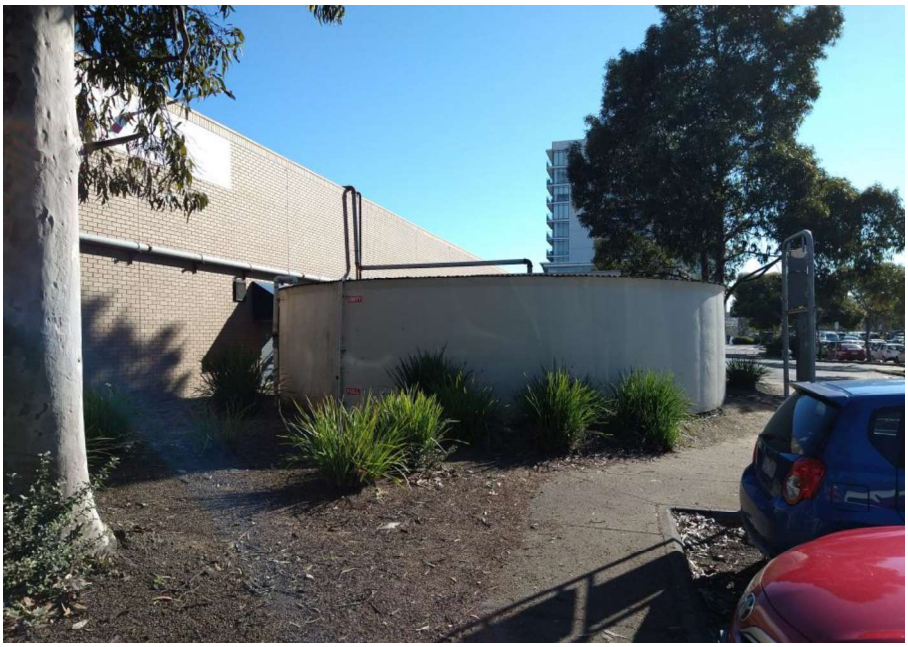


Photo 2 – View looking north-west toward DP20 and fire water tank

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Northcote Plaza** **Detailed Site Investigation for Contamination**	PROJECT:	95409.02
		PLATE No:	1
		REV:	0
	CLIENT: Time and Place Developments	DATE:	July 2021



Photo 3 – View inside Kmart looking west



Photo 4 – Example of natural soil in DP12

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Northcote Plaza** **Detailed Site Investigation for Contamination**	PROJECT: 95409.02 PLATE No: 2 REV: 0
	CLIENT: Time and Place Developments	DATE: July 2021



Photo 5 -. View of DP16 looking south-west



Photo 6 – View of DP21 and Mycar looking south-west with gas vent pipes visible in mid-ground of photo

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Northcote Plaza** **Detailed Site Investigation for Contamination**	PROJECT: 95409.02 PLATE No: 3 REV: 0
	CLIENT: Time and Place Developments	DATE: July 2021

Property Report from www.land.vic.gov.au on 21 July 2021 07:34 AM

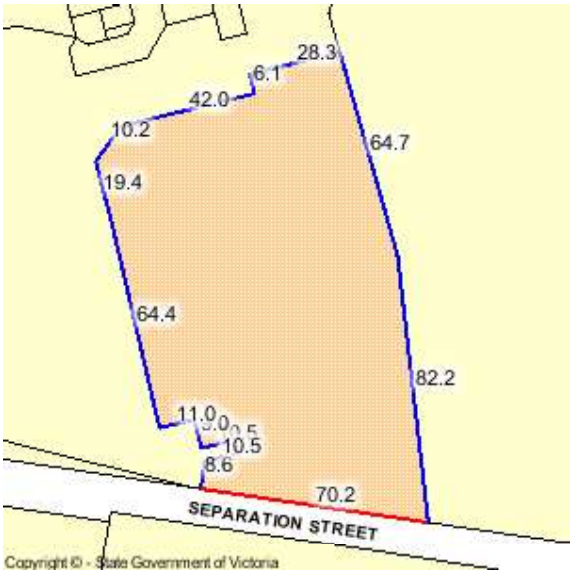
Address: UNIT 33/25 SEPARATION STREET NORTHCOTE 3070
Lot and Plan Number: Lot 100 SP27953
Standard Parcel Identifier (SPI): 100\SP27953
Local Government (Council): DAREBIN **Council Property Number:** 216575
Directory Reference: Melway 30 F8

This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.

Further information about the building control system and building in bushfire prone areas can be found in the Building Commission section of the Victorian Building Authority website www.vba.vic.gov.au

Site Dimensions

All dimensions and areas are approximate. They may not agree with the values shown on a title or plan.



Area: 9920 sq. m
Perimeter: 444 m

For this property:
Site boundaries
Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

2 dimensions shorter than 5m not displayed

Calculating the area from the dimensions shown may give a different value to the area shown above - which has been calculated using all the dimensions.

For more accurate dimensions get copy of plan at
Title and Property Certificates

State Electorates

Legislative Council: NORTHERN METROPOLITAN
Legislative Assembly: NORTHCOTE

Utilities

Rural Water Corporation: Southern Rural Water
Melbourne Water Retailer: Yarra Valley Water
Melbourne Water: inside drainage boundary
Power Distributor: CITIPOWER (Information about choosing an electricity retailer)

Planning information continued on next page

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Planning Zone Summary

Planning Zone: COMMERCIAL 1 ZONE (C1Z)
SCHEDULE TO THE COMMERCIAL 1 ZONE (C1Z)

Planning Overlays: DESIGN AND DEVELOPMENT OVERLAY (DDO)
DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14 (DDO14)
DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO)
DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1 (DCPO1)

Planning scheme data last updated on 14 July 2021.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting Planning Schemes Online

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the *Planning and Environment Act 1987.*
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates

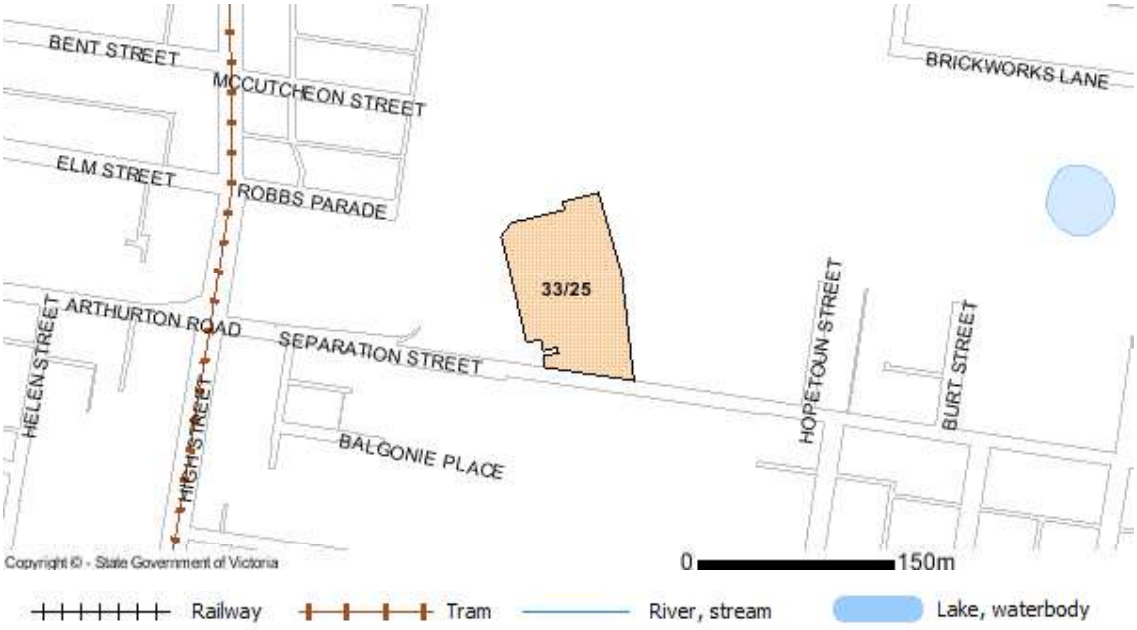
The Planning Property Report includes separate maps of zones and overlays

For details of surrounding properties, use this service to get the Reports for properties of interest

To view planning zones, overlay and heritage information in an interactive format visit Planning Maps Online

For other information about planning in Victoria visit www.planning.vic.gov.au

Area Map



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PLANNING PROPERTY REPORT

From www.planning.vic.gov.au on 21 July 2021 07:38 AM

PROPERTY DETAILS

Address:	**UNIT 33/25 SEPARATION STREET NORTHCOTE 3070**	
Lot and Plan Number:	**Lot 100 SP27953**	
Standard Parcel Identifier (SPI):	**100\SP27953**	
Local Government Area (Council):	**DAREBIN**	www.darebin.vic.gov.au
Council Property Number:	**216575**	
Planning Scheme:	**Darebin**	planning-schemes.delwp.vic.gov.au/schemes/darebin
Directory Reference:	**Melway 30 F8**	

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

Planning Zones

COMMERCIAL 1 ZONE (C1Z)

SCHEDULE TO THE COMMERCIAL 1 ZONE (C1Z)



C1Z - Commercial 1
GRZ - General Residential
IN3Z - Industrial 3
MUZ - Mixed Use
NRZ - Neighbourhood Residential
PPRZ - Public Park & Recreation
PUZ4 - Public Use - Transport
PUZ5 - Public Use - Cemetery / Crematorium
PUZ6 - Public Use - Local Government
RDZ2 - Road - Category 2

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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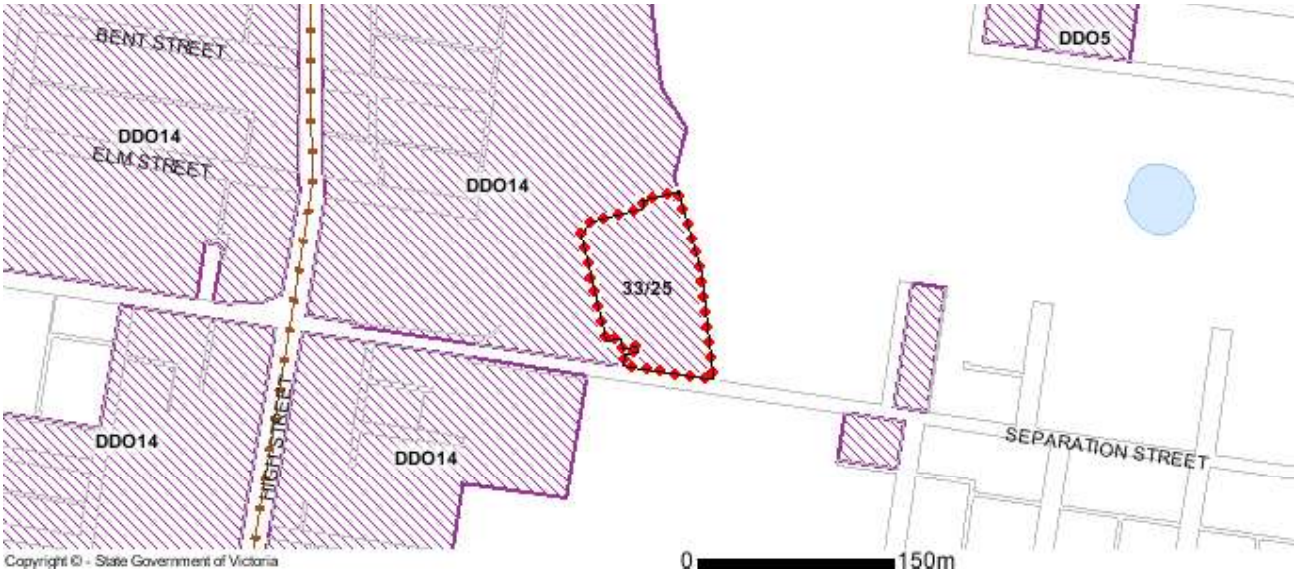
Notwithstanding this disclaimer, a vendor may rely on the information in this report for the purpose of a statement that land is in a bushfire prone area as required by section 32C (b) of the Sale of Land 1962 (Vic).

Planning Overlays

DESIGN AND DEVELOPMENT OVERLAY (DDO)

DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14 (DDO14)

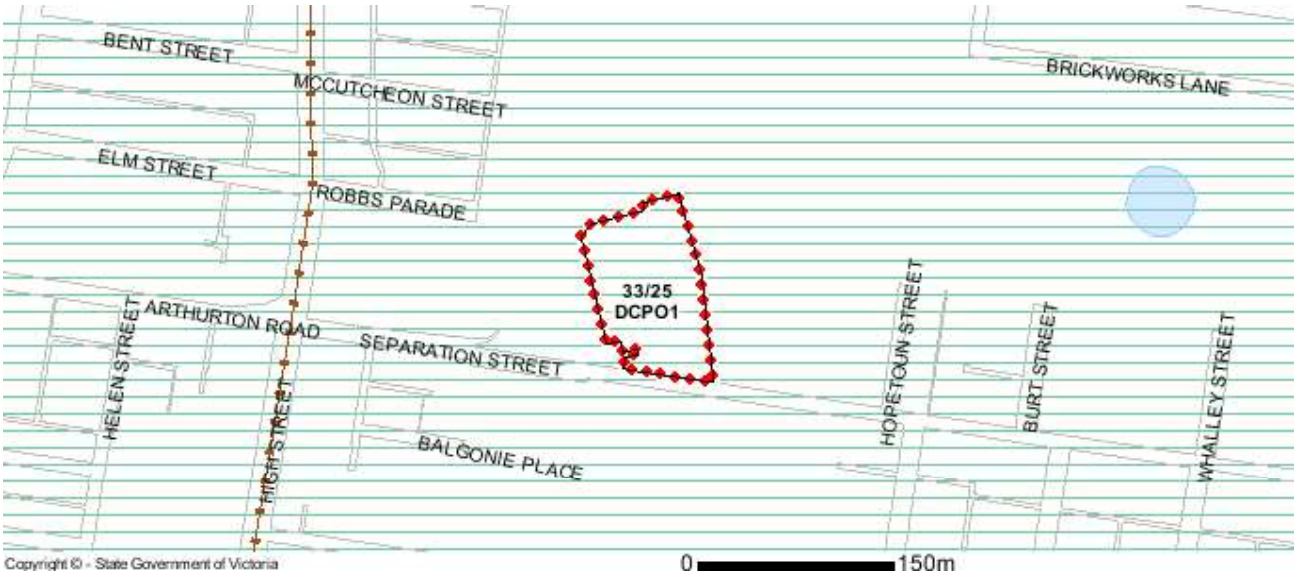


DDO - Design and Development

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO)

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1 (DCPO1)



DCPO - Development Contributions Plan

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

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Planning Overlays

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

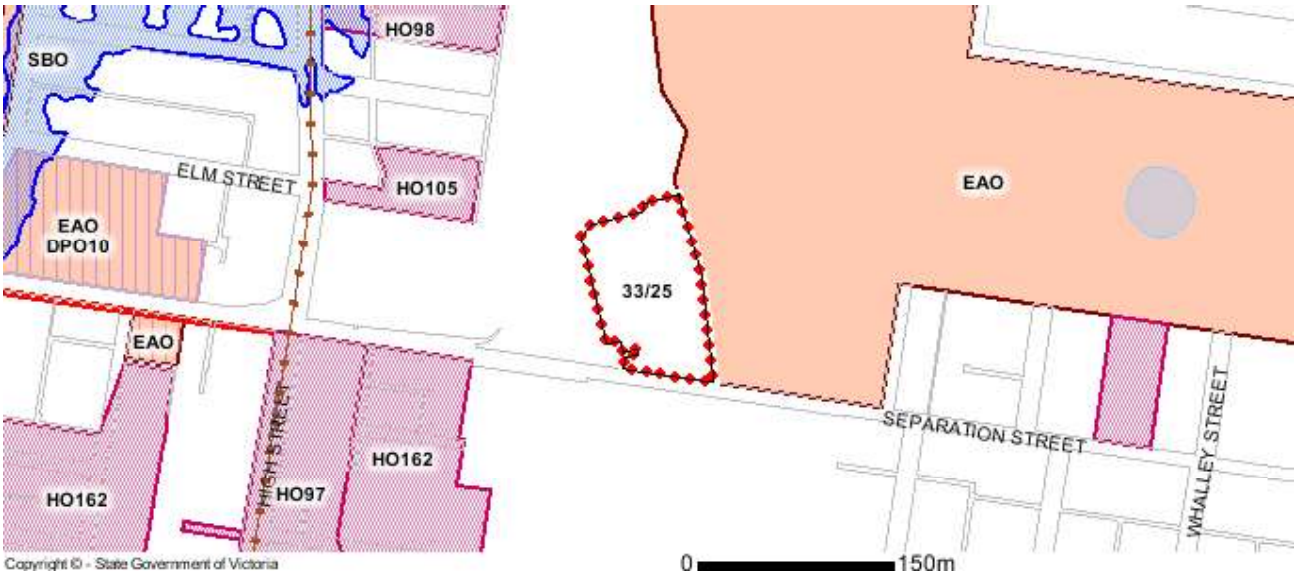
DEVELOPMENT PLAN OVERLAY (DPO)

ENVIRONMENTAL AUDIT OVERLAY (EAO)

HERITAGE OVERLAY (HO)

PUBLIC ACQUISITION OVERLAY (PAO)

SPECIAL BUILDING OVERLAY (SBO)



DPO - Development Plan
EAO - Environmental Audit
HO - Heritage
PAO - Public Acquisition
SBO - Special Building

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

Further Planning Information

Planning scheme data last updated on 14 July 2021.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

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It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit http://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

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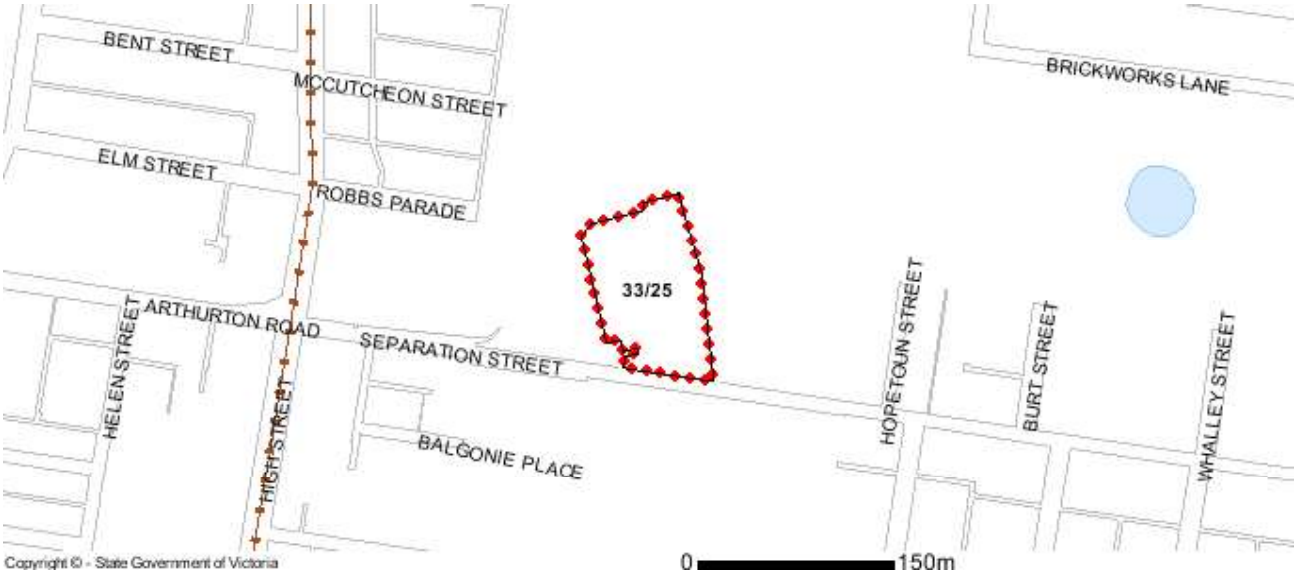
PLANNING PROPERTY REPORT

Designated Bushfire Prone Area

This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.



Designated Bushfire Prone Area

Designated bushfire prone areas as determined by the Minister for Planning are in effect from 8 September 2011 and amended from time to time.

The Building Regulations 2018 through application of the Building Code of Australia, apply bushfire protection standards for building works in designated bushfire prone areas.

Designated bushfire prone areas maps can be viewed on VicPlan at http://mapshare.maps.vic.gov.au/vicplan or at the relevant local council.

Note: prior to 8 September 2011, the whole of Victoria was designated as bushfire prone area for the purposes of the building control system.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website www.vba.vic.gov.au

Copies of the Building Act and Building Regulations are available from www.legislation.vic.gov.au

For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au

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Notwithstanding this disclaimer, a vendor may rely on the information in this report for the purpose of a statement that land is in a bushfire prone area as required by section 32C (b) of the Sale of Land 1962 (Vic).

Appendix C

Borehole Logs
BOM Weather Data

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324056
NORTHING: 5817992
DIP/AZIMUTH: 90°/--

BORE No: DP 10
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49		CONCRETE							Flush gatic cover
	0.25	FILL / Sandy GRAVEL (GP): fine to coarse, angular, dense, well graded gravel, fine to coarse sand; FILL (Crushed Rock)							Unslotted PVC to 0.3 m
	0.35	FILL / Gravelly CLAY (CP): brown, w<PL, stiff, with medium to coarse angular basalt grave and crushed rock, trace concrete and brick fragments; FILL		E	0.35 0.45	DP10 - 0.35	DP10 - 0.35		Bentonite 0.1 to 0.25 m Sand filter pack 0.25 to 0.5 m Slotted PVC Screen 0.3 to 0.5 m
	0.5	Bore discontinued at 0.5m. Auger refusal on concrete block							
48	1								1
47	2								2

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.25 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324037
NORTHING: 5817962
DIP/AZIMUTH: 90°/--

BORE No: DP 11
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.13	CONCRETE							Flush gatic cover
	0.15	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.15	DP11 - 0.15	DP11 - 0.15		Unslotted PVC to 0.5 m
					0.25				
		FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, reworked natural; FILL		E	0.4	DP11 - 0.4	DP11 - 0.4		Bentonite 0.2 m to 0.4 m
					0.5				
				E	0.7	DP11 - 0.7	DP11 - 0.7		Sand filter pack 0.4 to 1 m
		at 0.9 m: with medium brown sands			0.8				Slotted PVC screen 0.5 to 1 m
48	1 1.0	Bore discontinued at 1.0m							1
	2								2
47									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.40 m AHD
EASTING: 324062
NORTHING: 5817935
DIP/AZIMUTH: 90°/--

BORE No: DP 12
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.15	FILL / Sandy GRAVEL (GW): fine to coarse, angular, well graded, grey, fine to coarse sand, dense; FILL (Crushed Rock)		E	0.05 0.15	DP12 - 0.05	DP12 - 0.05		Flush gatic cover
		Clayey SILT (ML): low plasticity, orange, brown to grey, with medium to coarse subangular siltstone gravel, trace medium sand, w<PL, very stiff; Residual (Melbourne Formation)		E	0.4 0.5	DP12 - 0.4	DP12 - 0.4		Bentonite 0.2 to 1.2 m
48	1.15	Clayey SILT (ML): low plasticity, pale red, yellow, brown to pale grey, w<PL, very stiff; Extremely weathered material (Melbourne Formation)		S	1.0 1.4		12,27,27 N = 54		Unslotted PVC to 1.5 m Spoil 0.5 to 1.2 m
	1.5	SILTSTONE (XW-HW) / Clayey SILT (ML): fragmented to highly fractured, pale brown to pale grey and pale red, very low strength / very low plasticity, pale brown to pale grey and pale red, w<PL, very stiff to hard; Melbourne Formation		C	1.5 1.6 1.9 2.1 2.2 2.3 2.4 2.7 2.8 2.9		pp = 180 pp = 480 pp >600 pp = 370 pp >600 pp = 320 pp = 260 pp = 320 pp = 380		
47	3.0	(HW): very low to low strength			3.0 3.2		pp = 120		
	3.3	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / stiff to very stiff			3.5 3.6		pp = 300 pp = 320		
	3.7	(HW): very low to low strength		C					
46	4.0	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / very stiff							
45	4.5	(HW): very low to low strength			4.5 4.6		pp = 200		Slotted PVC screen 1.5 to 7.5 m
44				C					Sand filter pack 1.2 to 7.5 m
					5.8		pp = 220		
		from 6 m: very low strength			6.0 6.1 6.2 6.3 6.4 6.6		pp = 300 pp = 520 pp = 470 pp = 500 pp = 480		
43	6.4	SILTSTONE (XW-HW) / Clayey SILT (ML): extremely low to very low strength / very stiff		C	6.8		pp = 520		
42	7.5	Bore discontinued at 7.5m - target depth reached			7.4 7.5		pp = 470		End cap
41									
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 1.5 m

TYPE OF BORING: Solid flight auger to 1.5 m; NMLC to 7.5 m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), location coordinates recorded by handheld GPS.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324047
NORTHING: 5817913
DIP/AZIMUTH: 90°/--

BORE No: DP 13
PROJECT No: 95409.02
DATE: 22/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.15	CONCRETE		E	0.15	DP13 - 0.15	DP13 - 0.15		Flush gatic cover
	0.2	FILL / Sandy GRAVEL (GW): fine to coarse, angular, dense, well graded, grey, fine to coarse sand; FILL (Crushed Rock)			0.2				
	0.5			E	0.4	DP13 - 0.4	DP13 - 0.4		
					0.5				
		FILL / Clayey SILT (ML): low plasticity, pale brown to grey, w<PL, stiff; FILL (reworked natural)							
48	1			E	1.0	DP13 - 1.0	DP13 - 1.0		Unsloted PVC to 2.0 m
					1.1				Bentonite 0.2 to 1.8 m
	1.5	Clayey SILT (ML): low plasticity, pale grey, trace medium to coarse subangular siltstone gravel, w<PL, very stiff; Residual (Melbourne Formation)							
		from 1 m: with Siltstone gravel		E	1.7	DP13 - 1.7	DP13 - 1.7		
	2				1.8				
	2.0	Clayey Sandy SILT (ML): low plasticity, pale grey, fine to medium sand, w<PL, very stiff; Extremely weathered material (Melbourne Formation)			2.0				
47		SANDSTONE (XW-HW) / Clayey Sandy SILT (ML): very low to low strength, fragmented to fractured, pale grey - pale brown and pale red, interbedded with Siltstone, highly fractured / low plasticity, pale grey - pale brown and pale red, fine to medium sand, w<PL, very stiff; Melbourne Formation		C					
	3				3.1		pp = 350		
					3.2		pp = 240		
46					3.4		pp = 300		
					3.5				
					3.8		pp = 500		
	4	3.8-3.94 m: fragmented			3.9		pp = 340		
					4.1		pp = 360		
	4.3	from 4.15 m: highly fractured		C	4.2		pp = 180		
45	4.5	Core loss							
	4.75	SANDSTONE (XW-HW) / Clayey Sandy SILT (ML): very low strength / very stiff (as above)			4.55		pp = 300		
					4.6		pp = 220		
	5	SANDSTONE (HW): low strength			5.0				Slotted PVC screen 2 m to 8 m
44				C					Sand filter pack 1.8 to 8 m
	6								
43	6.5	Core loss			6.5				
	6.9	SANDSTONE (HW): low strength		C					
42	7								
	7.55	Core loss							
	8								
	8.0	Bore discontinued at 8.0m - target depth reached			8.0				End cap
41	9								
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 2 m

TYPE OF BORING: Solid flight auger to 2 m; NMLC coring to 8 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324987
NORTHING: 5817961
DIP/AZIMUTH: 90°/--

BORE No: DP 14
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.11	CONCRETE							Flush gatic cover
		FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.11	DP14 - 0.11	DP14 - 0.11		Unslotted PVC to 0.5 m
	0.26	FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, strong hydrocarbon odour; Reworked Natural; FILL			0.25				Bentonite 0.2 to 0.4 m
49				E	0.4	DP14 - 0.4	DP14 - 0.4		
	0.5	Clayey SILT (CL): slight moist, w<PL, stiff, strong hydrocarbon odour			0.5				
	1			E	0.9	DP14 - 0.9	DP14 - 0.9		1
					1.0				
		from 1.2 m: pale grey to brown, with low strength Siltstone gravel							Sand filter pack 0.4 to 2 m
48				E	1.4	DP14 - 1.4	DP14 - 1.4		Slotted PVC screen 0.5 to 2 m
	1.6	SILTSTONE (XW): pale grey to brown coarse low to medium strength siltstone gravel, moderate hydrocarbon odour			1.5				
	2			E	1.9	DP14 - 1.9	DP14 - 1.9		2
	2.0	Bore discontinued at 2.0m			2.0				
47									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.11 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324993
NORTHING: 5817935
DIP/AZIMUTH: 90°/--

BORE No: DP 15
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		CONCRETE							Flush gatic cover
	0.13								
	0.17	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.18	DP15 - 0.18	DP15 - 0.18		Cement 0.18 to 0.3 m
					0.28				
	0.35	FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, strong hydrocarbon odour; Reworked Natural; FILL							
49		Clayey SILT (CL): slight moist, w<PL, stiff, strong hydrocarbon odour		E	0.4	DP15 - 0.4	DP15 - 0.4		Bentonite 0.3 to 0.6 m
					0.5				Unslotted PVC to 0.8 m
				E	0.9	DP15 - 0.9	DP15 - 0.9		
	1	from 1 m: pale grey to brown, wit fine staining, hard, moderate hydrocarbon odour			1.0				1
48				E	1.4	DP15 - 1.4	DP15 - 1.4		Sand filter pack 0.6 to 2.8 m
					1.5				
	1.8	SILTSTONE (XW): pale grey to brown to pink, coarse low to medium strength gravel, moderate hydrocarbon odour							
	2								2 Slotted PVC screen 0.8 to 2.8 m
47				E	2.6	DP15 - 2.6	DP15 - 2.6		
					2.7				
	2.8	Bore discontinued at 2.8m. Auger refusal on HW Siltstone							

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324003
NORTHING: 5817900
DIP/AZIMUTH: 90°/--

BORE No: DP 16
PROJECT No: 95409.02
DATE: 23/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.13	CONCRETE		E	0.13	DP16 - 0.13	DP16 - 0.13		Flush gatic cover
	0.18				0.18				
	0.3	FILL / Sandy GRAVEL (GW): fine to coarse, angular, well graded, grey, fine to coarse sand, dense; FILL (Crushed Rock)		E	0.4	DP16 - 0.4	DP16 - 0.4		
					0.5				
48	1.0	FILL / Clayey SILT (ML): low plasticity, moist, pink and grey, with medium subangular siltstone gravel, stiff, w<PL; FILL (reworked natural)		E	1.0	DP16 - 1.0	DP16 - 1.0		Unsloted PVC to 1.9. m Bentonite 0.2 to 1.8 m
		Clayey SILT (ML): low plasticity, moist, pale pink to grey, trace medium subangular siltstone gravel, w<PL, very stiff; Residual (Melbourne Formation)			1.1				
47	2.0	from 1m: grading to pale grey extremely weathered material (Melbourne Formation)			2.0	DP16 - 2.0	DP16 - 2.0		
	2.6	SILTSTONE (XW-HW) / Clayey SILT (ML): extremely low to low strength, fragmented to fractured, pale brown - pale red and pale grey / slightly moist, pale brown - pale red and pale grey, very stiff, w<PL; Melbourne Formation		C					
46	3	(HW): low to medium strength, highly fractured to fractured, with clay in parts			3.5				
					3.7		pp = 310		
45	4			C	4.15		pp = 220		
	5				5.0				Slotted PVC screen 2 m to 8 m
44				C					Sand filter pack 1.8 m to 8 m
43	6				6.5				
42	7			C					
41	8	Bore discontinued at 8.0m - target depth reached			8.0				End cap
40	9								

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 2 m

TYPE OF BORING: Solid flight auger to 2 m; NMLC coring to 8 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324022
NORTHING: 5817930
DIP/AZIMUTH: 90°/--

BORE No: DP 17
PROJECT No: 95409.02
DATE: 23/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.1	CONCRETE		E	0.15	DP17 - 0.15	DP17 - 0.15		Flush gatic cover
	0.25	FILL / Clayey SILT (ML): low plasticity, moist, pink and grey, with medium subangular siltstone gravel, stiff, w<PL; FILL (reworked natural)			0.25				
				E	0.5	DP17 - 0.5	DP17 - 0.5		Bentonite 0.2 to 0.5 m
					0.6				Unslotted PVC to 0.6 m
		Clayey SILT (ML): low plasticity, moist, very stiff, pale pink to grey, trace medium to coarse subangular siltstone gravel, w<PL, stiff; Residual (Melbourne Formation)		E	0.8	DP17 - 0.9	DP17 - 0.9		
1	1.0			S	1.0		18,5/0 mm bouncing refusal		1
					1.15				
48	1.5	Clayey SILT (ML): low plasticity, moist, very stiff, pale grey, trace medium to coarse subangular siltstone gravel, w<PL, stiff; Extremely weathered material (Melbourne Formation)		E	1.4	DP17 - 1.4	DP17 - 1.4		
					1.5				Sand filter pack 0.5 to 2.6 m
2		SILTSTONE (HW): very low to low strength, fragmented to highly fractured, pale brown, brown, pale grey and pale red (Melbourne Formation)		C					2 Slotted PVC screen 0.6 to 2.6 m
47	3.0	Core loss			3.0				3
	3.4	(HW): very low to low strength		C					
4									4
46	4.5	Core loss			4.5				
	4.9	(HW): very low to low strength							
5									5
45	5.2	Core loss		C					
	5.3	(HW): very low to low strength							
					5.8		pp = 260		
					5.9		pp = 280		
6					6.0				6
44	6.45	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / moist, pale brown, pale grey and pale red, very stiff, w<PL (Melbourne Formation)		C	6.5		pp = 180		
					6.6		pp = 240		
7									7
					7.1		pp = 550		
					7.3		pp = 580		
43					7.4		pp = 380		
					7.5				
					7.8		pp = 480		
8									8
					8.1		pp = 200		
42				C	8.2		pp = 240		
					8.4		pp = 260		
					8.5		pp = 270		
					8.7		pp = 400		
9	9.0	Bore discontinued at 9.0m - target depth reached			9.0				9
41									
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 1.5 m

TYPE OF BORING: Solid flight auger to 1.5 m; NMLC coring to 9 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.80 m AHD
EASTING: 324054
NORTHING: 5817966
DIP/AZIMUTH: 90°/--

BORE No: DP 18
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							Flush gatic cover
	0.3	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL							
49		Clayey SILT (ML): very low plasticity, orange to brown to grey, trace medium sand, with medium to coarse subangular siltstone gravel, w<PL, very stiff; EW Siltstone		E	0.3 0.4	DP18 - 0.3	DP18 - 0.3		Unslotted PVC to 0.5 m Bentonite 0.15 to 0.45 m
1				E	0.9 1.0	DP18 - 0.9	DP18 - 0.9		1
48									Sand filter pack 0.5 to 2 m Slotted PVC Screen 0.5 to 2 m
2	2.0	SILTSTONE (XW): yellow to brown to pale grey, very low strength, with coarse gravel							2
	2.3	Bore discontinued at 2.3m							
47									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.15 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 48.99 m AHD
EASTING: 324058
NORTHING: 5817951
DIP/AZIMUTH: 90°/--

BORE No: DP 19
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							Flush gatic cover
	0.25	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL							
		FILL / Gravelly CLAY (CI): brown, fine to coarse subrounded basalt gravel, w<PL, firm, with fine to coarse brick fragments, trace ceramic fragments, trace ash; FILL		E	0.25 0.35	DP19 - 0.25	DP19 - 0.25		Unslotted PVC to 0.5 m Bentonite 0.15 to 0.45 m
	0.5	Silty CLAY (CH): high plasticity, brown, with fine to coarse siltstone, brick and basalt gravel, w<PL, very stiff							
48	1.0	Clayey SILT (ML): very low plasticity, orange to brown to grey, trace medium sand, with medium to coarse subangular siltstone gravel, w<PL, very stiff; EW Siltstone		E	0.75 0.85	DP19 - 0.75	DP19 - 0.75		1
				E	1.3 1.4	DP19 - 1.3	DP19 - 1.3		Sand filter pack 0.5 to 2 m Slotted PVC Screen 0.5 to 2 m
47	2.1	SILTSTONE (XW): yellow to brown to pale grey, very low strength, with coarse gravel							2
	2.3	Bore discontinued at 2.3m							

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.27 m AHD
EASTING: 324066
NORTHING: 5817921
DIP/AZIMUTH: 90°/--

BORE No: DP 20
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.05	TOPSOIL / FILL / Clayey Silt : brown, with fine to corse brick and siltstone gravel, trace coarse brick sand; FILL							Flush gatic cover
		Clayey SILT (ML): pale grey to brown, w<PL, brown clay, with HW Siltstone gravel; Inferred XW Siltstone		E	0.2 0.3	DP20 - 0.2	DP20 - 0.2		Unslotted PVC to 0.5 m Bentonite 0.15 to 0.45 m
	1			E	1.0 1.1	DP20 - 1.0	DP20 - 1.0		1
48	1.5	SILT (ML): low plasticity, white, slightly moist							Sand filter pack 0.5 to 2 m Slotted PVC Screen 0.5 to 2 m
	2								2
47	2.3	Bore discontinued at 2.3m							

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased
TYPE OF BORING: Concrete coring to 0.5 m; solid flight auger to end
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.27 m AHD
EASTING: 324062
NORTHING: 5817935
DIP/AZIMUTH: 90°/--

BORE No: DP 21
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0	FILL / Clayey SILT (ML): brown, with fine to coarse brick and Siltstone gravel, trace coarse brick sand; FILL		E	0.1 0.2	DP21 - 0.1	DP21 - 0.1		Flush gatic cover Cement to 0.2 m Unslotted PVC to 0.5 m Bentonite 0.2 to 0.4 m
48	1	from 0.5 to 1 m: brick cobbles		E	0.8 0.9	DP21 - 0.8	DP21 - 0.8		Sand filter pack 0.4 to 1.7 m Slotted PVC Screen 0.5 to 1.7 m
				E	1.2 1.3	DP21 - 1.2	DP21 - 1.2		
47	2								
	2.3	Bore discontinued at 2.3m							
46	3								
45	4								
44	5								
43	6								
42	7								
41	8								
40	9								

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5 m; NMLC coring to 7.5 m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Melbourne, Victoria
June 2021 Daily Weather Observations

Most observations from Olympic Park, but some from Melbourne Airport.

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Tu	5.7	15.7	0	4.0	1.3	N	39	11:32	9.2	60	8	NNE	13	1020.8	15.3	48	7	N	17	1019.4
2	We	9.2	19.6	0	3.2	7.7	NNW	33	13:14	12.4	63	1	N	9	1018.8	19.0	44	5	N	11	1015.2
3	Th	10.4	16.9	0.2	3.4	7.5	N	24	01:09	12.2	93	2	NE	7	1015.1	16.7	62	5	SSW	9	1012.9
4	Fr	10.0	13.6	2.0	1.2	2.0	S	37	15:23	10.9	81	3	SW	7	1017.0	11.9	66	7	W	7	1018.5
5	Sa	3.8	12.9	0	1.4	3.5	N	52	14:43	6.7	74	7	N	11	1021.4	12.0	57	7	N	26	1017.6
6	Su	6.7	14.7	0	2.6	4.2	N	39	12:17	11.0	81	7	N	17	1022.2	13.6	73	5	N	17	1019.9
7	Mo	10.7	17.2	0	1.0	2.6	N	59	14:39	12.5	73	7	N	22	1016.7	16.5	55	7	N	28	1009.3
8	Tu	9.3	13.2	3.0	4.8	2.3	N	48	00:39	9.3	89	7	NNE	9	1005.0	11.1	72	7	W	11	1004.8
9	We	7.8	14.7	4.0	1.6	0.5	S	67	23:47	9.7	83	7	SSW	4	1010.7	12.3	86	8	S	20	1008.8
10	Th	9.7	15.1	12.0	3.6	0.3	S	67	00:33	14.5	78	8	SSE	30	1009.5	14.3	71	7	ESE	11	1009.8
11	Fr	6.8	15.0	0.4	0.4	1.3	WNW	22	23:37	7.9	100	7	N	6	1016.0	14.6	80	7	SSW	7	1013.7
12	Sa	7.4	16.5	9.4	0.4	1.0	WNW	33	12:32	12.7	85	7	WNW	7	1014.4	15.5	61	7	W	11	1014.0
13	Su	10.9	15.9	0	1.4	0.7	NNW	17	10:49	11.7	86	7		Calm	1018.8	14.3	69	7	S	6	1016.8
14	Mo	9.7	16.4	0	1.4	1.6	ESE	15	16:16	11.0	89	7	NNE	7	1018.0	15.9	57	6	SSE	6	1015.5
15	Tu	7.0	15.6	0	0.8	0.0	N	24	17:27	8.5	89	7	NNE	7	1017.5	15.0	60	7	NNE	9	1014.5
16	We	8.3	16.0	1.8	2.2	2.9	NNW	41	12:56	11.5	88	7	NNE	13	1011.4	15.4	60	7	N	15	1008.1
17	Th	7.8	12.9	0.8	1.0	2.6	N	20	07:03	9.4	83	7	N	9	1010.5	12.4	70	7	N	4	1008.8
18	Fr	6.1	13.2	1.6	1.8	0.1	SSW	26	13:15	9.4	100	7	S	2	1012.6	12.5	98	7	SSW	9	1014.4
19	Sa	9.1	16.2	2.2	1.6	4.0	SE	28	10:38	11.4	100	7	S	6	1024.5	13.4	86	6	SSW	13	1025.1
20	Su	5.2	14.5	0	0.0	6.9	SE	20	10:40	9.1	100	1	E	4	1027.8	13.8	69	2		Calm	1025.4
21	Mo	3.9	15.4	0.2	0.4	9.1	N	26	12:22	6.3	94	1	NE	7	1028.7	14.6	51	1	N	15	1025.8
22	Tu	3.7	16.3	0	2.0	1.9	NNE	28	13:37	5.6	91	7	NNE	6	1029.6	14.4	56	7	NNE	13	1026.2
23	We	5.6	15.3	0	2.7	2.1	N	46	10:33	13.9	63	8	N	9	1019.4	14.8	67	7	N	17	1012.5
24	Th	9.8	16.7	0	1.0	5.2	N	41	12:07	12.6	85	1	N	6	1007.2	15.3	54	7	N	17	1004.9
25	Fr	10.6	13.2	0.6	2.4	0.3	N	37	00:05	11.0	88	7	N	13	1010.3	12.6	94	7		Calm	1011.1
26	Sa	10.0	13.4	5.6	0.2	4.6	NNW	28	22:26	10.5	79	3	W	9	1019.9	12.4	56	3	WSW	9	1020.1
27	Su	9.7	15.3	0	2.4	4.9	NNW	26	01:43	10.9	81	5	N	11	1025.9	13.6	75	5	SSW	9	1027.0
28	Mo	6.4	15.1	0	1.4	9.0	NNW	24	12:27	7.8	97	1	NNE	7	1032.8	14.6	53	1	NNE	9	1031.0
29	Tu	4.2	16.7	0	2.2	8.8	NNW	43	14:12	6.8	88	1	NE	2	1032.5	16.2	55	2	N	19	1029.4
30	We	5.5	16.9	0	1.2	6.8	N	39	14:04	11.3	79	1	NNE	9	1026.8	16.8	57	1	N	19	1022.6
Statistics for June 2021																					
Mean		7.7	15.3		1.8	3.5				10.3	84	5		8	1018.7	14.4	65	5		12	1016.8
Lowest		3.7	12.9		0.0	0.0				5.6	60	1		Calm	1005.0	11.1	44	1		Calm	1004.8
Highest		10.9	19.6	12.0	4.8	9.1	S	67		14.5	100	8	SSE	30	1032.8	19.0	98	8	N	28	1031.0
Total				43.8	53.7	105.7															

Temperature, humidity, wind, pressure and rainfall observations are from Melbourne (Olympic Park) {station 086338}. Cloud, evaporation and sunshine observations are from Melbourne Airport {station 086282}

On Tuesday 6 January 2015, the Melbourne (Latrobe Street) observation station permanently closed.

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Users of this product are deemed to have read the information and accepted the conditions described in the notes at http://www.bom.gov.au/climate/dwo/IDCJDW0000.pdf

Appendix D

Tabulated Laboratory Results
EIL Derivation Table
PAH Source Calculator Table
95% UCL Results

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Table D1
Comparison of Soil Laboratory Results to Ecological and Human Health Criteria

Sample No	Strata	Sample Depth (m)	Sample Date	Metals										Monocyclic Aromatic Hydrocarbons (MAH)				Total Recoverable Hydrocarbons (TRH)						Organochlorine pesticides										Polychlorinated Biphenyls	Phenols			Polycyclic Aromatic Hydrocarbons (PAH)			
				Arsenic	Cadmium	Chromium		Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzene	Toluene	Ethylbenzene	Total Xylenes	TRH C6-C10	F1	TRH >C10-C16	F2	TRH >C16-C34	TRH >C34-C40	Cyanide	DDT + DDD + DDE	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor		Phenol	Pentachlorophenol	Cresols	Naphthalene	Benzo(a)Pyrene (BaP)	BaP TEQ	Total PAH
						Total Chromium III	Total Chromium VI																																	
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EIL & ESL CRITERIA (residential & open space, sands and gravels)				100	3[A]	200		140	1,100		1[A]	75		340	50	85	70	105		180		120	300	2,800		180												170	0.7		
NEPM EIL & ESL CRITERIA (residential & open space, silts and clays)				100	3[A]	200		140	1,100		1[A]	75		340	65	105	125	45		180		120	1,300	5,600		180												170	0.7		
NEPM EIL and ESL CRITERIA (commercial and industria, sands and gravels)				160	3[A]	320		200	1,800	500[A]	1[A]	130		510	75	135	165	180		215		170	1,700	3,300		640												370	1.4		
NEPM EIL and ESL CRITERIA (commercial and industrial, silts and clays)				160	3[A]	320		200	1,800	500[A]	1[A]	130		510	95	135	185	95		215		170	2,500	6,600		640												370	1.4		
NEPM HIL-C CRITERIA (Recreational)				300	90		300	17,000	600		80	1,200	700	30,000										240	400	10	70	340	20	10	10	400	1	40,000	120	4,000			3	300
NEPM HIL-D CRITERIA (Commercial and Industrial)				3000	900		3600	240,000	1,500		730	6,000	10,000	400,000										1,500	3,600	45	530	2,000	100	50	80	2,500	7	240,000	660	25,000			40	4,000
NEPM HSL-D for vapour intrusion (commercial/industrial, sand, 0 - <1 m)															3			230	260																					
NEPM HSL-D for vapour intrusion (commercial/industrial, silt, 0 - <1 m)															4					250																					
NEPM HSL-D for vapour intrusion (commercial/industrial, silt, 1 - <2 m)															4					360																					
NEPM HSL-D for vapour intrusion (commercial/industrial, clay, 0 - <1 m)															4					310																					
NEPM HSL-D for vapour intrusion (commercial/industrial, clay, 1 - <2 m)															6					480																					
NEPM Management Limits (commercial/industrial, sands and gravels)																			700		1,000		3,500	10,000																	
NEPM Management Limits (commercial/industrial, silts and clays)																			800		1,000		5,000	10,000																	
Nov-19																																									
DP01-0.9	Fill (Silty CLAY)	0.9-1.0	11/11/2019	<5	<0.2		<1	24	23		<0.05	19	<3	37	<0.5	<0.5	<0.5	<1	<20	<20	<20	<20	<50	<50	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<1	<0.1	0.1	0.1	0.7
DP01+3.9	Fill (Sandy CLAY)	3.9-4.0	11/11/2019	9	<0.2	29		31	120		0.11	37	<3	91					<20	<20	<20	<20	<50	<50															<0.1	0.5	0.7	5.2
DP02-0.2	Fill (Silty CLAY)	0.2-0.3	13/11/2019	9	0.2	28		35	89		0.13	38	<3	120					<20	<20	<20	<20	190	<50															<0.2 LORR	3.3	4.7	34
DP02-0.5	Fill (Silty CLAY)	0.5-0.6	13/11/2019	10	0.3	20		29	370		0.43	17	<3	100																											
DP02-3.9	Fill (Silty CLAY)	3.9-4.0	13/11/2019	9	3.8	39		480	290		0.21	62	<3	1800					<20	<20	<20	<20	120	<50															0.2	1.4	2.1	17
DP03-0.9	Clayey SILT	0.9-1.0	11/11/2019	5	<0.2	26		24	11		<0.05	<5	<3	55					<20	<20	<20	<20	<50	<50															<0.1	<0.1	<0.1	<0.1
DP04-0.5	Silty CLAY	0.5-0.6	12/11/2019	9	<0.2	25		42	15		<0.05	<5	<3	37					<20	<20	<20	<20	<50	<50															<0.1	<0.1	<0.1	<0.1
DP05-0.9	Clayey SILT	0.9-1.0	11/11/2019	<5	<0.2	6		<5	7		<0.05	<5	<3	<5					<20	<20	<20	<20	<50	<50															<0.1	<0.1	<0.1	<0.1
DP06-0.4	Fill (Gravelly SAND)	0.4-0.5	11/11/2019	<5	<0.2	22		29	18		<0.05	59	<3	60					<20	<20	<20	<20	<50	<50															<0.1	0.2	0.2	1.2
DP06-1.9	Fill (Gravelly SAND)	1.9-2.0	11/11/2019																																						
DP06-2.8	Fill (Gravelly SAND)	2.8-2.9	11/11/2019	<5	0.5	83		42	47		<0.05	15	<3	63					<20	<20	<20	<20	380	64															<0.1	0.3	0.4	3.8
DP07-1.9	Fill (Gravelly SAND)	1.9-2.0	11/11/2019	<5	<0.2		<1	18	13		<0.05	13	<3	32	<0.5	<0.5	<0.5	<1	<20	<20	<20	<20	80	<50	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<1	0.1	1.4	2	16
DP07-4.9	Fill (Gravelly SAND)	4.9-5.0	11/11/2019	<5	<0.2	22		16	14		<0.05	19	<3	39					<20	<20	<20	<20	270	<50															0.6	6.3	9.5	68
DP08-0.5	Fill (Sandy GRAVEL)	0.5-0.6	11/11/2019	<5	<0.2	9		11	6		0.2	37	<3	21					<20	<20	<20	<20	<50	<50															<0.1	<0.1	<0.1	<0.1
DP09-1.9	Clayey SILT	1.9-2.0	11/11/2019	<5	<0.2	15		15	5		<0.05	<5	<3	11					<20	<20	<20	<20	<50	<50															<0.1	<0.1	<0.1	<0.1
Jun-21																																									
DP10-0.35	FILL (Gravelly CLAY)	0.35-0.45	25/06/2021	5	<0.4	24		58	17		<0.1	22	<2	53	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															1	<0.05	<0.5	3.4
DP11-0.4	FILL (Clayey SILT)	0.4-0.5	25/06/2021	5	<0.4	28		21	15		<0.1	8	<2	40	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP12-0.05	FILL (Sandy GRAVEL)	0.05-0.15	21/06/2021	5	<0.4	21		29	15		<0.1	31	<2	79	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP12-0.4	Clayey SILT	0.4-0.5	21/06/2021	<4	<0.4	34		28	13		<0.1	6	<2	37	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP13-0.15	FILL (Sandy GRAVEL)	0.15-0.25	22/06/2021	<4	<0.4	18		32	7		<0.1	19	<2	15	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP14-0.11	FILL (Sandy GRAVEL)	0.11-0.21	24/06/2021	<4	<0.4	21		36	6		<0.1	74	<2	45	<0.2	<0.5	<1	<1	<25	<25	320	320	1700	260															<1	<0.05	<0.5	0.86
DP14-0.4	FILL (Clayey SILT)	0.4-0.5	24/06/2021	6	<0.4	23	<1	27	11		<0.1	5	<2	8	<2	<5	<10	<10	<250	<250	3300	3300	9100	1600	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<2	64	<0.5	<5	194
DP14-0.9	Clayey SILT	0.9-1.0	24/06/2021												<0.2	<0.5	<1	<1	36	36	3600	3200	4600	380															400	<5	<50	595
DP14-1.4	Clayey SILT	1.4-1.5	24/06/2021												<0.2	<0.5	<1	1	58	57	4000	3400	5300	470															660	<5	<50	913
DP14-1.9	SILT	1.9-2.0	24/06/2021												<0.2	<0.5	<1	<1	<25	<25	280	240	530	<100															38			
DP15-0.18	FILL (Sandy GRAVEL)	0.18-0.28	25/06/2021	6	<0.4	19		46	12		<0.1	10	<2	30	<0.2	<0.5	<1	<1	29	29	3700	3700	3400	330															5	<0.05	<0.5	14
DP15-0.4	Clayey SILT	0.4-0.5	25/06/2021												<0.2	<0.5	<1	<1	<25	<25	2500	2500	2200	240															7	<0.5	<0.5	10.7
DP15-1.4	Clayey SILT	1.4-1.5	25/06/2021												<0.2	<0.5	<1	<1	<25	<25	1200	1100	920	<100															3			
DP16-0.13	FILL (Clayey SILT)	0.13-0.23	23/06/2021	4	<0.4	27		41	7		<0.1	44	<2	32	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP16-0.4	Clayey SILT	0.4-0.5	23/06/2021	5	<0.4	40		24	13		<0.1	4	<2	16	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP17-0.15	FILL (Clayey SILT)	0.15-0.25	23/06/2021	7	<0.4	25		16	11		<0.1	2	<2	9	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP18-0.3	Clayey SILT	0.3-0.4	21/06/2021	<4	<0.4	24		22	8		<0.1	16	<2	21	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP19-0.25	FILL (Gravelly CLAY)	0.25-0.35	21/06/2021	5	<0.4	31		17	12		<0.1	18	<2	38	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	0.1	<0.5	0.57
DP20-0.2	Clayey SILT	0.2-0.3	21/06/2021	<4	<0.4	18		4	12		<0.1	2	<2	3	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	<0.05	<0.5	<0.05
DP21-0.8	FILL (Clayey SILT)	0.8-0.9	21/06/2021	4	<0.4	22		14	19		<0.1	12	<2	46	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	1.1	1.5	12
DP21-1.2	FILL (Clayey SILT)	1.2-1.3	21/06/2021	5	<0.4	24		14	18		<0.1	12	<2	49	<0.2	<0.5	<1	<1	<25	<25	<50	<50	<100	<100															<1	0.71	0.9	6.2

Notes

	A blank space indicates no test performed, or no criteria available
LORR	Limit of reporting has been raised due to high moisture content, insufficient sample or matrix interference
27	Represents exceedance of the NEPM EIL or ESL criteria

[1] Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, of the National Environmental Protection Measure (NEPM) for Assessment of Site Contamination, December 1999 (amendment 2013).
[2] CRC CARE, "Technical Report no. 10, Health screening levels for petroleum hydrocarbons in soil and groundwater", September 2011, Table B4: Soil Health Screening Levels for Direct Contact.

[A] EILs sourced from Olszowy et al. (1995), referenced in section 2.5.7 of Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, of the National Environmental Protection Measure (NEPM) for Assessment of Site Contamination, December 1999 (amendment 2013).

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Table D2
Comparison of Soil Laboratory Results to Waste Categorisation Criteria

Sample No	Strata	Sample Depth	Sample Date	pH	Metals																						Total Petroleum Hydrocarbons (TPH)					Monocyclic Aromatic Hydrocarbons (MAH)								Phenols						Halogenated Volatiles	Chlorinated Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Polycyclic Aromatic Hydrocarbons (PAH)			
					Arsenic		Cadmium		Chromium			Copper		Lead		Mercury		Molybdenum		Nickel		Selenium		Silver		Total Tin	Zinc		TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	TPH C10-C36	Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Total MAH	Total Fluoride	Cyanide	Total Phenols (Halogenated)		Total Phenols (Non-Halogenated)		Halogenated Volatiles (HVOLS)	Chlorinated Hydrocarbons (CHCs)	Organochlorine Pesticides (OCP)	Polychlorinated Biphenyls	Benzo(a)Pyrene (BaP)		Total PAH	
					Total	ASLP	Total	ASLP	Total Chromium	Total Chromium VI	ASLP Chromium VI	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	Total Tin	Total	ASLP	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	TPH C10-C36	Benzene	Toluene	Ethyl Benzene	Xylenes	Styrene	Total MAH	Total Fluoride	Cyanide	Total Phenols (Halogenated)	ASLP	Total Phenols (Non-Halogenated)	ASLP	Halogenated Volatiles (HVOLS)	Chlorinated Hydrocarbons (CHCs)	Organochlorine Pesticides (OCP)	Polychlorinated Biphenyls	Benzo(a)Pyrene (BaP)	ASLP BaP	Total PAH	ASLP PAH
				(pH units)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)
EPA Publication 1828.2 Criteria 1 July 2021																																																			
MAXIMUM FOR FILL MATERIAL[2]				**<4 - >10**	**20**		**3**			**1**		**100**		**300**		**1**		**40**		**60**		**10**		**10**		**50**	**200**		**100**				**1,000**	**1**					**7**	**450**	**50**	**1**		**60**			**1**	**1**	**2**	**1**		**20**	
MAXIMUM FOR CATEGORY D[2]					**500**	**0.5**	**100**	**0.1**		**500**	**2.5**	**5000**	**100**	**1500**	**0.5**	**75**	**0.05**	**1000**	**2.5**	**3000**	**1**	**10000**	**0.5**	**180**			**35000**	**150**	**325**				**5,000**	**4**	**3,200**	**1200**	**2400**	**120**		**10,000**	**2,500**			**560**	**7**			**10**	**2**	**20**	**0.0005**	**50**	
MAXIMUM FOR CATEGORY C					**500**	**1**	**100**	**0.2**		**500**	**5**	**5000**	**200**	**1500**	**1**	**75**	**0.1**	**1000**	**5**	**3000**	**2**	**10000**	**1**	**180**			**35000**	**300**	**650**				**10,000**	**4**	**3200**	**1200**	**2400**	**120**		**10000**	**2500**			**560**	**14**			**10**	**50**	**40**	**0.001**	**100**	
MAXIMUM FOR CATEGORY B[2]					**2,000**	**4**	**400**	**1**		**2,000**	**20**	**20,000**	**800**	**6,000**	**4**	**300**	**0**	**4,000**	**20**	**12,000**	**8**	**40,000**	**4**	**720**			**140,000**	**1,200**	**2,600**				**40,000**	**16**	**12,800**	**4,800**	**9,600**	**480**		**40,000**	**10,000**			**2,200**	**56**			**50**		**160**	**0**	**400**	
Fill																																																		
Nov-19																																																		
DP01-0.9	Fill (Silty CLAY)	0.9-1.0	11/11/2019	9.2	<5		<0.2			<1		24		23		<0.05		<5		19		<3		<5		<5	37		<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<1	<0.5	<1	400	<5	<0.5		<30		<0.5	<0.1	<0.05	<0.1	0.1		0.7	
DP01-3.9	Fill (Sandy CLAY)	3.9-4.0	11/11/2019		9		<0.2		29			31		120		0.11		<5		37		<3		<5		7	91		<20	<20	<50	<50	<50																	0.5		5.2	
DP02-0.2	Fill (Silty CLAY)	0.2-0.3	13/11/2019		9		0.2		28			35		89		0.13		<5		38		<3		<5		<5	120		<20	<20	100	89	189																	3.3		34	
DP02-0.5	Fill (Silty CLAY)	0.5-0.6	13/11/2019		10	<0.01	0.3	0.004	20		<0.01	29	<0.01	370	3.6	0.43	<0.001	<5	<0.01	17	0.02	<3	<0.01	<5	<0.01	7	100	0.28																										
DP02-3.9	Fill (Silty CLAY)	3.9-4.0	13/11/2019		9		3.8		39			480		290		0.21		<5		62		<3		<5		150	1800		<20	<20	73	<50	73																	1.4		17	
DP06-0.4	Fill (Gravelly SAND)	0.4-0.5	11/11/2019		<5		<0.2		22			29		18		<0.05		<5		59		<3		<5		<5	60		<20	<20	<50	<50	<50																	0.2		1.2	
DP06-1.9	Fill (Gravelly SAND)	1.9-2.0	11/11/2019																																																	
DP06-2.8	Fill (Gravelly SAND)	2.8-2.9	11/11/2019		<5		0.5		83			42		47		<0.05		<5		15		<3		<5		<5	63		<20	<20	180	220	400																	0.3		3.8	
DP07-1.9	Fill (Gravelly SAND)	1.9-2.0	11/11/2019	9.0	<5		<0.2			<1		18		13		<0.05		<5		13		<3		<5		<5	32		<20	<20	50	<50	50	<0.5	<0.5	<0.5	<1	<0.5	<1	300	<5	<0.5		<30		<0.5	<0.1	<0.05	<0.1	1.4		16	
DP07-4.9	Fill (Gravelly SAND)	4.9-5.0	11/11/2019		<5		<0.2		22			16		14		<0.05		<5		19		<3		<5		<5	39		<20	<20	200	84	284																	6.3	<0.001	68	0.003
DP08-0.5	Fill (Sandy GRAVEL)	0.5-0.6	11/11/2019		<5		<0.2		9			11		6		0.2		<5		37		<3		<5		<5	21		<20	<20	<50	<50	<50																	<0.1		<0.1	
Jun-21																																																		
DP10-0.35	FILL (Gravelly CLAY)	0.35-0.45	25/06/2021		5		<0.4		24			58		17		<0.1		<1		22		<2		<1		7	53		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		3.4	
DP11-0.4	FILL (Clayey SILT)	0.4-0.5	25/06/2021		5		<0.4		28			21		15		<0.1		<1		8		<2		<1		<1	40		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP12-0.05	FILL (Sandy GRAVEL)	0.05-0.15	21/06/2021		5		<0.4		21			29		15		<0.1		<1		31		<2		<1		<1	79		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP13-0.15	FILL (Sandy GRAVEL)	0.15-0.25	22/06/2021		<4		<0.4		18			32		7		<0.1		<1		19		<2		<1		5	15		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP14-0.11	FILL (Sandy GRAVEL)	0.11-0.21	24/06/2021		<4		<0.4		21			36		6		<0.1		<1		74		<2		<1		<1	45		<25	110	1400	700	2210	<0.2	<0.5	<1	<1		<1											<0.05		0.86	
DP14-0.4	FILL (Clayey SILT)	0.4-0.5	24/06/2021	8.2	6	<0.05	<0.4	<0.01	23		<1	27	<0.01	11	<0.03	<0.1	<0.00005	2		5	0.1	<2		<1		<1	8	<0.02	<250	1300	9600	3800	14700	<2	<5	<10	<10	<1	<10	190	<0.5	<10	<0.005	<600	<0.02	<1	<1	<1	<1	<0.5	<0.0005	130	
DP15-0.18	FILL (Sandy GRAVEL)	0.18-0.28	25/06/2021		6		<0.4		19			46		12		<0.1		<1		10		<2		<1		1	30		<25	1700	5500	410	7610	<0.2	<0.5	<1	<1		<1											<0.05		14	
DP16-0.13	FILL (Clayey SILT)	0.13-0.23	23/06/2021		4		<0.4		27			41		7		<0.1		<1		44		<2		<1		2	32		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP17-0.15	FILL (Clayey SILT)	0.15-0.25	23/06/2021		7		<0.4		25			16		11		<0.1		<1		2		<2		<1		<1	9		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP19-0.25	FILL (Gravelly CLAY)	0.25-0.35	21/06/2021		5		<0.4		31			17		12		<0.1		<1		18		<2		<1		1	38		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											0.1		0.57	
DP21-0.8	FILL (Clayey SILT)	0.8-0.9	21/06/2021		4		<0.4		22			14		19		<0.1		<1		12		<2		<1		1	46		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											1.1		12	
DP21-1.2	FILL (Clayey SILT)	1.2-1.3	21/06/2021		5		<0.4		24			14		18		<0.1		<1		12		<2		<1		1	49		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											0.71		6.2	
95% Upper Confidence Limit							1.2					57		140						36						39	476						4,600																	3.42		48.12	
Natural																																																		
Nov-19																																																		
DP03-0.9	Clayey SILT	0.9-1.0	11/11/2019		5		<0.2		26			24		11		<0.05		<5		<5		<3		<5		<5	55		<20	<20	<50	<50	<50																	<0.1		<0.1	
DP04-0.5	Silty CLAY	0.5-0.6	12/11/2019		9		<0.2		25			42		15		<0.05		<5		<5		<3		<5		<5	37		<20	<20	<50	<50	<50																	<0.1		<0.1	
DP05-0.9	Clayey SILT	0.9-1.0	11/11/2019		<5		<0.2		6			<5		7		<0.05		<5		<5		<3		<5		<5	<5		<20	<20	<50	<50	<50																	<0.1		<0.1	
DP09-1.9	Clayey SILT	1.9-2.0	11/11/2019		<5		<0.2		15			15		5		<0.05		<5		<5		<3		<5		<5	11		<20	<20	<50	<50	<50																	<0.1		<0.1	
Jun-21																																																		
DP12-0.4	Clayey SILT	0.4-0.5	21/06/2021		<4		<0.4		34			28		13		<0.1		<1		6		<2		<1		<1	37		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP14-0.9	Clayey SILT	0.9-1.0	24/06/2021																										<25	1700	6500	1000	9200	<0.2	<0.5	<1	<1		<1											<5		595	
DP14-1.4	Clayey SILT	1.4-1.5	24/06/2021																										<25	2100	7100	1300	10000	<0.2	<0.5	<1	1		1											<5		913	
DP14-1.9	SILT	1.9-2.0	24/06/2021																										<25	130	600	120	850	<0.2	<0.5	<1	<1		<1														
DP15-0.4	Clayey SILT	0.4-0.5	25/06/2021																										<25	1100	3600	290	5000	<0.2	<0.5	<1	<1		<1											<0.5		10.7	
DP15-1.4	Clayey SILT	1.4-1.5	25/06/2021																										<25	550	1500	110	2200	<0.2	<0.5	<1	<1		<1														
DP16-0.4	Clayey SILT	0.4-0.5	23/06/2021		5		<0.4		40			24		13		<0.1		<1		4		<2		<1		<1	16		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP18-0.3	Clayey SILT	0.3-0.4	21/06/2021		<4		<0.4		24			22		8		<0.1		<1		16		<2		<1		<1	21		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
DP20-0.2	Clayey SILT	0.2-0.3	21/06/2021		<4		<0.4		18			4		12		<0.1		<1		2		<2		<1		<1	3		<25	<50	<100	<100	<100	<0.2	<0.5	<1	<1		<1											<0.05		<0.05	
95% Upper Confidence Limit																											9,343																								1280	

Notes

	A blank space indicates no test performed, or no criteria available
LORR	Limit of reporting has been raised due to high moisture content, insufficient sample or matrix interference
ASLP	Australian Standard Leaching Procedure - Leachable Concentration
27	Represents exceedance of the EPA Fill Material criteria and sample tested classifies as Category C Contaminated Soil

References for Upper Limits

1) Environment Protection Authority of Victoria (EPA), June 2009: EPA Publication IWRG621 "*Soil Hazard Categorisation & Management*".
2) Environment Protection Authority of Victoria (EPA), March 2021: EPA Publication 1828.2 "*Waste disposal categories - characteristics and thresholds*", intended commencement date of 1 July 2021

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Table D3: Results for PAH Fingerprinting Method A (Correlation Coefficient)

	DP07-1.9	DP07-4.9	DP14-0.4	DP14-0.9	DP14-1.4	DP15-0.4	DP15-0.18	DP21-0.8	DP21-1.2					
Black Coal Tar 1	-0.04	-0.06	0.76	0.74	0.75	1.00	0.65	0.43	-0.04					
Black Coal Tar 2	0.56	0.53	0.32	0.27	0.27	-1.00	0.29	0.84	0.48					
Brown Coal Tar	-0.25	-0.26	0.94	0.96	0.96	1.00	0.65	0.30	-0.22					
Steelworks Tar 1	0.47	0.42	0.31	0.25	0.25	-1.00	0.31	0.69	0.23					
Steelworks Tar 2	0.37	0.36	0.30	0.45	0.47	1.00	-0.17	0.80	0.61					
Weathered Coal Tar	0.49	0.34	-0.09	-0.29	-0.30	-1.00	0.44	0.45	-0.05					
Creosote 1	0.60	0.51	-0.02	-0.23	-0.25	-1.00	0.14	0.60	0.15					
Creosote 2	0.19	0.14	0.78	0.59	0.57	-1.00	0.70	0.51	0.04					
Weathered Creosote	0.69	0.56	-0.29	-0.49	-0.50	-1.00	0.03	0.63	0.18					
Ash from Black Coal 1	0.95	0.93	-0.43	-0.41	-0.40	-1.00	-0.60	0.95	0.82					
Ash from Black Coal 2	0.94	0.92	-0.37	-0.41	-0.40	-1.00	-0.41	0.97	0.77					
Ash from Black Coal 3	0.91	0.89	-0.27	-0.26	-0.24	-1.00	-0.46	0.98	0.87					
Ash from Brown Coal	0.96	0.95	-0.41	-0.40	-0.39	-1.00	-0.59	0.96	0.90					
Bitumen	-0.06	0.02	0.93	0.85	0.84	1.00	0.62	0.21	0.09					
Coke	0.93	0.93	-0.42	-0.40	-0.39	-1.00	-0.61	0.98	0.93					
Waste Oil Petrol	0.28	0.28	0.54	-1.00	-1.00	#DIV/0!	-1.00	0.41	0.40					
Waste Oil Diesel	0.83	0.77	0.47	-1.00	-0.99	#DIV/0!	-1.00	0.79	0.71					

Notes

	Result ≥0.95 =	Very Good Fit
0.85 ≤	Result <0.95 =	Good Fit
0.75 ≤	Result <0.85 =	Reasonable Fit
	Result <0.75 =	Poor Fit

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.121/07/2021 9:42:54 AM
From File	FILL Input 11.19 & 06.21.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Cd

General Statistics

Total Number of Observations	22	Number of Distinct Observations	5
		Number of Missing Observations	2
Minimum	0.2	Mean	0.491
Maximum	3.8	Median	0.4
SD	0.746	Std. Error of Mean	0.159
Coefficient of Variation	1.519	Skewness	4.553

Normal GOF Test

Shapiro Wilk Test Statistic	0.321	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.458	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.764	95% Adjusted-CLT UCL (Chen-1995)	0.917
		95% Modified-t UCL (Johnson-1978)	0.79

Gamma GOF Test

A-D Test Statistic	3.789	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.758	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.406	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.188	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.681	k star (bias corrected MLE)	1.482
Theta hat (MLE)	0.292	Theta star (bias corrected MLE)	0.331
nu hat (MLE)	73.98	nu star (bias corrected)	65.23
MLE Mean (bias corrected)	0.491	MLE Sd (bias corrected)	0.403
		Approximate Chi Square Value (0.05)	47.64
Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	46.52

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.672	95% Adjusted Gamma UCL (use when n<50)	0.688

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.638	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Data Not Lognormal at 5% Significance Level	

54				Lilliefors Test Statistic	0.332		Lilliefors Lognormal GOF Test					
55				5% Lilliefors Critical Value	0.184		Data Not Lognormal at 5% Significance Level					
56				Data Not Lognormal at 5% Significance Level								
57												
58				Lognormal Statistics								
59				Minimum of Logged Data	-1.609				Mean of logged Data	-1.037		
60				Maximum of Logged Data	1.335				SD of logged Data	0.626		
61												
62				Assuming Lognormal Distribution								
63				95% H-UCL	0.576				90% Chebyshev (MVUE) UCL	0.608		
64				95% Chebyshev (MVUE) UCL	0.69				97.5% Chebyshev (MVUE) UCL	0.803		
65				99% Chebyshev (MVUE) UCL	1.027							
66												
67				Nonparametric Distribution Free UCL Statistics								
68				Data do not follow a Discernible Distribution (0.05)								
69												
70				Nonparametric Distribution Free UCLs								
71				95% CLT UCL	0.752				95% Jackknife UCL	0.764		
72				95% Standard Bootstrap UCL	0.744				95% Bootstrap-t UCL	1.821		
73				95% Hall's Bootstrap UCL	2.085				95% Percentile Bootstrap UCL	0.805		
74				95% BCA Bootstrap UCL	0.959							
75				90% Chebyshev(Mean, Sd) UCL	0.968				95% Chebyshev(Mean, Sd) UCL	1.184		
76				97.5% Chebyshev(Mean, Sd) UCL	1.484				99% Chebyshev(Mean, Sd) UCL	2.073		
77												
78				Suggested UCL to Use								
79				95% Chebyshev (Mean, Sd) UCL	1.184							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86												
87	Cu											
88												
89				General Statistics								
90				Total Number of Observations	22				Number of Distinct Observations	18		
91									Number of Missing Observations	2		
92				Minimum	11				Mean	48.45		
93				Maximum	480				Median	29		
94				SD	97.12				Std. Error of Mean	20.71		
95				Coefficient of Variation	2.004				Skewness	4.576		
96												
97				Normal GOF Test								
98				Shapiro Wilk Test Statistic	0.324		Shapiro Wilk GOF Test					
99				5% Shapiro Wilk Critical Value	0.911		Data Not Normal at 5% Significance Level					
100				Lilliefors Test Statistic	0.419		Lilliefors GOF Test					
101				5% Lilliefors Critical Value	0.184		Data Not Normal at 5% Significance Level					
102				Data Not Normal at 5% Significance Level								
103												
104				Assuming Normal Distribution								
105				95% Normal UCL					95% UCLs (Adjusted for Skewness)			
106				95% Student's-t UCL	84.08				95% Adjusted-CLT UCL (Chen-1995)	104.1		

107								95% Modified-t UCL (Johnson-1978)				87.45
108												
109					Gamma GOF Test							
110				A-D Test Statistic	3.002			Anderson-Darling Gamma GOF Test				
111				5% A-D Critical Value	0.768			Data Not Gamma Distributed at 5% Significance Level				
112				K-S Test Statistic	0.304			Kolmogorov-Smirnov Gamma GOF Test				
113				5% K-S Critical Value	0.19			Data Not Gamma Distributed at 5% Significance Level				
114					Data Not Gamma Distributed at 5% Significance Level							
115												
116					Gamma Statistics							
117				k hat (MLE)	1.114			k star (bias corrected MLE)				0.993
118				Theta hat (MLE)	43.48			Theta star (bias corrected MLE)				48.81
119				nu hat (MLE)	49.03			nu star (bias corrected)				43.68
120				MLE Mean (bias corrected)	48.45			MLE Sd (bias corrected)				48.63
121								Approximate Chi Square Value (0.05)				29.52
122				Adjusted Level of Significance	0.0386			Adjusted Chi Square Value				28.65
123												
124					Assuming Gamma Distribution							
125				95% Approximate Gamma UCL (use when n>=50))	71.69			95% Adjusted Gamma UCL (use when n<50)				73.86
126												
127					Lognormal GOF Test							
128				Shapiro Wilk Test Statistic	0.782			Shapiro Wilk Lognormal GOF Test				
129				5% Shapiro Wilk Critical Value	0.911			Data Not Lognormal at 5% Significance Level				
130				Lilliefors Test Statistic	0.183			Lilliefors Lognormal GOF Test				
131				5% Lilliefors Critical Value	0.184			Data appear Lognormal at 5% Significance Level				
132					Data appear Approximate Lognormal at 5% Significance Level							
133												
134					Lognormal Statistics							
135				Minimum of Logged Data	2.398			Mean of logged Data				3.369
136				Maximum of Logged Data	6.174			SD of logged Data				0.765
137												
138					Assuming Lognormal Distribution							
139				95% H-UCL	56.94			90% Chebyshev (MVUE) UCL				58.56
140				95% Chebyshev (MVUE) UCL	67.74			97.5% Chebyshev (MVUE) UCL				80.49
141				99% Chebyshev (MVUE) UCL	105.5							
142												
143					Nonparametric Distribution Free UCL Statistics							
144					Data appear to follow a Discernible Distribution at 5% Significance Level							
145												
146					Nonparametric Distribution Free UCLs							
147				95% CLT UCL	82.51			95% Jackknife UCL				84.08
148				95% Standard Bootstrap UCL	80.56			95% Bootstrap-t UCL				272.3
149				95% Hall's Bootstrap UCL	237.4			95% Percentile Bootstrap UCL				89.36
150				95% BCA Bootstrap UCL	111.9							
151				90% Chebyshev(Mean, Sd) UCL	110.6			95% Chebyshev(Mean, Sd) UCL				138.7
152				97.5% Chebyshev(Mean, Sd) UCL	177.8			99% Chebyshev(Mean, Sd) UCL				254.5
153												
154					Suggested UCL to Use							
155				95% H-UCL	56.94							
156												
157					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
158					Recommendations are based upon data size, data distribution, and skewness.							
159					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							

160	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
161												
162	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
163	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
164	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
165	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
166												
167												
168	Pb											
169												
170	General Statistics											
171				Total Number of Observations	22			Number of Distinct Observations	16			
172								Number of Missing Observations	2			
173				Minimum	6			Mean	51.82			
174				Maximum	370			Median	15			
175				SD	95.07			Std. Error of Mean	20.27			
176				Coefficient of Variation	1.835			Skewness	2.747			
177												
178	Normal GOF Test											
179				Shapiro Wilk Test Statistic	0.516			Shapiro Wilk GOF Test				
180				5% Shapiro Wilk Critical Value	0.911			Data Not Normal at 5% Significance Level				
181				Lilliefors Test Statistic	0.392			Lilliefors GOF Test				
182				5% Lilliefors Critical Value	0.184			Data Not Normal at 5% Significance Level				
183	Data Not Normal at 5% Significance Level											
184												
185	Assuming Normal Distribution											
186				95% Normal UCL				95% UCLs (Adjusted for Skewness)				
187				95% Student's-t UCL	86.7			95% Adjusted-CLT UCL (Chen-1995)	97.84			
188								95% Modified-t UCL (Johnson-1978)	88.67			
189												
190	Gamma GOF Test											
191				A-D Test Statistic	2.733			Anderson-Darling Gamma GOF Test				
192				5% A-D Critical Value	0.789			Data Not Gamma Distributed at 5% Significance Level				
193				K-S Test Statistic	0.338			Kolmogorov-Smirnov Gamma GOF Test				
194				5% K-S Critical Value	0.194			Data Not Gamma Distributed at 5% Significance Level				
195	Data Not Gamma Distributed at 5% Significance Level											
196												
197	Gamma Statistics											
198				k hat (MLE)	0.681			k star (bias corrected MLE)	0.619			
199				Theta hat (MLE)	76.05			Theta star (bias corrected MLE)	83.74			
200				nu hat (MLE)	29.98			nu star (bias corrected)	27.23			
201				MLE Mean (bias corrected)	51.82			MLE Sd (bias corrected)	65.87			
202								Approximate Chi Square Value (0.05)	16.33			
203				Adjusted Level of Significance	0.0386			Adjusted Chi Square Value	15.7			
204												
205	Assuming Gamma Distribution											
206				95% Approximate Gamma UCL (use when n>=50))	86.41			95% Adjusted Gamma UCL (use when n<50)	89.88			
207												
208	Lognormal GOF Test											
209				Shapiro Wilk Test Statistic	0.827			Shapiro Wilk Lognormal GOF Test				
210				5% Shapiro Wilk Critical Value	0.911			Data Not Lognormal at 5% Significance Level				
211				Lilliefors Test Statistic	0.266			Lilliefors Lognormal GOF Test				
212				5% Lilliefors Critical Value	0.184			Data Not Lognormal at 5% Significance Level				

213	Data Not Lognormal at 5% Significance Level										
214											
215	Lognormal Statistics										
216				Minimum of Logged Data	1.792				Mean of logged Data	3.057	
217				Maximum of Logged Data	5.914				SD of logged Data	1.168	
218											
219	Assuming Lognormal Distribution										
220				95% H-UCL	86.39				90% Chebyshev (MVUE) UCL	74.76	
221				95% Chebyshev (MVUE) UCL	90.47				97.5% Chebyshev (MVUE) UCL	112.3	
222				99% Chebyshev (MVUE) UCL	155.1						
223											
224	Nonparametric Distribution Free UCL Statistics										
225	Data do not follow a Discernible Distribution (0.05)										
226											
227	Nonparametric Distribution Free UCLs										
228				95% CLT UCL	85.16				95% Jackknife UCL	86.7	
229				95% Standard Bootstrap UCL	83.4				95% Bootstrap-t UCL	169.3	
230				95% Hall's Bootstrap UCL	206.3				95% Percentile Bootstrap UCL	87	
231				95% BCA Bootstrap UCL	98.09						
232				90% Chebyshev(Mean, Sd) UCL	112.6				95% Chebyshev(Mean, Sd) UCL	140.2	
233				97.5% Chebyshev(Mean, Sd) UCL	178.4				99% Chebyshev(Mean, Sd) UCL	253.5	
234											
235	Suggested UCL to Use										
236				95% Chebyshev (Mean, Sd) UCL	140.2						
237											
238	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
239	Recommendations are based upon data size, data distribution, and skewness.										
240	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
241	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
242											
243											
244	Ni										
245											
246	General Statistics										
247				Total Number of Observations	22				Number of Distinct Observations	18	
248									Number of Missing Observations	2	
249				Minimum	2				Mean	26.05	
250				Maximum	74				Median	19	
251				SD	19.53				Std. Error of Mean	4.164	
252				Coefficient of Variation	0.75				Skewness	1.111	
253											
254	Normal GOF Test										
255				Shapiro Wilk Test Statistic	0.883				Shapiro Wilk GOF Test		
256				5% Shapiro Wilk Critical Value	0.911				Data Not Normal at 5% Significance Level		
257				Lilliefors Test Statistic	0.232				Lilliefors GOF Test		
258				5% Lilliefors Critical Value	0.184				Data Not Normal at 5% Significance Level		
259	Data Not Normal at 5% Significance Level										
260											
261	Assuming Normal Distribution										
262				95% Normal UCL					95% UCLs (Adjusted for Skewness)		
263				95% Student's-t UCL	33.21				95% Adjusted-CLT UCL (Chen-1995)	33.95	
264									95% Modified-t UCL (Johnson-1978)	33.38	
265											

266	Gamma GOF Test										
267				A-D Test Statistic	0.284	Anderson-Darling Gamma GOF Test					
268				5% A-D Critical Value	0.757	Detected data appear Gamma Distributed at 5% Significance Level					
269				K-S Test Statistic	0.151	Kolmogorov-Smirnov Gamma GOF Test					
270				5% K-S Critical Value	0.188	Detected data appear Gamma Distributed at 5% Significance Level					
271	Detected data appear Gamma Distributed at 5% Significance Level										
272											
273	Gamma Statistics										
274				k hat (MLE)	1.827			k star (bias corrected MLE)	1.608		
275				Theta hat (MLE)	14.25			Theta star (bias corrected MLE)	16.19		
276				nu hat (MLE)	80.39			nu star (bias corrected)	70.77		
277				MLE Mean (bias corrected)	26.05			MLE Sd (bias corrected)	20.54		
278								Approximate Chi Square Value (0.05)	52.4		
279				Adjusted Level of Significance	0.0386			Adjusted Chi Square Value	51.22		
280											
281	Assuming Gamma Distribution										
282			95% Approximate Gamma UCL (use when n>=50)		35.18		95% Adjusted Gamma UCL (use when n<50)		35.99		
283											
284	Lognormal GOF Test										
285				Shapiro Wilk Test Statistic	0.955	Shapiro Wilk Lognormal GOF Test					
286				5% Shapiro Wilk Critical Value	0.911	Data appear Lognormal at 5% Significance Level					
287				Lilliefors Test Statistic	0.108	Lilliefors Lognormal GOF Test					
288				5% Lilliefors Critical Value	0.184	Data appear Lognormal at 5% Significance Level					
289	Data appear Lognormal at 5% Significance Level										
290											
291	Lognormal Statistics										
292				Minimum of Logged Data	0.693			Mean of logged Data	2.962		
293				Maximum of Logged Data	4.304			SD of logged Data	0.859		
294											
295	Assuming Lognormal Distribution										
296				95% H-UCL	43.83			90% Chebyshev (MVUE) UCL	43.9		
297				95% Chebyshev (MVUE) UCL	51.4			97.5% Chebyshev (MVUE) UCL	61.8		
298				99% Chebyshev (MVUE) UCL	82.23						
299											
300	Nonparametric Distribution Free UCL Statistics										
301	Data appear to follow a Discernible Distribution at 5% Significance Level										
302											
303	Nonparametric Distribution Free UCLs										
304				95% CLT UCL	32.89			95% Jackknife UCL	33.21		
305				95% Standard Bootstrap UCL	32.87			95% Bootstrap-t UCL	35.22		
306				95% Hall's Bootstrap UCL	33.88			95% Percentile Bootstrap UCL	33.14		
307				95% BCA Bootstrap UCL	33.77						
308				90% Chebyshev(Mean, Sd) UCL	38.54			95% Chebyshev(Mean, Sd) UCL	44.2		
309				97.5% Chebyshev(Mean, Sd) UCL	52.05			99% Chebyshev(Mean, Sd) UCL	67.48		
310											
311	Suggested UCL to Use										
312				95% Adjusted Gamma UCL	35.99						
313											
314	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
315	Recommendations are based upon data size, data distribution, and skewness.										
316	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
317	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
318											

Sn

General Statistics			
Total Number of Observations	22	Number of Distinct Observations	5
		Number of Missing Observations	2
Minimum	1	Mean	10.09
Maximum	150	Median	5
SD	31.34	Std. Error of Mean	6.681
Coefficient of Variation	3.105	Skewness	4.648

Normal GOF Test			
Shapiro Wilk Test Statistic	0.277	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.494	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.59	95% Adjusted-CLT UCL (Chen-1995)	28.15
		95% Modified-t UCL (Johnson-1978)	22.69

Gamma GOF Test			
A-D Test Statistic	3.435	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.802	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.366	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.196	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	0.525	k star (bias corrected MLE)	0.483
Theta hat (MLE)	19.23	Theta star (bias corrected MLE)	20.88
nu hat (MLE)	23.08	nu star (bias corrected)	21.27
MLE Mean (bias corrected)	10.09	MLE Sd (bias corrected)	14.51
		Approximate Chi Square Value (0.05)	11.79
Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	11.27

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	18.2	95% Adjusted Gamma UCL (use when n<50)	19.05

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.755	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.23	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.184	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics			
Minimum of Logged Data	0	Mean of logged Data	1.11
Maximum of Logged Data	5.011	SD of logged Data	1.207

Assuming Lognormal Distribution

372				95% H-UCL	13.42			90% Chebyshev (MVUE) UCL	11.32			
373				95% Chebyshev (MVUE) UCL	13.74			97.5% Chebyshev (MVUE) UCL	17.11			
374				99% Chebyshev (MVUE) UCL	23.73							
375												
376					Nonparametric Distribution Free UCL Statistics							
377					Data do not follow a Discernible Distribution (0.05)							
378												
379					Nonparametric Distribution Free UCLs							
380				95% CLT UCL	21.08			95% Jackknife UCL	21.59			
381				95% Standard Bootstrap UCL	20.81			95% Bootstrap-t UCL	113.3			
382				95% Hall's Bootstrap UCL	81.28			95% Percentile Bootstrap UCL	23.23			
383				95% BCA Bootstrap UCL	30.27							
384				90% Chebyshev(Mean, Sd) UCL	30.13			95% Chebyshev(Mean, Sd) UCL	39.21			
385				97.5% Chebyshev(Mean, Sd) UCL	51.81			99% Chebyshev(Mean, Sd) UCL	76.56			
386												
387					Suggested UCL to Use							
388				95% Chebyshev (Mean, Sd) UCL	39.21							
389												
390					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
391					Recommendations are based upon data size, data distribution, and skewness.							
392					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
393					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
394												
395												
396	Zn											
397												
398					General Statistics							
399				Total Number of Observations	22			Number of Distinct Observations	21			
400								Number of Missing Observations	2			
401				Minimum	8			Mean	127.6			
402				Maximum	1800			Median	42.5			
403				SD	374.6			Std. Error of Mean	79.87			
404				Coefficient of Variation	2.936			Skewness	4.646			
405												
406					Normal GOF Test							
407				Shapiro Wilk Test Statistic	0.283			Shapiro Wilk GOF Test				
408				5% Shapiro Wilk Critical Value	0.911			Data Not Normal at 5% Significance Level				
409				Lilliefors Test Statistic	0.463			Lilliefors GOF Test				
410				5% Lilliefors Critical Value	0.184			Data Not Normal at 5% Significance Level				
411					Data Not Normal at 5% Significance Level							
412												
413					Assuming Normal Distribution							
414				95% Normal UCL				95% UCLs (Adjusted for Skewness)				
415				95% Student's-t UCL	265			95% Adjusted-CLT UCL (Chen-1995)	343.5			
416								95% Modified-t UCL (Johnson-1978)	278.2			
417												
418					Gamma GOF Test							
419				A-D Test Statistic	3.34			Anderson-Darling Gamma GOF Test				
420				5% A-D Critical Value	0.795			Data Not Gamma Distributed at 5% Significance Level				
421				K-S Test Statistic	0.309			Kolmogorov-Smirnov Gamma GOF Test				
422				5% K-S Critical Value	0.194			Data Not Gamma Distributed at 5% Significance Level				
423					Data Not Gamma Distributed at 5% Significance Level							
424												

425	Gamma Statistics										
426				k hat (MLE)	0.611			k star (bias corrected MLE)	0.558		
427				Theta hat (MLE)	209			Theta star (bias corrected MLE)	228.8		
428				nu hat (MLE)	26.86			nu star (bias corrected)	24.53		
429				MLE Mean (bias corrected)	127.6			MLE Sd (bias corrected)	170.9		
430								Approximate Chi Square Value (0.05)	14.25		
431				Adjusted Level of Significance	0.0386			Adjusted Chi Square Value	13.67		
432											
433	Assuming Gamma Distribution										
434			95% Approximate Gamma UCL (use when n>=50))		219.6			95% Adjusted Gamma UCL (use when n<50)	229		
435											
436	Lognormal GOF Test										
437				Shapiro Wilk Test Statistic	0.84			Shapiro Wilk Lognormal GOF Test			
438				5% Shapiro Wilk Critical Value	0.911			Data Not Lognormal at 5% Significance Level			
439				Lilliefors Test Statistic	0.161			Lilliefors Lognormal GOF Test			
440				5% Lilliefors Critical Value	0.184			Data appear Lognormal at 5% Significance Level			
441	Data appear Approximate Lognormal at 5% Significance Level										
442											
443	Lognormal Statistics										
444				Minimum of Logged Data	2.079			Mean of logged Data	3.839		
445				Maximum of Logged Data	7.496			SD of logged Data	1.071		
446											
447	Assuming Lognormal Distribution										
448				95% H-UCL	154.4			90% Chebyshev (MVUE) UCL	141.4		
449				95% Chebyshev (MVUE) UCL	169.5			97.5% Chebyshev (MVUE) UCL	208.5		
450				99% Chebyshev (MVUE) UCL	285						
451											
452	Nonparametric Distribution Free UCL Statistics										
453	Data appear to follow a Discernible Distribution at 5% Significance Level										
454											
455	Nonparametric Distribution Free UCLs										
456				95% CLT UCL	259			95% Jackknife UCL	265		
457				95% Standard Bootstrap UCL	259.3			95% Bootstrap-t UCL	1513		
458				95% Hall's Bootstrap UCL	837.2			95% Percentile Bootstrap UCL	284.8		
459				95% BCA Bootstrap UCL	372.1						
460				90% Chebyshev(Mean, Sd) UCL	367.2			95% Chebyshev(Mean, Sd) UCL	475.7		
461				97.5% Chebyshev(Mean, Sd) UCL	626.4			99% Chebyshev(Mean, Sd) UCL	922.3		
462											
463	Suggested UCL to Use										
464				95% Chebyshev (Mean, Sd) UCL	475.7						
465											
466	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
467	Recommendations are based upon data size, data distribution, and skewness.										
468	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
469	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
470											
471											
472	TPH C10-C36										
473											
474	General Statistics										
475				Total Number of Observations	21			Number of Distinct Observations	9		
476								Number of Missing Observations	3		
477				Minimum	50			Mean	1267		

478				Maximum	14700				Median	100	
479				SD	3504				Std. Error of Mean	764.6	
480				Coefficient of Variation	2.765				Skewness	3.407	
481											
482				Normal GOF Test							
483				Shapiro Wilk Test Statistic	0.399			Shapiro Wilk GOF Test			
484				5% Shapiro Wilk Critical Value	0.908			Data Not Normal at 5% Significance Level			
485				Lilliefors Test Statistic	0.455			Lilliefors GOF Test			
486				5% Lilliefors Critical Value	0.188			Data Not Normal at 5% Significance Level			
487				Data Not Normal at 5% Significance Level							
488											
489				Assuming Normal Distribution							
490				95% Normal UCL				95% UCLs (Adjusted for Skewness)			
491				95% Student's-t UCL	2586			95% Adjusted-CLT UCL (Chen-1995)		3132	
492								95% Modified-t UCL (Johnson-1978)		2681	
493											
494				Gamma GOF Test							
495				A-D Test Statistic	4.138			Anderson-Darling Gamma GOF Test			
496				5% A-D Critical Value	0.838			Data Not Gamma Distributed at 5% Significance Level			
497				K-S Test Statistic	0.39			Kolmogorov-Smirnov Gamma GOF Test			
498				5% K-S Critical Value	0.204			Data Not Gamma Distributed at 5% Significance Level			
499				Data Not Gamma Distributed at 5% Significance Level							
500											
501				Gamma Statistics							
502				k hat (MLE)	0.341			k star (bias corrected MLE)		0.324	
503				Theta hat (MLE)	3720			Theta star (bias corrected MLE)		3914	
504				nu hat (MLE)	14.31			nu star (bias corrected)		13.6	
505				MLE Mean (bias corrected)	1267			MLE Sd (bias corrected)		2227	
506								Approximate Chi Square Value (0.05)		6.298	
507				Adjusted Level of Significance	0.0383			Adjusted Chi Square Value		5.919	
508											
509				Assuming Gamma Distribution							
510				95% Approximate Gamma UCL (use when n>=50))	2737			95% Adjusted Gamma UCL (use when n<50)		2912	
511											
512				Lognormal GOF Test							
513				Shapiro Wilk Test Statistic	0.705			Shapiro Wilk Lognormal GOF Test			
514				5% Shapiro Wilk Critical Value	0.908			Data Not Lognormal at 5% Significance Level			
515				Lilliefors Test Statistic	0.349			Lilliefors Lognormal GOF Test			
516				5% Lilliefors Critical Value	0.188			Data Not Lognormal at 5% Significance Level			
517				Data Not Lognormal at 5% Significance Level							
518											
519				Lognormal Statistics							
520				Minimum of Logged Data	3.912			Mean of logged Data		5.163	
521				Maximum of Logged Data	9.596			SD of logged Data		1.622	
522											
523				Assuming Lognormal Distribution							
524				95% H-UCL	2325			90% Chebyshev (MVUE) UCL		1318	
525				95% Chebyshev (MVUE) UCL	1655			97.5% Chebyshev (MVUE) UCL		2122	
526				99% Chebyshev (MVUE) UCL	3040						
527											
528				Nonparametric Distribution Free UCL Statistics							
529				Data do not follow a Discernible Distribution (0.05)							
530											

531	Nonparametric Distribution Free UCLs										
532				95% CLT UCL	2525			95% Jackknife UCL	2586		
533				95% Standard Bootstrap UCL	2483			95% Bootstrap-t UCL	9272		
534				95% Hall's Bootstrap UCL	10955			95% Percentile Bootstrap UCL	2629		
535				95% BCA Bootstrap UCL	3364						
536				90% Chebyshev(Mean, Sd) UCL	3561			95% Chebyshev(Mean, Sd) UCL	4600		
537				97.5% Chebyshev(Mean, Sd) UCL	6042			99% Chebyshev(Mean, Sd) UCL	8875		
538											
539	Suggested UCL to Use										
540				95% Chebyshev (Mean, Sd) UCL	4600						
541											
542	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
543	Recommendations are based upon data size, data distribution, and skewness.										
544	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
545	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
546											
547											
548	BaP										
549											
550	General Statistics										
551				Total Number of Observations	11			Number of Distinct Observations	9		
552								Number of Missing Observations	13		
553				Minimum	0.1			Mean	1.401		
554				Maximum	6.3			Median	0.71		
555				SD	1.872			Std. Error of Mean	0.564		
556				Coefficient of Variation	1.336			Skewness	2.16		
557											
558	Normal GOF Test										
559				Shapiro Wilk Test Statistic	0.715			Shapiro Wilk GOF Test			
560				5% Shapiro Wilk Critical Value	0.85			Data Not Normal at 5% Significance Level			
561				Lilliefors Test Statistic	0.318			Lilliefors GOF Test			
562				5% Lilliefors Critical Value	0.251			Data Not Normal at 5% Significance Level			
563	Data Not Normal at 5% Significance Level										
564											
565	Assuming Normal Distribution										
566				95% Normal UCL				95% UCLs (Adjusted for Skewness)			
567				95% Student's-t UCL	2.424			95% Adjusted-CLT UCL (Chen-1995)	2.722		
568								95% Modified-t UCL (Johnson-1978)	2.485		
569											
570	Gamma GOF Test										
571				A-D Test Statistic	0.311			Anderson-Darling Gamma GOF Test			
572				5% A-D Critical Value	0.761			Detected data appear Gamma Distributed at 5% Significance Level			
573				K-S Test Statistic	0.17			Kolmogorov-Smirnov Gamma GOF Test			
574				5% K-S Critical Value	0.265			Detected data appear Gamma Distributed at 5% Significance Level			
575	Detected data appear Gamma Distributed at 5% Significance Level										
576											
577	Gamma Statistics										
578				k hat (MLE)	0.783			k star (bias corrected MLE)	0.63		
579				Theta hat (MLE)	1.789			Theta star (bias corrected MLE)	2.223		
580				nu hat (MLE)	17.23			nu star (bias corrected)	13.86		
581				MLE Mean (bias corrected)	1.401			MLE Sd (bias corrected)	1.765		
582								Approximate Chi Square Value (0.05)	6.478		
583				Adjusted Level of Significance	0.0278			Adjusted Chi Square Value	5.675		

584											
585						Assuming Gamma Distribution						
586					95% Approximate Gamma UCL (use when n>=50)	2.998			95% Adjusted Gamma UCL (use when n<50)		3.422
587											
588						Lognormal GOF Test					
589					Shapiro Wilk Test Statistic	0.96			Shapiro Wilk Lognormal GOF Test		
590					5% Shapiro Wilk Critical Value	0.85			Data appear Lognormal at 5% Significance Level		
591					Lilliefors Test Statistic	0.106			Lilliefors Lognormal GOF Test		
592					5% Lilliefors Critical Value	0.251			Data appear Lognormal at 5% Significance Level		
593						Data appear Lognormal at 5% Significance Level					
594											
595						Lognormal Statistics					
596					Minimum of Logged Data	-2.303			Mean of logged Data		-0.423
597					Maximum of Logged Data	1.841			SD of logged Data		1.354
598											
599						Assuming Lognormal Distribution					
600					95% H-UCL	8.04			90% Chebyshev (MVUE) UCL		3.32
601					95% Chebyshev (MVUE) UCL	4.175			97.5% Chebyshev (MVUE) UCL		5.361
602					99% Chebyshev (MVUE) UCL	7.692					
603											
604						Nonparametric Distribution Free UCL Statistics					
605						Data appear to follow a Discernible Distribution at 5% Significance Level					
606											
607						Nonparametric Distribution Free UCLs					
608					95% CLT UCL	2.329			95% Jackknife UCL		2.424
609					95% Standard Bootstrap UCL	2.27			95% Bootstrap-t UCL		4.203
610					95% Hall's Bootstrap UCL	6.898			95% Percentile Bootstrap UCL		2.328
611					95% BCA Bootstrap UCL	2.638					
612					90% Chebyshev(Mean, Sd) UCL	3.094			95% Chebyshev(Mean, Sd) UCL		3.861
613					97.5% Chebyshev(Mean, Sd) UCL	4.925			99% Chebyshev(Mean, Sd) UCL		7.015
614											
615						Suggested UCL to Use					
616					95% Adjusted Gamma UCL	3.422					
617											
618						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.					
619						Recommendations are based upon data size, data distribution, and skewness.					
620						These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).					
621						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.					
622											
623											
624	Total PAH										
625											
626						General Statistics					
627					Total Number of Observations	15			Number of Distinct Observations		15
628									Number of Missing Observations		9
629					Minimum	0.57			Mean		20.86
630					Maximum	130			Median		6.2
631					SD	34.98			Std. Error of Mean		9.032
632					Coefficient of Variation	1.677			Skewness		2.612
633											
634						Normal GOF Test					
635					Shapiro Wilk Test Statistic	0.62			Shapiro Wilk GOF Test		
636					5% Shapiro Wilk Critical Value	0.881			Data Not Normal at 5% Significance Level		

637				Lilliefors Test Statistic	0.344	Lilliefors GOF Test						
638				5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level						
639				Data Not Normal at 5% Significance Level								
640												
641				Assuming Normal Distribution								
642			95% Normal UCL			95% UCLs (Adjusted for Skewness)						
643				95% Student's-t UCL	36.77	95% Adjusted-CLT UCL (Chen-1995)	42.23					
644						95% Modified-t UCL (Johnson-1978)	37.79					
645												
646				Gamma GOF Test								
647				A-D Test Statistic	0.472	Anderson-Darling Gamma GOF Test						
648				5% A-D Critical Value	0.789	Detected data appear Gamma Distributed at 5% Significance Level						
649				K-S Test Statistic	0.177	Kolmogorov-Smirnov Gamma GOF Test						
650				5% K-S Critical Value	0.233	Detected data appear Gamma Distributed at 5% Significance Level						
651				Detected data appear Gamma Distributed at 5% Significance Level								
652												
653				Gamma Statistics								
654				k hat (MLE)	0.55	k star (bias corrected MLE)	0.484					
655				Theta hat (MLE)	37.95	Theta star (bias corrected MLE)	43.08					
656				nu hat (MLE)	16.49	nu star (bias corrected)	14.53					
657				MLE Mean (bias corrected)	20.86	MLE Sd (bias corrected)	29.98					
658						Approximate Chi Square Value (0.05)	6.934					
659				Adjusted Level of Significance	0.0324	Adjusted Chi Square Value	6.297					
660												
661				Assuming Gamma Distribution								
662			95% Approximate Gamma UCL (use when n>=50)		43.71	95% Adjusted Gamma UCL (use when n<50)	48.12					
663												
664				Lognormal GOF Test								
665				Shapiro Wilk Test Statistic	0.962	Shapiro Wilk Lognormal GOF Test						
666				5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level						
667				Lilliefors Test Statistic	0.116	Lilliefors Lognormal GOF Test						
668				5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level						
669				Data appear Lognormal at 5% Significance Level								
670												
671				Lognormal Statistics								
672				Minimum of Logged Data	-0.562	Mean of logged Data	1.899					
673				Maximum of Logged Data	4.868	SD of logged Data	1.658					
674												
675				Assuming Lognormal Distribution								
676				95% H-UCL	149.3	90% Chebyshev (MVUE) UCL	54.71					
677				95% Chebyshev (MVUE) UCL	69.48	97.5% Chebyshev (MVUE) UCL	89.99					
678				99% Chebyshev (MVUE) UCL	130.3							
679												
680				Nonparametric Distribution Free UCL Statistics								
681				Data appear to follow a Discernible Distribution at 5% Significance Level								
682												
683				Nonparametric Distribution Free UCLs								
684				95% CLT UCL	35.72	95% Jackknife UCL	36.77					
685				95% Standard Bootstrap UCL	34.82	95% Bootstrap-t UCL	72.22					
686				95% Hall's Bootstrap UCL	96.82	95% Percentile Bootstrap UCL	36.61					
687				95% BCA Bootstrap UCL	43.09							
688				90% Chebyshev(Mean, Sd) UCL	47.96	95% Chebyshev(Mean, Sd) UCL	60.23					
689				97.5% Chebyshev(Mean, Sd) UCL	77.27	99% Chebyshev(Mean, Sd) UCL	110.7					

	A	B	C	D	E	F	G	H	I	J	K	L
690												
691						Suggested UCL to Use						
692					95% Adjusted Gamma UCL	48.12						
693												
694	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
695	Recommendations are based upon data size, data distribution, and skewness.											
696	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
697	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
698												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.115/07/2021 10:04:08 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH C10-C36

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	9
Minimum	850	Mean	5450
Maximum	10000	Median	5000
SD	4083	Std. Error of Mean	1826
Coefficient of Variation	0.749	Skewness	0.0929

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.905	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9343	95% Adjusted-CLT UCL (Chen-1995)	8535
		95% Modified-t UCL (Johnson-1978)	9356

Gamma GOF Test

A-D Test Statistic	0.31	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.686	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.236	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.361	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.599	k star (bias corrected MLE)	0.773
Theta hat (MLE)	3408	Theta star (bias corrected MLE)	7051
nu hat (MLE)	15.99	nu star (bias corrected)	7.729
MLE Mean (bias corrected)	5450	MLE Sd (bias corrected)	6199
		Approximate Chi Square Value (0.05)	2.579
Adjusted Level of Significance	0.0086	Adjusted Chi Square Value	1.471

Assuming Gamma Distribution

54	95% Approximate Gamma UCL (use when n>=50))				16332		95% Adjusted Gamma UCL (use when n<50)				28643	
55												
56	Lognormal GOF Test											
57	Shapiro Wilk Test Statistic				0.908		Shapiro Wilk Lognormal GOF Test					
58	5% Shapiro Wilk Critical Value				0.762		Data appear Lognormal at 5% Significance Level					
59	Lilliefors Test Statistic				0.198		Lilliefors Lognormal GOF Test					
60	5% Lilliefors Critical Value				0.343		Data appear Lognormal at 5% Significance Level					
61	Data appear Lognormal at 5% Significance Level											
62												
63	Lognormal Statistics											
64	Minimum of Logged Data				6.745		Mean of logged Data				8.259	
65	Maximum of Logged Data				9.21		SD of logged Data				1.041	
66												
67	Assuming Lognormal Distribution											
68	95% H-UCL				93449		90% Chebyshev (MVUE) UCL				13526	
69	95% Chebyshev (MVUE) UCL				17027		97.5% Chebyshev (MVUE) UCL				21886	
70	99% Chebyshev (MVUE) UCL				31431							
71												
72	Nonparametric Distribution Free UCL Statistics											
73	Data appear to follow a Discernible Distribution at 5% Significance Level											
74												
75	Nonparametric Distribution Free UCLs											
76	95% CLT UCL				8454		95% Jackknife UCL				9343	
77	95% Standard Bootstrap UCL				8040		95% Bootstrap-t UCL				10709	
78	95% Hall's Bootstrap UCL				9521		95% Percentile Bootstrap UCL				8170	
79	95% BCA Bootstrap UCL				8120							
80	90% Chebyshev(Mean, Sd) UCL				10928		95% Chebyshev(Mean, Sd) UCL				13410	
81	97.5% Chebyshev(Mean, Sd) UCL				16854		99% Chebyshev(Mean, Sd) UCL				23619	
82												
83	Suggested UCL to Use											
84	95% Student's-t UCL				9343							
85												
86	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
87	Recommendations are based upon data size, data distribution, and skewness.											
88	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
89	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
90												
91												
92	Total PAH											
93												
94	General Statistics											
95	Total Number of Observations				3		Number of Distinct Observations				3	
96							Number of Missing Observations				11	
97	Minimum				7		Mean				505	
98	Maximum				913		Median				595	
99	SD				459.7		Std. Error of Mean				265.4	
100	Coefficient of Variation				0.91		Skewness				-0.847	
101												
102	Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use											
103	guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.											
104	For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).											
105	Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1											
106												

	A	B	C	D	E	F	G	H	I	J	K	L
107					Normal GOF Test							
108					Shapiro Wilk Test Statistic	0.971		Shapiro Wilk GOF Test				
109					5% Shapiro Wilk Critical Value	0.767		Data appear Normal at 5% Significance Level				
110					Lilliefors Test Statistic	0.244		Lilliefors GOF Test				
111					5% Lilliefors Critical Value	0.425		Data appear Normal at 5% Significance Level				
112					Data appear Normal at 5% Significance Level							
113												
114					Assuming Normal Distribution							
115				95% Normal UCL				95% UCLs (Adjusted for Skewness)				
116					95% Student's-t UCL	1280				95% Adjusted-CLT UCL (Chen-1995)	802.8	
117										95% Modified-t UCL (Johnson-1978)	1258	
118												
119					Gamma GOF Test							
120					Not Enough Data to Perform GOF Test							
121												
122					Gamma Statistics							
123					k hat (MLE)	0.535				k star (bias corrected MLE)	N/A	
124					Theta hat (MLE)	943.4				Theta star (bias corrected MLE)	N/A	
125					nu hat (MLE)	3.212				nu star (bias corrected)	N/A	
126					MLE Mean (bias corrected)	N/A				MLE Sd (bias corrected)	N/A	
127										Approximate Chi Square Value (0.05)	N/A	
128					Adjusted Level of Significance	N/A				Adjusted Chi Square Value	N/A	
129												
130					Assuming Gamma Distribution							
131					95% Approximate Gamma UCL (use when n>=50))	N/A				95% Adjusted Gamma UCL (use when n<50)	N/A	
132												
133					Lognormal GOF Test							
134					Shapiro Wilk Test Statistic	0.815		Shapiro Wilk Lognormal GOF Test				
135					5% Shapiro Wilk Critical Value	0.767		Data appear Lognormal at 5% Significance Level				
136					Lilliefors Test Statistic	0.357		Lilliefors Lognormal GOF Test				
137					5% Lilliefors Critical Value	0.425		Data appear Lognormal at 5% Significance Level				
138					Data appear Lognormal at 5% Significance Level							
139												
140					Lognormal Statistics							
141					Minimum of Logged Data	1.946				Mean of logged Data	5.05	
142					Maximum of Logged Data	6.817				SD of logged Data	2.697	
143												
144					Assuming Lognormal Distribution							
145					95% H-UCL	9.652E+32				90% Chebyshev (MVUE) UCL	3098	
146					95% Chebyshev (MVUE) UCL	4123				97.5% Chebyshev (MVUE) UCL	5545	
147					99% Chebyshev (MVUE) UCL	8339						
148												
149					Nonparametric Distribution Free UCL Statistics							
150					Data appear to follow a Discernible Distribution at 5% Significance Level							
151												
152					Nonparametric Distribution Free UCLs							
153					95% CLT UCL	941.5				95% Jackknife UCL	1280	
154					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL	N/A	
155					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL	N/A	
156					95% BCA Bootstrap UCL	N/A						
157					90% Chebyshev(Mean, Sd) UCL	1301				95% Chebyshev(Mean, Sd) UCL	1662	
158					97.5% Chebyshev(Mean, Sd) UCL	2162				99% Chebyshev(Mean, Sd) UCL	3146	
159												

	A	B	C	D	E	F	G	H	I	J	K	L
160	Suggested UCL to Use											
161				95% Student's-t UCL		1280						
162												
163	Recommended UCL exceeds the maximum observation											
164												
165	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
166	Recommendations are based upon data size, data distribution, and skewness.											
167	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
168	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
169												
170	Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
171	reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.											
172												

Appendix E

Laboratory Reports

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CERTIFICATE OF ANALYSIS 26537

Client Details

Client	Douglas Partners
Attention	Dean Woods
Address	231 Normanby Road, PO Box 5051, South Melbourne, VIC, 3205

Sample Details

Your Reference	**95409.02**
Number of Samples	38 Soil
Date samples received	28/06/2021
Date completed instructions received	28/06/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	05/07/2021
Date of Issue	05/07/2021

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Results Approved By
Pamela Adams, Laboratory Manager, Melbourne

Authorised By



Pamela Adams, Laboratory Manager

VOCs in soil		
Our Reference		26537-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	01/07/2021
Vinyl Chloride	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
methylene chloride	mg/kg	<2
trans-1,2-dichloroethene	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
chloroform	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
trichloroethene	mg/kg	<1
Toluene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
Total +ve MAHs	mg/kg	<70
Total +ve Chlorinated Hydrocarbons	mg/kg	<1
Total +ve Other Chlorinated Hydrocarbons	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	75
Surrogate Dibromofluoromethane	%	108
Surrogate Toluene-d_8	%	99
Surrogate 4-Bromofluorobenzene	%	99

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		26537-1	26537-3	26537-5	26537-6	26537-7
Your Reference	UNITS	DP10-0.35	DP11-0.4	DP12-0.05	DP12-0.4	DP13-0.15
Depth		0.35-0.45	0.4-0.5	0.05-0.15	0.4-0.5	0.15-0.25
Date Sampled		25/06/2021	25/06/2021	21/06/2021	21/06/2021	22/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	1	<1	<1	<1	<1
Total BTEX	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	101	93	93	92

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		26537-11	26537-12	26537-16	26537-21	26537-22
Your Reference	UNITS	DP14-0.11	DP14-0.4	DP15-0.18	DP16-0.13	DP16-0.4
Depth		0.11-0.21	0.4-0.5	0.18-0.28	0.13-0.23	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021	23/06/2021	23/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
vTRH C_6 - C_9	mg/kg	<25	<250	<25	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<250	29	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<250	29	<25	<25
Benzene	mg/kg	<0.2	<2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<10	<1	<1	<1
m+p-xylene	mg/kg	<2	<20	<2	<2	<2
o-Xylene	mg/kg	<1	<10	<1	<1	<1
Naphthalene	mg/kg	<1	64	5	<1	<1
Total BTEX	mg/kg	<1	<10	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<10	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	75	92	92	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		26537-25	26537-29	26537-31	26537-34	26537-37
Your Reference	UNITS	DP17-0.15	DP18-0.3	DP19-0.25	DP20-0.2	DP21-0.8
Depth		0.15-0.25	0.3-0.4	0.25-0.35	0.2-0.3	0.8-0.9
Date Sampled		23/06/2021	21/06/2021	21/06/2021	21/06/2021	21/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total BTEX	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	91	98	91	78

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		26537-38
Your Reference	UNITS	DP21-1.2
Depth		1.2-1.3
Date Sampled		21/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	01/07/2021
vTRH C_6 - C_9	mg/kg	<25
vTRH C_6 - C_{10}	mg/kg	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total BTEX	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	93

TRH Soil C10-C40 NEPM						
Our Reference		26537-1	26537-3	26537-5	26537-6	26537-7
Your Reference	UNITS	DP10-0.35	DP11-0.4	DP12-0.05	DP12-0.4	DP13-0.15
Depth		0.35-0.45	0.4-0.5	0.05-0.15	0.4-0.5	0.15-0.25
Date Sampled		25/06/2021	25/06/2021	21/06/2021	21/06/2021	22/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	109	101	101	99	102

TRH Soil C10-C40 NEPM						
Our Reference		26537-11	26537-12	26537-16	26537-21	26537-22
Your Reference	UNITS	DP14-0.11	DP14-0.4	DP15-0.18	DP16-0.13	DP16-0.4
Depth		0.11-0.21	0.4-0.5	0.18-0.28	0.13-0.23	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021	23/06/2021	23/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
TRH C_{10} - C_{14}	mg/kg	110	1,300	1,700	<50	<50
TRH C_{15} - C_{28}	mg/kg	1,400	9,600	5,500	<100	<100
TRH C_{29} - C_{36}	mg/kg	700	3,800	410	<100	<100
Total +ve TRH (C10-C36)	mg/kg	2,200	15,000	7,600	<50	<50
TRH >C_{10} -C_{16}	mg/kg	320	3,300	3,700	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	320	3,300	3,700	<50	<50
TRH >C_{16} -C_{34}	mg/kg	1,700	9,100	3,400	<100	<100
TRH >C_{34} -C_{40}	mg/kg	260	1,600	330	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	2,300	14,000	7,500	<50	<50
Surrogate o-Terphenyl	%	113	#	#	95	95

TRH Soil C10-C40 NEPM						
Our Reference		26537-25	26537-29	26537-31	26537-34	26537-37
Your Reference	UNITS	DP17-0.15	DP18-0.3	DP19-0.25	DP20-0.2	DP21-0.8
Depth		0.15-0.25	0.3-0.4	0.25-0.35	0.2-0.3	0.8-0.9
Date Sampled		23/06/2021	21/06/2021	21/06/2021	21/06/2021	21/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	91	93	93	93	98

TRH Soil C10-C40 NEPM		
Our Reference		26537-38
Your Reference	UNITS	DP21-1.2
Depth		1.2-1.3
Date Sampled		21/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	02/07/2021
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	96

PAHs in Soil						
Our Reference		26537-1	26537-3	26537-5	26537-6	26537-7
Your Reference	UNITS	DP10-0.35	DP11-0.4	DP12-0.05	DP12-0.4	DP13-0.15
Depth		0.35-0.45	0.4-0.5	0.05-0.15	0.4-0.5	0.15-0.25
Date Sampled		25/06/2021	25/06/2021	21/06/2021	21/06/2021	22/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Naphthalene	mg/kg	1.3	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.4	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	3.4	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	132	134	138	138	134

PAHs in Soil						
Our Reference		26537-11	26537-12	26537-16	26537-21	26537-22
Your Reference	UNITS	DP14-0.11	DP14-0.4	DP15-0.18	DP16-0.13	DP16-0.4
Depth		0.11-0.21	0.4-0.5	0.18-0.28	0.13-0.23	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021	23/06/2021	23/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Naphthalene	mg/kg	0.2	51	3.9	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	18	1.6	<0.1	<0.1
Fluorene	mg/kg	<0.1	10	2.6	<0.1	<0.1
Phenanthrene	mg/kg	0.2	25	4.9	<0.1	<0.1
Anthracene	mg/kg	<0.1	7.4	<2	<0.1	<0.1
Fluoranthene	mg/kg	0.1	8.2	0.4	<0.1	<0.1
Pyrene	mg/kg	0.2	7.7	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.5	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.86	130	14	<0.05	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	132	110	138	122	122

PAHs in Soil						
Our Reference		26537-25	26537-29	26537-31	26537-34	26537-37
Your Reference	UNITS	DP17-0.15	DP18-0.3	DP19-0.25	DP20-0.2	DP21-0.8
Depth		0.15-0.25	0.3-0.4	0.25-0.35	0.2-0.3	0.8-0.9
Date Sampled		23/06/2021	21/06/2021	21/06/2021	21/06/2021	21/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Fluoranthene	mg/kg	<0.1	<0.1	0.1	<0.1	2.2
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	2.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	1.2
Chrysene	mg/kg	<0.1	<0.1	0.1	<0.1	0.8
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	1.6
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	1.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.6
Total +ve PAH's	mg/kg	<0.05	<0.05	0.57	<0.05	12
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.6
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.6
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.6
Surrogate p-Terphenyl-d_{14}	%	126	116	124	126	126

PAHs in Soil		
Our Reference		26537-38
Your Reference	UNITS	DP21-1.2
Depth		1.2-1.3
Date Sampled		21/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	02/07/2021
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	0.2
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	0.1
Fluoranthene	mg/kg	1
Pyrene	mg/kg	1.1
Benzo(a)anthracene	mg/kg	0.6
Chrysene	mg/kg	0.5
Benzo(b,j&k)fluoranthene	mg/kg	1.0
Benzo(a)pyrene	mg/kg	0.71
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4
Total +ve PAH's	mg/kg	6.2
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.9
Benzo(a)pyrene TEQ calc (Half)	mg/kg	1
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	1.0
Surrogate p-Terphenyl-d_{14}	%	122

Speciated Phenols in Soil		
Our Reference		26537-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	02/07/2021
Phenol	mg/kg	<2
2-Chlorophenol	mg/kg	<2
2-Methylphenol	mg/kg	<2
3/4-Methylphenol	mg/kg	<4
2-Nitrophenol	mg/kg	<2
2,4-Dimethylphenol	mg/kg	<2
2,4-Dichlorophenol	mg/kg	<0.5
2,6-Dichlorophenol	mg/kg	<0.5
2,4,5-Trichlorophenol	mg/kg	<0.5
2,4,6-Trichlorophenol	mg/kg	<0.5
2,4-Dinitrophenol	mg/kg	<40
4-Nitrophenol	mg/kg	<40
2,3,4,6-Tetrachlorophenol	mg/kg	<1
2-Methyl-4,6-Dinitrophenol	mg/kg	<20
Pentachlorophenol	mg/kg	<1
4-Chloro-3-Methylphenol	mg/kg	<2
2,3,4,5-Tetrachlorophenol	mg/kg	<1
2,3,5,6-Tetrachlorophenol	mg/kg	<1
2-Cyclohexyl-4,6-Dinitrophenol	mg/kg	<200
Dinoseb	mg/kg	<50
Total +ve Phenols Halogenated	mg/kg	<10
Total +ve Phenols non-Halogenated	mg/kg	<600
Surrogate Phenol-d_6	%	86
Surrogate 2-fluorophenol	%	68

Organochlorine Pesticides in soil		
Our Reference		26537-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	02/07/2021
alpha-BHC	mg/kg	<1
Hexachlorobenzene	mg/kg	<1
beta-BHC	mg/kg	<1
gamma-BHC	mg/kg	<1
Heptachlor	mg/kg	<1
delta-BHC	mg/kg	<1
Aldrin	mg/kg	<1
Heptachlor Epoxide	mg/kg	<1
gamma-Chlordane	mg/kg	<1
alpha-chlordane	mg/kg	<1
Endosulfan I	mg/kg	<1
pp-DDE	mg/kg	<1
Dieldrin	mg/kg	<1
Endrin	mg/kg	<1
Endosulfan II	mg/kg	<1
pp-DDD	mg/kg	<1
Endrin Aldehyde	mg/kg	<1
pp-DDT	mg/kg	<1
Endosulfan Sulphate	mg/kg	<1
Methoxychlor	mg/kg	<1
Total +ve Organochlorine Pesticides	mg/kg	<1
Total +ve report other OC	mg/kg	<1
Tot +ve report Chlordane	mg/kg	<1
Total +ve reported Aldrin + Dieldrin	mg/kg	<1
Total +ve reported DDT+DDD+DDE	mg/kg	<1
Surrogate 2-chlorophenol-d4	%	64

PCBs in Soil		
Our Reference		26537-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	01/07/2021
Date analysed	-	02/07/2021
Aroclor 1016	mg/kg	<1
Aroclor 1221	mg/kg	<1
Aroclor 1232	mg/kg	<1
Aroclor 1242	mg/kg	<1
Aroclor 1248	mg/kg	<1
Aroclor 1254	mg/kg	<1
Aroclor 1260	mg/kg	<1
Total +ve PCBs (1016-1260)	mg/kg	<1
Surrogate 2-fluorobiphenyl	%	100

VIC EPA Metals in soil						
Our Reference		26537-1	26537-3	26537-5	26537-6	26537-7
Your Reference	UNITS	DP10-0.35	DP11-0.4	DP12-0.05	DP12-0.4	DP13-0.15
Depth		0.35-0.45	0.4-0.5	0.05-0.15	0.4-0.5	0.15-0.25
Date Sampled		25/06/2021	25/06/2021	21/06/2021	21/06/2021	22/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Arsenic	mg/kg	5	5	5	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	24	28	21	34	18
Copper	mg/kg	58	21	29	28	32
Lead	mg/kg	17	15	15	13	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	22	8	31	6	19
Tin	mg/kg	7	<1	<1	<1	5
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	53	40	79	37	15

VIC EPA Metals in soil						
Our Reference		26537-11	26537-12	26537-16	26537-21	26537-22
Your Reference	UNITS	DP14-0.11	DP14-0.4	DP15-0.18	DP16-0.13	DP16-0.4
Depth		0.11-0.21	0.4-0.5	0.18-0.28	0.13-0.23	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021	23/06/2021	23/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Arsenic	mg/kg	<4	6	6	4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	21	23	19	27	40
Copper	mg/kg	36	27	46	41	24
Lead	mg/kg	6	11	12	7	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	2	<1	<1	<1
Nickel	mg/kg	74	5	10	44	4
Tin	mg/kg	<1	<1	1	2	<1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	45	8	30	32	16

VIC EPA Metals in soil						
Our Reference		26537-25	26537-29	26537-31	26537-34	26537-37
Your Reference	UNITS	DP17-0.15	DP18-0.3	DP19-0.25	DP20-0.2	DP21-0.8
Depth		0.15-0.25	0.3-0.4	0.25-0.35	0.2-0.3	0.8-0.9
Date Sampled		23/06/2021	21/06/2021	21/06/2021	21/06/2021	21/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Arsenic	mg/kg	7	<4	5	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	25	24	31	18	22
Copper	mg/kg	16	22	17	4	14
Lead	mg/kg	11	8	12	12	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	2	16	18	2	12
Tin	mg/kg	<1	<1	1	<1	1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	9	21	38	3	46

VIC EPA Metals in soil		
Our Reference		26537-38
Your Reference	UNITS	DP21-1.2
Depth		1.2-1.3
Date Sampled		21/06/2021
Type of sample		Soil
Date digested	-	02/07/2021
Date analysed	-	02/07/2021
Arsenic	mg/kg	5
Cadmium	mg/kg	<0.4
Chromium	mg/kg	24
Copper	mg/kg	14
Lead	mg/kg	18
Mercury	mg/kg	<0.1
Molybdenum	mg/kg	<1
Nickel	mg/kg	12
Tin	mg/kg	1
Selenium	mg/kg	<2
Silver	mg/kg	<1
Zinc	mg/kg	49

Miscellaneous Inorg - soil		
Our Reference		26537-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date prepared	-	02/07/2021
Date analysed	-	03/07/2021
Total Cyanide	mg/kg	<0.5
Hexavalent Chromium, Cr^{6+}	mg/kg	<1
Total Fluoride	mg/kg	190
pH 1:5 soil:water	pH Units	8.2

Moisture						
Our Reference		26537-1	26537-3	26537-5	26537-6	26537-7
Your Reference	UNITS	DP10-0.35	DP11-0.4	DP12-0.05	DP12-0.4	DP13-0.15
Depth		0.35-0.45	0.4-0.5	0.05-0.15	0.4-0.5	0.15-0.25
Date Sampled		25/06/2021	25/06/2021	21/06/2021	21/06/2021	22/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Moisture	%	17	13	14	12	21

Moisture						
Our Reference		26537-11	26537-12	26537-16	26537-21	26537-22
Your Reference	UNITS	DP14-0.11	DP14-0.4	DP15-0.18	DP16-0.13	DP16-0.4
Depth		0.11-0.21	0.4-0.5	0.18-0.28	0.13-0.23	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021	23/06/2021	23/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Moisture	%	12	9.7	17	12	13

Moisture						
Our Reference		26537-25	26537-29	26537-31	26537-34	26537-37
Your Reference	UNITS	DP17-0.15	DP18-0.3	DP19-0.25	DP20-0.2	DP21-0.8
Depth		0.15-0.25	0.3-0.4	0.25-0.35	0.2-0.3	0.8-0.9
Date Sampled		23/06/2021	21/06/2021	21/06/2021	21/06/2021	21/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021	02/07/2021	02/07/2021	02/07/2021
Moisture	%	12	14	11	12	6.9

Moisture		
Our Reference		26537-38
Your Reference	UNITS	DP21-1.2
Depth		1.2-1.3
Date Sampled		21/06/2021
Type of sample		Soil
Date prepared	-	01/07/2021
Date analysed	-	02/07/2021
Moisture	%	8.2

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
Inorg-024	Hexavalent Chromium (Cr6+) - determined colourimetrically by discrete analyser. Water samples are filtered on receipt prior to analysis.
Inorg-026/53	Fluoride by caustic fusion and determined by ion selective electrode (ISE) analysis.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

Method ID	Methodology Summary
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Note, For OCs the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Note, the Total +ve Cresols or Phenols PQL is reflective of the lowest individual PQL and is therefore" Total +ve Cresols or Phenols" is simply a sum of the positive individual Cresols or Phenols.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Vinyl Chloride	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
methylene chloride	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,2-dichloroethene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
1,1,1-trichloroethane	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
carbon tetrachloride	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
trichloroethene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Toluene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
chlorobenzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,1,2-tetrachloroethane	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	0.1	Org-023	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d_8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	26537-16
Date extracted	-			01/07/2021	12	01/07/2021	01/07/2021		01/07/2021	01/07/2021
Date analysed	-			01/07/2021	12	01/07/2021	01/07/2021		01/07/2021	01/07/2021
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	12	<250	<250	0	86	87
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	12	<250	<250	0	86	87
Benzene	mg/kg	0.2	Org-023	<0.2	12	<2	<2	0	76	88
Toluene	mg/kg	0.5	Org-023	<0.5	12	<5	<5	0	86	89
Ethylbenzene	mg/kg	1	Org-023	<1	12	<10	<10	0	87	86
m+p-xylene	mg/kg	2	Org-023	<2	12	<20	<20	0	90	86
o-Xylene	mg/kg	1	Org-023	<1	12	<10	<10	0	88	86
Naphthalene	mg/kg	1	Org-023	<1	12	64	72	12	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	103	12	75	89	17	101	90

QUALITY CONTROL: TRH Soil C10-C40 NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	26537-16
Date extracted	-			01/07/2021	12	01/07/2021	01/07/2021		01/07/2021	01/07/2021
Date analysed	-			02/07/2021	12	02/07/2021	02/07/2021		02/07/2021	02/07/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	12	1300	1300	0	83	75
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	12	9600	9700	1	78	118
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	12	3800	4000	5	101	#
TRH >C_{10}-C_{16}	mg/kg	50	Org-020	<50	12	3300	3400	3	83	75
TRH >C_{16}-C_{34}	mg/kg	100	Org-020	<100	12	9100	9300	2	78	118
TRH >C_{34}-C_{40}	mg/kg	100	Org-020	<100	12	1600	1900	17	101	#
Surrogate o-Terphenyl	%		Org-020	99	12	#	#		100	#

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	26537-21
Date extracted	-			01/07/2021	12	01/07/2021	01/07/2021		01/07/2021	01/07/2021
Date analysed	-			02/07/2021	12	02/07/2021	02/07/2021		02/07/2021	02/07/2021
Naphthalene	mg/kg	0.1	Org-022	<0.1	12	51	50	2	100	96
Acenaphthylene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	106	104
Acenaphthene	mg/kg	0.1	Org-022	<0.1	12	18	18	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022	<0.1	12	10	10	0	94	89
Phenanthrene	mg/kg	0.1	Org-022	<0.1	12	25	24	4	98	89
Anthracene	mg/kg	0.1	Org-022	<0.1	12	7.4	7.4	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022	<0.1	12	8.2	8.1	1	106	96
Pyrene	mg/kg	0.1	Org-022	<0.1	12	7.7	7.6	1	112	104
Benzo(a)anthracene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	82	76
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022	<0.2	12	<2	<2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022	<0.05	12	<0.5	<0.5	0	84	88
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022	<0.1	12	<1	<1	0	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	118	12	110	104	6	120	124

QUALITY CONTROL: Speciated Phenols in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
Phenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	124	[NT]
2-Chlorophenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	106	[NT]
2-Methylphenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	118	[NT]
3/4-Methylphenol	mg/kg	0.4	Org-022	<0.4	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	84	[NT]
2,4,5-Trichlorophenol	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	mg/kg	4	Org-022	<4	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	mg/kg	4	Org-022	<4	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,3,4,6-Tetrachlorophenol	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methyl-4,6-Dinitrophenol	mg/kg	2	Org-022	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	60	[NT]
4-Chloro-3-Methylphenol	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,3,4,5-Tetrachlorophenol	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,3,5,6-Tetrachlorophenol	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Cyclohexyl-4,6-Dinitrophenol	mg/kg	20	Org-022	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dinoseb	mg/kg	5	Org-022	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Phenol-d_6	%		Org-022	108	[NT]	[NT]	[NT]	[NT]	118	[NT]
Surrogate 2-fluorophenol	%		Org-022	94	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
alpha-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	64	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	68	[NT]
gamma-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
delta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	130	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
alpha-chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Dieldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Methoxychlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	90	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
Aroclor 1016	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Aroclor 1260	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022	88	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: VIC EPA Metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	26537-21
Date digested	-			02/07/2021	16	02/07/2021	02/07/2021		02/07/2021	02/07/2021
Date analysed	-			02/07/2021	16	02/07/2021	02/07/2021		02/07/2021	02/07/2021
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	16	6	5	18	110	106
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	16	<0.4	<0.4	0	111	98
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	16	19	17	11	116	101
Copper	mg/kg	1	Metals-020 ICP-AES	<1	16	46	35	27	106	103
Lead	mg/kg	1	Metals-020 ICP-AES	<1	16	12	10	18	108	93
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	16	<0.1	<0.1	0	104	100
Molybdenum	mg/kg	1	Metals-020 ICP-AES	<1	16	<1	<1	0	110	99
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	16	10	6	50	109	92
Tin	mg/kg	1	Metals-020 ICP-AES	<1	16	1	<1	0	108	94
Selenium	mg/kg	2	Metals-020 ICP-AES	<2	16	<2	<2	0	103	93
Silver	mg/kg	1	Metals-020 ICP-AES	<1	16	<1	<1	0	108	107
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	16	30	25	18	111	95

QUALITY CONTROL: Miscellaneous Inorg - soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			02/07/2021	12	02/07/2021	02/07/2021		02/07/2021	[NT]
Date analysed	-			03/07/2021	12	03/07/2021	03/07/2021		03/07/2021	[NT]
Total Cyanide	mg/kg	0.5	Inorg-014	<0.5	12	<0.5	[NT]		100	[NT]
Hexavalent Chromium, Cr^{6+}	mg/kg	1	Inorg-024	<1	12	<1	[NT]		106	[NT]
Total Fluoride	mg/kg	50	Inorg-026/53	<50	12	190	120	45	86	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	12	8.2	8.2	0	100	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

VOC & BTEX: PQL has been raised due to the high concentration of analytes in the sample/s, resulting in the sample/s requiring dilution.

TRH: # Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

METALS: The RPD for duplicate results 26537-16 for Nickel is accepted due to the inhomogeneous nature of the sample/s. Triplicate analysis confirms this and is available upon request.

SVOC: PQL has been raised for 26537-12 due to the high concentration of analytes in the sample/s, resulting in the sample/s requiring dilution.

PQL has been raised for 26537-16 for Anthracene due to interference from analytes (other than those being tested) in the sample/s.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02	**Suburb:**	Northcote	**To:**	*Envirolab Services*
Project Manager:	Dean Woods	**Order Number:**	150942 **Sampler:** FS		*22 Research Drive, Croydon VIC 3136*
Email:	Dean.Woods@douglaspartners.com.au , felix.smalley@douglaspartners.com.au			**Attn:**	*Pamela Adams*
Turnaround time:	☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			**Contact:**	*(03) 9763 2500 melbourne@envirolab.com.au*
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☑ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: EPA IWRG621 Screen	Metals*, TRH, PAH									Notes/ Preservation/ Additional Requirements
1	DP10-0.35	0.35	0.45	25.06.21	S	G		X									
2	DP11-0.15	0.15	0.25	25.06.21	S	G											
3	DP11-0.4	0.4	0.5	25.06.21	S	G		X									
4	DP11-0.7	0.7	0.8	25.06.21	S	G											
5	DP12-0.05	0.05	0.15	21.06.21	S	G		X									
6	DP12-0.4	0.4	0.5	21.06.21	S	G		X									
7	DP13-0.15	0.15	0.25	22.06.21	S	G		X									
8	DP13-0.4	0.4	0.5	22.06.21	S	G											
9	DP13-1.0	1	1.1	22.06.21	S	G											
10	DP13-1.7	1.7	1.8	22.06.21	S	G											
11	DP14-0.11	0.11	0.21	24.06.21	S	G		X									
12	DP14-0.4	0.4	0.5	24.06.21	S	G	X										
13	DP14-0.9	0.9	1	24.06.21	S	G											
14	DP14-1.4	1.4	1.5	24.06.21	S	G											

Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

Job No: 26537
Date Received: 25/6/21
Time Received: 1:15pm
Received By: KW
Temp: Cool/Ambient 12.1°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Metals to analyse:	*Metals as per EPA Screen but w total Cr		
Number of samples in container:		**Transported to laboratory by:**	
Send results to:	Douglas Partners Pty Ltd		
Address:	231 Normanby Road, South Melbourne VI	**Phone:** (03) 9673 3500	
Relinquished by:		**Date:**	**Signed:**

LAB RECEIPT	
Lab Ref. No:	26537
Received by:	ELS - KW
Date & Time:	1:15pm 28/6/21
Signed:	

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02	**Suburb:**	Northcote	**To:**	*Envirolab Services*
Project Manager:	Dean Woods	**Order Number:**		**Dispatch date:**	*22 Research Drive, Croydon VIC 3136*

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: EPA IWRG621 Screen	Analytes: Metals*, TRH, PAH	Notes/ Preservation/ Additional Requirements
KW 28/6 15	DP14-2.0 (1-9)	2	2.1	24.06.21	S	G			
16	DP15-0.18	0.18	0.28	25.06.21	S	G		X	
17	DP15-0.4	0.4	0.5	25.06.21	S	G			
18	DP15-0.9	0.9	1	25.06.21	S	G			
19	DP15-1.4	1.4	1.5	25.06.21	S	G			
20	DP15-2.6	2.6	2.7	25.06.21	S	G			
21	DP16-0.13	0.13	0.23	23.06.21	S	G		X	
22	DP16-0.4	0.4	0.5	23.06.21	S	G		X	
23	DP16-1.0	1	1.1	23.06.21	S	G			
24	DP16-2.0	2	2.1	23.06.21	S	G			
25	DP17-0.15	0.15	0.25	23.06.21	S	G		X	
26	DP17-0.5	0.5	0.6	23.06.21	S	G			
27	DP17-0.9	0.9	1	23.06.21	S	G			
28	DP17-1.4	2.4	2.5	23.06.21	S	G			
29	DP18-0.3	0.3	0.4	21.06.21	S	G		X	
30	DP18-0.9	0.9	1	21.06.21	S	G			
31	DP19-0.25	0.25	0.35	21.06.21	S	G		X	
32	DP19-0.75	0.75	0.85	21.06.21	S	G			

Project Manager:	231 Normanby Road, South Melbourn		**Dispatch date:**

Sample ID	pled	Sample Type	Container Type	Analytes	

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02				**Suburb:**	Northcote									**To:**	*Envirolab Services*		
Lab ID	Location / Other ID	Depth From	Depth To	Date Samp	S - soil W - water	G - glass P - plastic	EPA IWRG621 Screen	Metals*, TRH, PAH										Notes/ Preservation/ Additional Requirements
37	DP19-1.3	1.3	1.4	21.06.21	S	G												
34	DP20-0.2	0.2	0.3	21.06.21	S	G		X										
35	DP20-1.0	1	1.1	21.06.21	S	G												
36	DP21-0.1	0.1	0.2	21.06.21	S	G												
37	DP21-0.8	0.8	0.9	21.06.21	S	G		X										
38	DP21-1.2	1.2	1.3	21.06.21	S	G		X										

Karley Spence

From: Felix Smalley <Felix.Smalley@douglaspartners.com.au>
Sent: Tuesday, 29 June 2021 9:07 AM
To: Karley Spence
Cc: Dean Woods
Subject: RE: Sample Receipt for 26537 95409.02

CAUTION: This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Hi Karley,

Hi Karley,

The jar, with DP14-1.9, is correct.

Cheers,

Felix Smalley | Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
231 Normanby Road South Melbourne VIC 3205 | PO Box 5051 South Melbourne VIC 3205
P: 03 9673 3500 | M: 0412 574 373 |
E: Felix.Smalley@douglaspartners.com.au





To find information on our COVID-19 measures, please visit douglaspartners.com.au/news/covid-19

This email is confidential. If you are not the intended recipient, please notify us immediately and be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited. Please note that the company does not make any commitment through emails not confirmed by fax or letter.

From: Karley Spence <KSpence@envirolab.com.au>
Sent: Monday, 28 June 2021 7:08 PM
To: Douglas Partners Melbourne <melbourne@douglaspartners.com.au>; Felix Smalley <Felix.Smalley@douglaspartners.com.au>; Dean Woods <Dean.Woods@douglaspartners.com.au>
Subject: Sample Receipt for 26537 95409.02

Hi Felix and Dean,

Sample DP14_2.0 was not received but DP14_1.9 received instead.
Please advise if COC or jar ID is correct.

Thank you,

Please refer to attached for:
a copy of the COC/paperwork received from you
a copy of our Sample Receipt Advice (SRA)
Please open and read the SRA as it contains important information.
Please let the lab know immediately if there are any issues.

Results will be available by 6.30pm on the date indicated.

Enquiries should be made directly to:
melbourne@envirolab.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**26537**
Client ID	Douglas Partners
Project Reference	95409.02
Date Issued	05/07/2021

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Precision (as %RPD)	26537-16	Nickel	50% RPD fails internal acceptance criteria
Spike Recovery %	26537-16	*Surrogate* o-Terphenyl	Fails internal acceptance criteria
Spike Recovery %	26537-16	TRH >C_{34} -C_{40}	Fails internal acceptance criteria
Spike Recovery %	26537-16	TRH C_{29} - C_{36}	Fails internal acceptance criteria
Surrogate Recovery %	26537-12	*Surrogate* o-Terphenyl	Fails internal acceptance criteria
Surrogate Recovery %	26537-12	*Surrogate* o-Terphenyl	Fails internal acceptance criteria
Surrogate Recovery %	26537-16	*Surrogate* o-Terphenyl	Fails internal acceptance criteria

See Report 26537-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
Miscellaneous Inorg - soil					
pH1:5 soil:water	26537-12	24/06/2021	02/07/2021	03/07/2021	X

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

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COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation	
Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

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CERTIFICATE OF ANALYSIS 26537-A

Client Details

Client	Douglas Partners
Attention	Dean Woods
Address	231 Normanby Road, PO Box 5051, South Melbourne, VIC, 3205

Sample Details

Your Reference	**95409.02**
Number of Samples	38 Soil
Date samples received	28/06/2021
Date completed instructions received	06/07/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	08/07/2021
Date of Issue	09/07/2021

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris De Luca, Operations Manager

Authorised By

Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		26537-A-13	26537-A-14	26537-A-15	26537-A-17	26537-A-19
Your Reference	UNITS	DP14-0.9	DP14-1.4	DP14-1.9	DP15-0.4	DP15-1.4
Depth		0.9-1	1.4-1.5	2-2.1	0.4-0.5	1.4-1.5
Date Sampled		24/06/2021	24/06/2021	24/06/2021	25/06/2021	25/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Date analysed	-	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10}	mg/kg	36	58	<25	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	36	57	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	1	<1	<1	<1
Naphthalene	mg/kg	400	660	38	7	3
Total BTEX	mg/kg	<1	1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	87	90	91	91

TRH Soil C10-C40 NEPM						
Our Reference		26537-A-13	26537-A-14	26537-A-15	26537-A-17	26537-A-19
Your Reference	UNITS	DP14-0.9	DP14-1.4	DP14-1.9	DP15-0.4	DP15-1.4
Depth		0.9-1	1.4-1.5	2-2.1	0.4-0.5	1.4-1.5
Date Sampled		24/06/2021	24/06/2021	24/06/2021	25/06/2021	25/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Date analysed	-	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
TRH C_{10} - C_{14}	mg/kg	1,700	2,100	130	1,100	550
TRH C_{15} - C_{28}	mg/kg	6,500	7,100	600	3,600	1,500
TRH C_{29} - C_{36}	mg/kg	1,000	1,300	120	290	110
Total +ve TRH (C10-C36)	mg/kg	9,200	10,000	850	5,000	2,200
TRH >C_{10} -C_{16}	mg/kg	3,600	4,000	280	2,500	1,200
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	3,200	3,400	240	2,500	1,100
TRH >C_{16} -C_{34}	mg/kg	4,600	5,300	530	2,200	920
TRH >C_{34} -C_{40}	mg/kg	380	470	<100	240	<100
Total +ve TRH (>C10-C40)	mg/kg	8,600	9,800	810	4,900	2,100
Surrogate o-Terphenyl	%	#	#	96	#	107

PAHs in Soil				
Our Reference		26537-A-13	26537-A-14	26537-A-17
Your Reference	UNITS	DP14-0.9	DP14-1.4	DP15-0.4
Depth		0.9-1	1.4-1.5	0.4-0.5
Date Sampled		24/06/2021	24/06/2021	25/06/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	06/07/2021	06/07/2021	06/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021
Naphthalene	mg/kg	290	450	2.6
Acenaphthylene	mg/kg	<10	<10	<1
Acenaphthene	mg/kg	52	65	<2
Fluorene	mg/kg	32	43	<3
Phenanthrene	mg/kg	64	84	3.7
Anthracene	mg/kg	20	26	<2
Fluoranthene	mg/kg	15	19	<1
Pyrene	mg/kg	12	16	<1
Benzo(a)anthracene	mg/kg	<10	<10	<1
Chrysene	mg/kg	<10	<10	<1
Benzo(b,j&k)fluoranthene	mg/kg	<20	<20	<2
Benzo(a)pyrene	mg/kg	<5	<5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<10	<10	<1
Dibenzo(a,h)anthracene	mg/kg	<10	<10	<1
Benzo(g,h,i)perylene	mg/kg	<10	<10	<1
Total +ve PAH's	mg/kg	490	710	6.3
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<50	<50	<5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<50	<50	<5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<50	<50	<5
Surrogate p-Terphenyl-d_{14}	%	120	122	106

Moisture						
Our Reference		26537-A-13	26537-A-14	26537-A-15	26537-A-17	26537-A-19
Your Reference	UNITS	DP14-0.9	DP14-1.4	DP14-1.9	DP15-0.4	DP15-1.4
Depth		0.9-1	1.4-1.5	2-2.1	0.4-0.5	1.4-1.5
Date Sampled		24/06/2021	24/06/2021	24/06/2021	25/06/2021	25/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/07/2021	07/07/2021	07/07/2021	07/07/2021	07/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Moisture	%	10	12	13	14	14

PAHs in ASLP pH5			
Our Reference		26537-A-12	26537-A-37
Your Reference	UNITS	DP14-0.4	DP21-0.8
Depth		0.4-0.5	0.8-0.9
Date Sampled		24/06/2021	21/06/2021
Type of sample		Soil	Soil
Date extracted	-	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021
pH of final Leachate	pH units	5.0	5.1
Naphthalene in ASLP	mg/L	0.28	1.7
Acenaphthylene in ASLP	mg/L	<0.001	<0.001
Acenaphthene in ASLP	mg/L	0.022	0.49
Fluorene in ASLP	mg/L	0.012	0.29
Phenanthrene in ASLP	mg/L	0.010	0.59
Anthracene in ASLP	mg/L	0.004	0.19
Fluoranthene in ASLP	mg/L	<0.001	0.090
Pyrene in ASLP	mg/L	<0.001	0.090
Benzo(a)anthracene in ASLP	mg/L	<0.001	<0.001
Chrysene in ASLP	mg/L	<0.001	<0.001
Benzo(bjk)fluoranthene in ASLP	mg/L	<0.002	<0.002
Benzo(a)pyrene in ASLP	mg/L	<0.0005	<0.0005
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	<0.001	<0.001
Dibenzo(a,h)anthracene in ASLP	mg/L	<0.001	<0.001
Benzo(g,h,i)perylene in ASLP	mg/L	<0.001	<0.001
Surrogate p-Terphenyl-d_{14}	%	98	124

Metals-ASLP pH 5.0 (ICP-OES)		
Our Reference		26537-A-11
Your Reference	UNITS	DP14-0.11
Depth		0.11-0.21
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	07/07/2021
Date analysed	-	08/07/2021
pH of final Leachate	pH units	5.2
Arsenic	mg/L	<0.05
Cadmium	mg/L	<0.01
Chromium	mg/L	<0.01
Copper	mg/L	<0.01
Lead	mg/L	<0.03
Mercury	mg/L	<0.00005
Nickel	mg/L	0.1
Zinc	mg/L	<0.02

Speciated Phenols in ASLP5.0		
Our Reference		26537-A-12
Your Reference	UNITS	DP14-0.4
Depth		0.4-0.5
Date Sampled		24/06/2021
Type of sample		Soil
Date extracted	-	08/07/2021
Date analysed	-	08/07/2021
pH of final Leachate	pH units	5.0
Phenol	µg/L	<1
2-Chlorophenol	µg/L	<1
4-Chloro-3-Methylphenol	µg/L	<5
2-Methylphenol	µg/L	<1
3/4-Methylphenol	µg/L	<2
2-Nitrophenol	µg/L	<1
2,4-Dimethylphenol	µg/L	<1
2,4-Dichlorophenol	µg/L	<1
2,6-Dichlorophenol	µg/L	<1
2,4,5-Trichlorophenol	µg/L	<1
2,4,6-Trichlorophenol	µg/L	<1
2,4-Dinitrophenol	µg/L	<20
4-Nitrophenol	µg/L	<20
2,3,4,6-Tetrachlorophenol	µg/L	<1
2-methyl-4,6-dinitrophenol	µg/L	<20
Pentachlorophenol	µg/L	<5
Surrogate Phenol-d_6	%	64
Surrogate 2-fluorophenol	%	60

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-OES following leaching using Acetate buffer pH 5.0, i.e. Leaching fluid pH 5.0 = CLASS 2 & 3 from AS 4439.3 - 2019.
Metals-021	Determination of Mercury by Cold Vapour AAS following leaching using Acetate buffer pH 5.0, i.e. Leaching fluid pH 5.0 = CLASS 2 & 3 from AS 4439.3 - 2019.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater 2013.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.

Method ID	Methodology Summary
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			07/07/2021	[NT]	[NT]	[NT]	[NT]	07/07/2021	[NT]
Date analysed	-			07/07/2021	[NT]	[NT]	[NT]	[NT]	07/07/2021	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	84	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	84	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	85	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	87	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	82	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	82	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	89	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			07/07/2021	[NT]	[NT]	[NT]	[NT]	07/07/2021	[NT]
Date analysed	-			07/07/2021	[NT]	[NT]	[NT]	[NT]	07/07/2021	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
TRH >C_{10}-C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH >C_{16}-C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH >C_{34}-C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate o-Terphenyl	%		Org-020	83	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/07/2021	[NT]	[NT]	[NT]	[NT]	06/07/2021	[NT]
Date analysed	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Acenaphthylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Acenaphthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Phenanthrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	74	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	104	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: PAHs in ASLP pH5						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	09/07/2021	[NT]
Date analysed	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	09/07/2021	[NT]
Naphthalene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	64	[NT]
Acenaphthylene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Acenaphthene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	110	[NT]
Anthracene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	120	[NT]
Pyrene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	122	[NT]
Benzo(a)anthracene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	110	[NT]
Benzo(bjk)fluoranthene in ASLP	mg/L	0.002	Org-022	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in ASLP	mg/L	0.0005	Org-022	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in ASLP	mg/L	0.001	Org-022	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	122	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: Metals-ASLP pH 5.0 (ICP-OES)						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			07/07/2021	[NT]	[NT]	[NT]	[NT]	07/07/2021	[NT]
Date analysed	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Arsenic	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	118	[NT]
Cadmium	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	120	[NT]
Chromium	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	117	[NT]
Copper	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	113	[NT]
Lead	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	115	[NT]
Mercury	mg/L	0.00005	Metals-021	<0.00005	[NT]	[NT]	[NT]	[NT]	101	[NT]
Nickel	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	117	[NT]
Zinc	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: Speciated Phenols in ASLP5.0						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Date analysed	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Phenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	53	[NT]
2-Chlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	71	[NT]
4-Chloro-3-Methylphenol	µg/L	5	Org-022	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methylphenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
3/4-Methylphenol	µg/L	2	Org-022	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
2,4,5-Trichlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	µg/L	20	Org-022	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	µg/L	20	Org-022	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,3,4,6-Tetrachlorophenol	µg/L	1	Org-022	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-methyl-4,6-dinitrophenol	µg/L	20	Org-022	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	µg/L	5	Org-022	<5	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate Phenol-d_6	%		Org-022	68	[NT]	[NT]	[NT]	[NT]	53	[NT]
Surrogate 2-fluorophenol	%		Org-022	72	[NT]	[NT]	[NT]	[NT]	52	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

TRH: # Percent recovery is not possible for o-terphenyl surrogate to report due to interference from analytes (other than those being tested) in the sample/s.

PAH_S: PQL has been raised due to the high concentration of analytes in the sample/s, resulting in the sample/s requiring dilution.

PQL has been raised for 26537-A-17 due to interference from sample matrix.

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26537-A

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02	**Suburb:**	Northcote	**To:**	*Envirolab Services*
Project Manager:	Dean Woods	**Order Number:**	150961	**Sampler:**	FS		*22 Research Drive, Croydon VIC 3136*
Email:	Dean.Woods@douglaspartners.com.au , felix.smalley@douglaspartners.com.au				**Attn:**	*Pamela Adams*
Turnaround time:	☐ Standard ☐ 72 hour ☑ 48 hour ☐ 24 hour ☐ Same day				**Contact:**	*(03) 9763 2500 melbourne@envirolab.com.au*
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☑ No ☐ Yes	(If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: EPA IWRG621 Screen	Metals*, TRH, PAH	TRH	PAH	ASLP Metals	ASLP PAH	ASLP Total Phenols					Notes/ Preservation/ Additional Requirements
1	DP10-0.35	0.35	0.45	25.06.21	S	G												
2	DP11-0.15	0.15	0.25	25.06.21	S	G												
3	DP11-0.4	0.4	0.5	25.06.21	S	G												
4	DP11-0.7	0.7	0.8	25.06.21	S	G												
5	DP12-0.05	0.05	0.15	21.06.21	S	G												
6	DP12-0.4	0.4	0.5	21.06.21	S	G												
7	DP13-0.15	0.15	0.25	22.06.21	S	G												
8	DP13-0.4	0.4	0.5	22.06.21	S	G												
9	DP13-1.0	1	1.1	22.06.21	S	G												
10	DP13-1.7	1.7	1.8	22.06.21	S	G												
11	DP14-0.11	0.11	0.21	24.06.21	S	G					X							
12	DP14-0.4	0.4	0.5	24.06.21	S	G						X	X					
13	DP14-0.9	0.9	1	24.06.21	S	G			X	X								
14	DP14-1.4	1.4	1.5	24.06.21	S	G			X	X								

Metals to analyse:	*Metals as per EPA Screen but w total Cr		**LAB RECEIPT**
Number of samples in container:		**Transported to laboratory by:**	**Lab Ref. No:**
Send results to:	Douglas Partners Pty Ltd		**Received by:**
Address:	231 Normanby Road, South Melbourne VI	**Phone:** (03) 9673 3500	**Date & Time:**
Relinquished by:		**Date:** **Signed:**	**Signed:**

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02	**Suburb:**	Northcote	**To:**	*Envirolab Services*
Project Manager:	Dean Woods	**Order Number:**		**Dispatch date:**	*22 Research Drive, Croydon VIC 3136*

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: EPA IWRG621 Screen	Analytes: Metals*, TRH, PAH	Analytes: TRH	Analytes: PAH	Analytes: ASLP Metals	Analytes: ASLP PAH	Analytes: ASLP Total Phenols	Analytes	Analytes	Analytes	Notes/ Preservation/ Additional Requirements
15	DP14-2.0	2	2.1	24.06.21	S	G			X								
16	DP15-0.18	0.18	0.28	25.06.21	S	G											
17	DP15-0.4	0.4	0.5	25.06.21	S	G			X	X							
18	DP15-0.9	0.9	1	25.06.21	S	G											
19	DP15-1.4	1.4	1.5	25.06.21	S	G			X								
20	DP15-2.6	2.6	2.7	25.06.21	S	G											
21	DP16-0.13	0.13	0.23	23.06.21	S	G											
22	DP16-0.4	0.4	0.5	23.06.21	S	G											
23	DP16-1.0	1	1.1	23.06.21	S	G											
24	DP16-2.0	2	2.1	23.06.21	S	G											
25	DP17-0.15	0.15	0.25	23.06.21	S	G											
26	DP17-0.5	0.5	0.6	23.06.21	S	G											
27	DP17-0.9	0.9	1	23.06.21	S	G											
28	DP17-1.4	2.4	2.5	23.06.21	S	G											
29	DP18-0.3	0.3	0.4	21.06.21	S	G											
30	DP18-0.9	0.9	1	21.06.21	S	G											
31	DP19-0.25	0.25	0.35	21.06.21	S	G											
32	DP19-0.75	0.75	0.85	21.06.21	S	G											

Project Manager:	231 Normanby Road, South Melbourn		**Dispatch date:**

	Sample ID	pled	Sample Type	Container Type	Analytes

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	95409.02				Suburb:	Northcote									To:	Envirolab Services			
Lab ID	Location / Other ID	Depth From	Depth To	Date Sampl	S - soil W - water	G - glass P - plastic	EPA IWRG621 Screen	Metals*, TRH, PAH	TRH	PAH	ASLP Metals	ASLP PAH	ASLP Total Phenols					Notes/ Preservation/ Additional Requirements
33	DP19-1.3	1.3	1.4	21.06.21	S	G												
34	DP20-0.2	0.2	0.3	21.06.21	S	G												
35	DP20-1.0	1	1.1	21.06.21	S	G												
36	DP21-0.1	0.1	0.2	21.06.21	S	G												
37	DP21-0.8	0.8	0.9	21.06.21	S	G						X						
38	DP21-1.2	1.2	1.3	21.06.21	S	G												

Envirolab Services Pty Ltd
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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**26537-A**
Client ID	Douglas Partners
Project Reference	95409.02
Date Issued	09/07/2021

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Surrogate Recovery %	26537-A-13	*Surrogate* o-Terphenyl	Fails internal acceptance criteria
Surrogate Recovery %	26537-A-14	*Surrogate* o-Terphenyl	Fails internal acceptance criteria
Surrogate Recovery %	26537-A-17	*Surrogate* o-Terphenyl	Fails internal acceptance criteria

QC Comments

TRH: # Percent recovery is not possible for o-terphenyl surrogate to report due to interference from analytes (other than those being tested) in the sample/s.

PAH_S: PQL has been raised due to the high concentration of analytes in the sample/s, resulting in the sample/s requiring dilution.

PQL has been raised for 26537-A-17 due to interference from sample matrix.

See Report 26537-A-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
PAHs in ASLP pH5					
	26537-A-37	21/06/2021	08/07/2021	08/07/2021	X
Speciated Phenols in ASLP5.0					
	26537-A-12	24/06/2021	08/07/2021	08/07/2021	X

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

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COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation	
Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

Appendix F

Water Bore Construction License

COPY OF RECORD IN THE VICTORIAN WATER REGISTER

LICENCE TO CONSTRUCT WORKS

under Section 67 of the Water Act 1989

The information in this copy of record is as recorded at the time of printing. Current information should be obtained by a search of the register. The State of Victoria does not warrant the accuracy or completeness of this information and accepts no responsibility for any subsequent release, publication or reproduction of this information.

This licence does not remove the need to apply for any authorisation or permission necessary under any other Act of Parliament with respect to anything authorised by the works licence.

Water used under this licence is not fit for any use that may involve human consumption, directly or indirectly, without first being properly treated.

This licence is not to be interpreted as an endorsement of the design and/or construction of any works (including dams). The Authority does not accept any responsibility or liability for any suits or actions arising from injury, loss, damage or death to person or property which may arise from the maintenance, existence or use of the works.

Each person named as a licence holder is responsible for ensuring all the conditions of this licence are complied with.

This licence authorises its holders to construct the described works, subject to the conditions.

Licence Holder(s)

TIME AND PLACE of UNIT 26 25-45 COLLINS STREET MELBOURNE VIC 3000

Licence Contact Details

TIME AND PLACE	UNIT 26 25-45 COLLINS STREET MELBOURNE VIC 3000

Licence Details

Expiry date	18 Jun 2022
Status	Active
Authority	Southern Rural Water
Name of waterway or aquifer	NA for construct/decommission
Water system	Unincorporated (GMU)

Summary of Licensed Works

The details in this section are a summary only. They are subject to the conditions specified in this licence.

Works ID	*Works type*	*Use of water*
WRK127174	Bore	Investigation
WRK127175	Bore	Investigation
WRK127176	Bore	Investigation
WRK127177	Bore	Investigation
WRK127178	Bore	Investigation
WRK127179	Bore	Investigation
WRK127180	Bore	Investigation
WRK127181	Bore	Investigation
WRK127182	Bore	Investigation
WRK127183	Bore	Investigation
WRK127184	Bore	Investigation
WRK127185	Bore	Investigation

Description of Licensed Works

WORKS ID WRK127174

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324007.649	5817900.316	Zone 55

Land description

Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address

33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127175

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324001.009	5817930.182	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127176

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
323992.390	5817959.005	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127177

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324027.919	5817934.759	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127178

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324046.931	5817981.178	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127179

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324053.358	5817961.310	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127180

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324043.467	5817956.097	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127181

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324059.806	5817940.442	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127182

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324063.169	5817923.509	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127183

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324067.510	5817907.598	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127184

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324071.894	5817889.687	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Description of Licensed Works

WORKS ID WRK127185

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
324059.004	5817884.410	Zone 55

Land description
Volume 12172 Folio 112
Lot 100 of Plan SP027953L

Property address
33/25 SEPARATION STREET, NORTHCOTE, VIC 3070

Related Instruments

Related entitlements Nil

Related water-use entities Nil

Application History

Reference	*Type*	*Status*	*Lodged date*	*Approved date*	*Recorded date*
WLI615078	Issue	Approved	18 Jun 2021	18 Jun 2021	

Conditions

Licence WLE081215 is subject to the following conditions:

Siting and construction

1 The bore(s) must be drilled at the location specified in the application approved by the Authority.

2 If after drilling the bore is considered unsatisfactory a replacement bore may be drilled on the land specified in the licence.

Preventing pollution

3 All earthworks must be carried out, and all drilling fluids and waters produced during construction and development must be disposed of, in ways that avoid contaminating native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

4 Construction must stop immediately if the Authority reasonably believes that fuel, lubricant, drilling fluid, soil or water produced during construction and development is at risk of being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

5 The licence holder must construct and maintain bund walls, in accordance with the timeframe, specifications, guidelines or standards prescribed by the Authority, to prevent fuel, lubricant, drilling fluid, soil or water produced during construction and development from being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

Drilling licence and supervision requirements

6 The bore(s) must be constructed by, or under the direct supervision of, a driller licensed under the Water Act 1989 and endorsed as a Class 1, 2, or 3 driller, with appropriate endorsements.

7 If artesian pressure is expected or encountered, then a driller licensed under the Water Act 1989, and endorsed as a class 3 driller, must install casing in the bore(s) to a suitable depth, and in a suitable manner, to prevent its outbreak. A suitable valve must also be fitted to the bore.

Bore completion report

8 A Bore Completion Report must be submitted to the Authority within 28 working days of the bore(s) being completed.

Protecting water resources

9 At the completion of drilling, and before the drilling rig leaves the site, all bore(s) must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

10 The bore(s) must be located at least 30 metres from any authority's channel, reserve or easement unless authorised by the Authority.

Protecting water quality

11 Drilling must not exceed the maximum depth.

12 The bore(s) must be constructed so as to prevent aquifer contamination caused by vertical flow outside the casing.

13 If two or more aquifers are encountered, the bore(s) must be constructed to ensure that an impervious seal is made and maintained between each aquifer to prevent aquifer connection through vertical flow outside the casing; under no circumstances are two or more aquifers to be screened within the one bore or in any other manner to allow connection between them.

14 Boreheads must be constructed, to ensure that no flood water, surface runoff or potential subsurface contaminated soakage can enter the bore or bore annulus.

Fees and charges

15 The licence holder must, when requested by the Authority, pay all fees, costs and other charges under the Water Act 1989 in respect of this licence.

END OF COPY OF RECORD

Douglas Partners
Geotechnics | Environment | Groundwater

Integrated Practical Solutions

Report on
Preliminary Site Investigation for Contamination

Proposed Mixed Use Development
25 Separation Street, Northcote

Prepared for
River Street Developments Pty Ltd

Project 95409.01
February 2021



Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	95409.01	Document No.	R.001.Rev4
Document title	Report on Preliminary Site Investigation for Contamination Proposed Mixed Use Development		
Site address	25 Separation Street, Northcote		
Report prepared for	River Street Developments Pty Ltd		
File name	95409.01.R.001.Rev4		

Document status and review

Status	Prepared by	Reviewed by	Date issued
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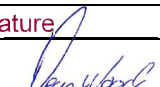
Revision 3	1	0	Dann Smith, River Street Developments Pty Ltd
Revision 4	1	0	Dann Smith, River Street Developments Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author		9 February 2021
Reviewer		9 February 2021

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Report on Preliminary Site Investigation for Contamination
Proposed Mixed Use Development
25 Separation Street, Northcote

1. Introduction

This report presents the results of a preliminary site investigation for contamination (PSI) undertaken for a proposed mixed use development at 25 Separation Street, Northcote. The investigation was commissioned via a signed services order dated 11 October 2019 by Dann Smith of River Street Developments Pty Ltd (River Street) and was undertaken in general accordance with Douglas Partners Pty Ltd (DP) proposal MEL190280.P.001.Rev0, dated 2 July 2019. The latest revision of this report was commissioned in February 2021 in response to receipt of additional information pertaining to landfill gas and leachate management within the adjoining Council-owned landfill.

It is understood that the development of the site will include demolition of part of the existing Northcote Plaza and construction of a new multi-tower development, ranging from 5 to 28 levels, over a two-level basement car park. All Nations Park, a former clay quarry pit and landfill, is located immediately to the east of the site, and the extent of the former quarry/landfill and any associated gas protection measures are unknown. The aim of this investigation is to provide an initial indication of whether landfill exists beneath the proposed development and the potential contamination status of soil to be removed as part of the basement excavation, as well as comment on the potential future environmental investigations which may be required. It should be noted that the scope of work conducted at this stage would not constitute a detailed site investigation for contamination (DSI) with reference to the NEPM (NEPC 2013)

2. Scope of Works

To meet the aim of the investigation stated above, DP undertook the following scope of works:

- Collation of historical aerial photographs and any other readily available information regarding the presence of a backfilled quarry;
- Review of landfill gas and leachate reports, relating to the adjoining landfill, provided through a freedom of information (FOI) process with City of Darebin;
- Check for the presence of below ground services and provide traffic control for drilling of boreholes around the existing Northcote Plaza Shopping Centre, which incorporates the Kmart store;
- Drilling of 10 boreholes using a Landcruiser mounted solid flight auger drilling rig to investigate the below ground conditions;
- Laboratory testing of selected samples for the contaminants of potential concern; and
- Preparation of this report describing the conditions encountered, including a provisional waste soil categorisation for soil that may require removal from the site for the proposed basement.

Please note that subsequent to engagement of DP for this PSI, the scope of works was expanded to extend four boreholes (Borehole DP02, DP02b, DP04 and DP08) for a geotechnical investigation.

Discussion of the geotechnical investigation methodology and findings are presented under a separate cover.

3. Site Identification

The site consists of the southern portion of a parcel of land identified as Lot 3 SP27953. A site location plan is presented on Drawing 1 in Appendix B, and a copy of the planning property report is provided in Appendix C. A summary of site details is presented in Table 1.

Table 1: Site Identification Summary Details

Identification	Description
Local Government Area	Darebin
Current Zoning	Schedule to the Commercial 1 Zone (C1Z)
Overlays	Design and Development Overlay Schedule 14 (DDO14) Development Contributions Plan Overlay Schedule 1 (DCP01)
Priority Sites Register Status	Not listed
Current Land use	Commercial – Northcote Plaza Shopping Centre
Proposed Land Use	Two-level basement car park Mixed use including residential above the ground level.

Note that an Environmental Audit Overlay currently applies to All Nations Park, located immediately to the east of the site, and sections of the park are listed on the EPA Priority Sites Register. Further discussion of the landfill is included in Section 5 of this report.

4. Site History

DP undertook a review of historical images of the site from 1933 to 1984 and mapped the apparent extent of the clay quarry/landfill in relation to the site boundary. Findings from the review of historic images are presented in Table 2 and should be read with reference to the drawings presented in Appendix C.

Table 2: Review of Historical Images

Year	Drawing	Observations
1933	C1	An old clay quarry is shown encroaching into the western section of the site. Two kilns are present in the central section of the site and other buildings associated with the Northcote Brick Works are located in the northern section of the site. A clay quarry is located to the northeast of the site.
1945	C2	The 1945 image is of low quality but appears to show that the clay quarry to the west has expanded and now encroaches into the south-western corner of the site.
1965	C3	The old clay quarry to the west appears to have been backfilled. Buildings associated with the Northcote Brick Works are still present at the site, including the two previously identified kilns. The clay quarry to the east has encroached further into the site along the eastern boundary.
1970	C4	The location of the old clay quarry to the west is being used as a car park. Buildings associated with the Northcote Brick Works have expanded and amalgamated. The boundary of the clay quarry to the east appears to be predominantly unchanged.
1979	C5	The site and surrounds appear to be predominantly unchanged.
1984	C6	The western section of the site is being used as a car park. The Northcote Brick Works buildings have been removed and replaced by a large commercial/industrial building. The boundary of the former clay quarry pit to the east has moved out of the site and the pit is identified as the Northcote Regional Tip. Vehicles are visible within the pit, presumably unloading waste.

The apparent extents of the landfills, as interpretated from the aerial photographs are shown on Drawing 1, Appendix B.

5. City of Darebin Reports

5.1 Overview of Council Reports

Following a FOI request, City of Darebin provided scanned copies of three reports, prepared by its consultants, relating to the current status of the adjoining landfill. All report references, the company and individual authors of the report had been redacted and so accurate referencing of those documents cannot be made within this report. The three reports were as follows:

- All Nations Park, Aftercare Management Plan. Dated May 2020
- All Nations Park, Hydrogeological Assessment. Dated May 2020; and
- All Nations Park, Landfill Gas Risk Assessment. Dated June 2020.

It was noted from these reports that the landfill was formerly a quarry, up to 50 m deep (RL of lowest point 3.9 mAHD) and the site was purchased by Council in 1977 upon cessation of brick making. All remaining kilns and chimneys were demolished by Council in 1979. At the same time, landfilling operations commenced and continued until 1998. The total volume of waste placed within the landfill was estimated to be 3 million cubic metres. Although the site was intended to be a solid inert (non

putrescible) landfill, significant amounts of garden cuttings, paper and timber (considered to be biodegradable) are known to have been placed at the site. The site was capped and rehabilitated between 1998 and 2002, at which time All Nations Park was opened. Current management measures include: maintenance of leachate within the landfill up to a maximum level of 41.8 m AHD; regular inspection of the cap; various passive landfill gas vents, and; a gas drainage layer beneath the current car park and extending into the subject site. From information contained in the reports, two passive gas vents (3 m tall steel pipes) exist on the subject land. From concept plans present in the supplied documents, the gas drainage layer consists of a 1 m thick gravel layer with an additional gravel-filled gas interception trench (minimum 5-6 m deep and 1-2 m wide) around the perimeter of the landfill. In addition, two landfill gas management bores, GB6 and GB6A, have been present at some stage in the past on the subject site, but these bores are not part of the twice per yearly monitoring events conducted by Council's consultants.

Borehole GB6 was reportedly installed within the gas drainage layer and GB6A was installed within siltstone, immediately beyond the perimeter gas drainage trench. Bore GB6 was destroyed and replaced with GB6A in 2011. The consultants have adopted gas trigger levels of 1.0% v/v for methane and 6.6% v/v for carbon dioxide for bores outside of the waste mass, in accordance with EPA guidelines. A total of 34 monitoring events were reported at bore GB6A in the period 2010 to 2019 and the stabilised methane concentration in each event was 0.0% v/v and the stabilised carbon dioxide concentration was 4.2% v/v. Surface methane emissions have also been monitored and, with the exception of isolated detections of methane adjacent to the leachate sump structures, low results have been recorded. It was noted that following detection of an elevated concentration of methane in GB6 in 2010, indoor air monitoring was undertaken within the Kmart storeroom and firewater pump room, located within the subject site. No elevated concentrations have been recorded in these locations, and monitoring has reportedly continued on an annual basis. Council's consultant noted that the minimum gas protection score for any new buildings (assuming basements and lower levels would be of a commercial use) at the site would be 2.5. This usually requires a combination of the following three types of protection:

- Structural barriers such as basement walls;
- Ventilation measures such as vented crushed rock layers; and
- Membranes incorporated into the structure walls.

5.2 Implications for Proposed Development

Based on the information provided by Council, there are various gas protection measures that have been constructed by Council within the subject private land. The exact as-built locations of the gas protection measures, such as the 6 m deep gas interception trench, are not shown to a sufficient level of detail in the provided information and Council will need to provide much more accurate information to inform the detailed design. Where the installed gas protection measures will be disturbed by the proposed building, Council will need to be consulted and equivalent protection measures implemented. In addition to maintaining the operation of the council-owned gas management infrastructure, the proposed building will need at least a ventilated crushed rock gas drainage layer and a gas protection membrane in addition to the 'standard' building. It is DP's experience that this level of gas protection can routinely be incorporated into the development and would readily be achievable.

6. Soil Sampling

The following field work description should be read with reference to the notes "Sampling Methods" presented in Appendix A.

To assess the extent of the surrounding former quarry pits, boreholes targeted different sections of the site. Table 3 provides a description of the location and purpose of boreholes undertaken during this investigation.

Table 3: Description of Boreholes

Borehole	Purpose	Borehole Type
DP01	Identify the extent of the old clay quarry on the western section of the site.	Environmental
DP02		Environmental and Geotechnical
DP02B		Geotechnical
DP03	Confirm ground conditions in the southern section of the site	Environmental
DP04		Environmental and Geotechnical
DP05		Environmental
DP06	Identify the extent of the clay quarry on the eastern section of the site	Environmental
DP07		Environmental
DP08		Environmental and Geotechnical
DP09		Environmental

To avoid disrupting any underground services present, DP undertook a dial-before-you-dig search and engaged a licensed service locator to scan the sample locations prior to drilling works. Environmental soil sampling was undertaken on 11 November 2019 (Boreholes DP01, DP03, DP05 to DP07 and DP09), 12 November 2019 (Borehole DP08) and 13 November 2019 (Borehole DP02 and DP04). Borehole DP02B, an additional geotechnical borehole, was completed on 22 November 2019 and did not include any environmental soil sampling. Borehole locations are presented in Drawing 1, Appendix B.

Environmental boreholes were advanced to a maximum depth of 9.2 m using a Land cruiser mounted solid flight auger drill rig, and geotechnical boreholes were advanced using a track mounted solid flight auger drill rig. Soil samples were collected at surface, 0.5 m, 1 m, and then 1 m intervals thereafter. Soil sampling was performed according to the standard operating procedures outlined in the DP Field Procedures Manual and are summarised as follows:

- Collection of soil samples directly from the decontaminated solid flight auger using disposable nitrile gloves (a new pair of gloves were used for each sample collected);
- Placing soil samples into laboratory prepared glass sample jars labelled with individual and unique identification details including project number, sampling date, borehole number and sample number;
- Storing samples in a cooled, insulated and sealed container;

- Decontamination of the lead auger using a 3% solution of phosphate free detergent and then rinsing with deionised water prior to the collection of each sample; and
- Transportation of samples to a National Association of Testing Authorities (NATA) accredited laboratory under appropriate chain-of-custody documentation.

6.1 Laboratory Testing

Soil samples were submitted to ALS Environmental Division (ALS) who is NATA accredited for the tests performed. All analyses were conducted within the holding times recommended by EPA IWRG701 '*Sampling and analysis of waters, wastewaters, soils and wastes*' (EPA 2009). The following analytical program was undertaken:

- Two samples were tested for an IWRG 621 Table 2 Screen. This comprises metals (arsenic, cadmium, chromium (VI), copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), total cyanide, total fluoride, speciated phenols (halogenated and non-halogenated), monocyclic aromatic hydrocarbons (including benzene, toluene, ethyl benzene and xylenes known as BTEX), polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCB), chlorinated hydrocarbons (volatile and semi-volatile) and organochlorine pesticides (OCP);
- Eleven samples were tested for heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH); and
- One sample was tested for leachable (ASLP) metals and one sample for leachable PAH.

Following the identification of one fragment of potential asbestos containing material (PACM) at ground level adjacent to borehole DP06, and identification of unknown fibres within fill at DP06, an additional soil sample was tested for the presence of asbestos fibres as well as the fragment of cement sheeting.

7. Fieldwork Findings

The following sections should be read with reference to the notes "Soil Descriptions", "Rock Descriptions", and "Symbols & Abbreviations" presented in Appendix A. Borehole locations are presented in Appendix B, and detailed borehole logs are presented in Appendix D.

Table 4: Depth of Fill across the Site

Borehole	Purpose	Depth of Fill (m bgl)	Fill Description	Contamination Observations
DP01	Identify the extent of the old clay quarry on the western section of the site.	> 9.2	Brown silty sands, orange grey and brown silty clays and brown sandy clays with increased gravels and cobbles with depth.	Brick, concrete and plastic fragments, and slag/ash sands and gravels were identified within fill in this area.
DP02		6.2		
DP02B		12.1		
DP03	Confirm ground conditions in the southern section of the site	0.3	Concrete or asphalt layer overlaying crushed rock	None
DP04		0.5		
DP05		0.3		
DP06*	Identify the extent of the clay quarry on the eastern section of the site	> 2.9	Brown and orange brown gravelly sands and brown clayey sands.	Brick fragments and slag/ash sands.
DP07		> 6.0		
DP08		6.5		
DP09		0.45	Concrete overlaying crushed rock	None

m bgl = metres below ground level

*White fibres were identified within fill from 1.5 to 2.9 m bgl at DP06 and a fragment of PACM was identified at surface level within a garden bed adjacent to DP06.

Underlying natural soil and rock consisted of yellow brown silty clay, pale brown and orange brown clayey silts and grey brown siltstone with clay and sandstone seams.

8. Soil Assessment Criteria

If soil is to be removed from a site it should be categorised as waste material in accordance with the current EPA guidelines outlined in the EPA Publication IWRG621 (2009), which is the current industry standard used to assess soil prior to off-site disposal. Under the guidelines, soil can be classified into one of four categories based on its relative hazard. From least to most contaminated, the categories are:

- Fill Material;
- Category C contaminated soil;
- Category B contaminated soil; and
- Category A contaminated soil.

Further information on each category can be found in the IWRG621 guideline. The soil hazard categorisation criteria are presented in Table E1, Appendix E.

9. Laboratory Results

Comparison of laboratory results to adopted soil hazard categorisation criteria is presented in Table E1, Appendix E, along with laboratory reports. In summary:

- Two fill samples (DP02-0.5 and DP07-4.9) reported concentrations of leachable lead and B(a)P consistent with Category B contaminated soil;
- Four fill samples (DP01-0.9, DP02-0.2, DP02-3.9 and DP07-1.9) reported concentrations of one or more of pH, metals (cadmium, copper, nickel, tin and zinc), and B(a)P and Total PAH consistent with the range of Category C contaminated soil; and
- The remaining five fill samples and four natural soil samples reported contaminant concentrations consistent with Fill Material.

Regarding asbestos testing, although the PACM sample identified at the surface adjacent to borehole DP06 tested positive for Chrysotile and Amosite asbestos, the fibres within the fill did not contain asbestos.

10. Responses to Council RFI

An earlier revision of this report was submitted to Council as part of a planning application and DP was requested to respond to each one of the items raised by Council in both a separate matrix as well as reproducing answers in this revised report. The questions raised and the answers provided by DP are summarised in Table 5.

Table 5: Responses to Council RFI

Condition number	Question Raised	DP Response
1	General comments regarding potential future work	The Preliminary Investigation was intended to establish the general setting of the site as well as initially characterise soil that will be removed from the proposed basement for off-site disposal purposes - which it achieved. As per the hierarchy of investigation specified in the NEPM, a Detailed Site Investigation (DSI) is required to provide additional detail on the soil, landfill gas and groundwater conditions. These investigations can be conducted as part of future pre- and post-demolition investigations.
1(a)	Discuss and identify the potential risk to the development from migrating landfill gases, leachate from the landfill, or other geotechnical issues like the potential for soil / fill subsidence. Specify mitigation measures.	Information provided by Council indicates that the level of landfill gas migration is relatively low and leachate is managed by pumping to maintain leachate at approximately the same level as surrounding groundwater and disposal as part of a trade waste agreement. Council-owned gas protection measures have been installed on the subject site and will require modification as part of the proposed development. It is expected that this could be readily achieved by re-routing gas collection pipework around the development. The proposed development will require at least three types of protection including the structure, a gas drainage layer and a gas-proof membrane. These measures could be considered routine for a building of this nature and would be specified as part of detailed design.

Condition number	Question Raised	DP Response
1(b)	Further detail about the 'additional intrusive investigations' proposed for the subject land.	Future investigations will include soil, landfill gas, leachate and groundwater investigations and the scope will be in accordance with EPA guidance, NEPM and Australian Standard AS4482.1. It is proposed to conduct a series of groundwater level measurements in DP's, and any other available, bores to gain an appreciation of seasonal groundwater fluctuations in order to design the basement water-management system. Landfill gas will also be monitored in Council's bore GB6A (if approval is granted) or in an alternative bore to confirm the landfill gas conditions. An appropriate gas screening value will be calculated for the development and appropriate measures as noted in condition 1 (a) implemented.
1(c)	A geotechnical report, assessing the feasibility of the proposed development and assessing the impact of construction and excavation on a former landfill site and within the buffer distance of a closed landfill site. The report must assess the risks of soil subsidence and settling in relation to the proposed development.	The existing geotechnical investigation report has recommended that additional investigation is undertaken post-demolition. It is noted that management of landfill gas would be assessed as part of the DSI report above.
1(d)	The potential impact of the development on the integrity of the landfill cap and the gas drainage system has not been demonstrated in the planning permit application. The applicant must provide further information about the interaction between the environmental management and protection assets associated with the former landfill in the adjacent car park.	It is noted that Council-owned gas protection measures, comprising a horizontal gas drainage layer beneath the car park and a 5-6 m deep gas interception trench, appear to have been constructed within the private land that is subject to this report. The measured rate of gas production was noted by Council's consultants to be low and it is proposed that once accurate as-built plans are provided by Council, the demolition plan should include re-routing of the gas collection pipes around the development site. The layers of gas management measures will be incorporated into the proposed development which is considered to be routine for this type of building on an urban infill site.

11. Conclusion and Recommendations

The aim of this investigation was to provide an initial indication of whether landfill exists beneath the proposed development. Based on fieldwork findings, landfill is likely to be present beneath the western section of the existing building, and beneath the eastern section of the car park adjacent to All Nations Park. Results of laboratory testing indicate areas of Category B and C contaminated soils within the landfill areas, along with areas of Fill Material, with natural soils likely to be consistent with Fill Material.

A fragment of asbestos containing material was identified on the surface, adjacent to borehole DP06. As this was the only asbestos identified during this investigation, and as this location is close to Separation Street, it is assumed that the fragment has been illegally dumped, rather than being a result of historic land fill practices. Even so, as sections of the site have historically been used as a landfill, it is recommended that an unexpected finds protocol is put in place during proposed excavations at the site.

It is understood that additional intrusive investigations are to be undertaken at the site to further delineate the landfill areas. These investigations should be in the form of a detailed site investigation for contamination (DSI) to build on the findings of this PSI, as recommended by the staged approach presented in EPA guidance. DP recommends that the DSI should include the following items:

- Further, detailed, review of the Council-provided reports and any other available records such as accurate as-built plans showing the locations of the gas drainage layer and interception trench;
- Installation of additional soil, groundwater and landfill gas monitoring wells both outside and within the existing building – some of which may have to be undertaken post demolition;
- Comparison of the soil contamination data to NEPM human health and ecological investigation levels relevant to the proposed development, as well as aesthetic conditions of material from the landfill which may impact their suitability for reuse at the site;
- Calculation of the gas screening value (GSV) as required by EPA guidance, and recommendations on the appropriate level of gas protection required as part of the proposed development;
- Monitoring of the groundwater levels with particular attention to the potential for perched water tables (leachate) to be present in the former landfills. It is envisaged that this would require multiple rounds of monitoring in a number of bores; and
- Development of appropriate remediation and or management measures as relevant to the soil, landfill gas and groundwater/ leachate conditions noted during the DSI.

To reduce the cost of disposal of landfill soils from the site it is also recommended that further sampling and testing is undertaken to delineate Category B soils.

Based on our preliminary investigation and subject to the findings of additional testing, investigation and implementation of any management or remediation measures thereafter, DP considers that this site could be made suitable (from a contamination perspective) for the proposed development.

12. References

- Douglas Partners Pty Ltd. *Field Procedures Manual* and *Project Management Manual*, which form part of the Company Quality System (accredited to AS/NZS ISO 9001:2015).
- EPA Victoria. (2009a). Publication IWRG621 Soil Hazard Categorisation and Management. Melbourne, Australia.
- EPA Victoria (2009). Publication IWRG701 Sampling and Analysis of Waters, Wastewaters, Soils and Sludges. Melbourne, Australia.
- National Environment Protection Council (NEPC) (2013), National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [ASC NEPM], Standing Council on Environment and Water (SCEW), incorporating the NEPC.

13. Limitations

Douglas Partners (DP) has prepared this report for this project at 25 Separation Street, Northcote in general accordance with DP's proposal MEL190280.P.001.Rev0, dated 2 July 2019, and acceptance received from Dann Smith of River Street Developments Pty Ltd dated 11 October 2019. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of River Street Developments Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design

process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

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Appendix A

About This Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse) - with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse) - with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- 'Moist, dry of plastic limit' or 'w <PL' (i.e. hard and friable or powdery).
- 'Moist, near plastic limit' or 'w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- 'Moist, wet of plastic limit' or 'w >PL' (i.e. soils usually weakened and free water forms on the hands when handling).
- 'Wet' or 'w ≈LL' (i.e. near the liquid limit).
- 'Wet' or 'w >LL' (i.e. wet of the liquid limit).

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

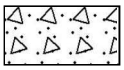
Symbols & Abbreviations

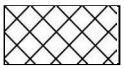
Graphic Symbols for Soil and Rock

General

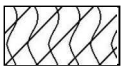

Asphalt

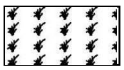

Road base

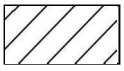

Concrete

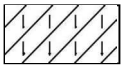

Filling

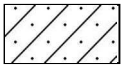
Soils

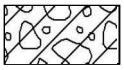

Topsoil

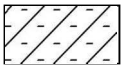

Peat

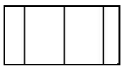

Clay

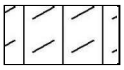

Silty clay

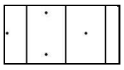

Sandy clay


Gravelly clay


Shaly clay


Silt


Clayey silt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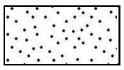
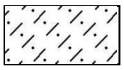
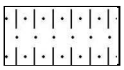
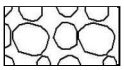

Sand

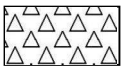

Clayey sand


Silty sand

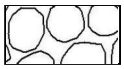

Gravel

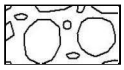

Sandy gravel


Cobbles, boulders

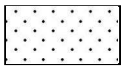

Talus

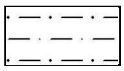
Sedimentary Rocks

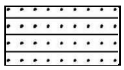

Boulder conglomerate

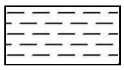

Conglomerate


Conglomeratic sandstone

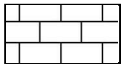

Sandstone


Siltstone

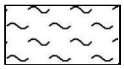

Laminite

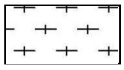

Mudstone, claystone, shale

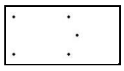

Coal


Limestone

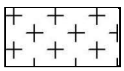
Metamorphic Rocks

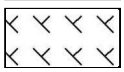

Slate, phyllite, schist

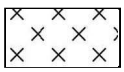

Gneiss

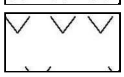

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Appendix B

Site Drawings



Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: River Street Developments Pty Ltd		
OFFICE: Melbourne	DRAWN BY: ARP	
SCALE: As shown	DATE: March 2020	

TITLE: **Borehole Location Plan**
Geotechnical and Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Separation Street, Northcote

N

PROJECT No:	95409.00
DRAWING No:	1
REVISION:	0

Appendix C

Site History Documents

PLANNING PROPERTY REPORT

VICTORIA State Government | Environment, Land, Water and Planning

From www.planning.vic.gov.au on 25 February 2020 03:10 PM

PROPERTY DETAILS

Address:	**25-143 SEPARATION STREET NORTHCOTE 3070**	
Lot and Plan Number:	**Lot 3 SP27953**	
Standard Parcel Identifier (SPI):	**3\SP27953**	
Local Government Area (Council):	**DAREBIN**	www.darebin.vic.gov.au
Council Property Number:	**N/A**	
Planning Scheme:	**Darebin**	planning-schemes.delwp.vic.gov.au/schemes/darebin
Directory Reference:	**Melway 30 F8**	

This property has 82 parcels. For full parcel details get the free Basic Property report at Property Reports

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**inside drainage boundary**
Power Distributor:	**CITIPOWER**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

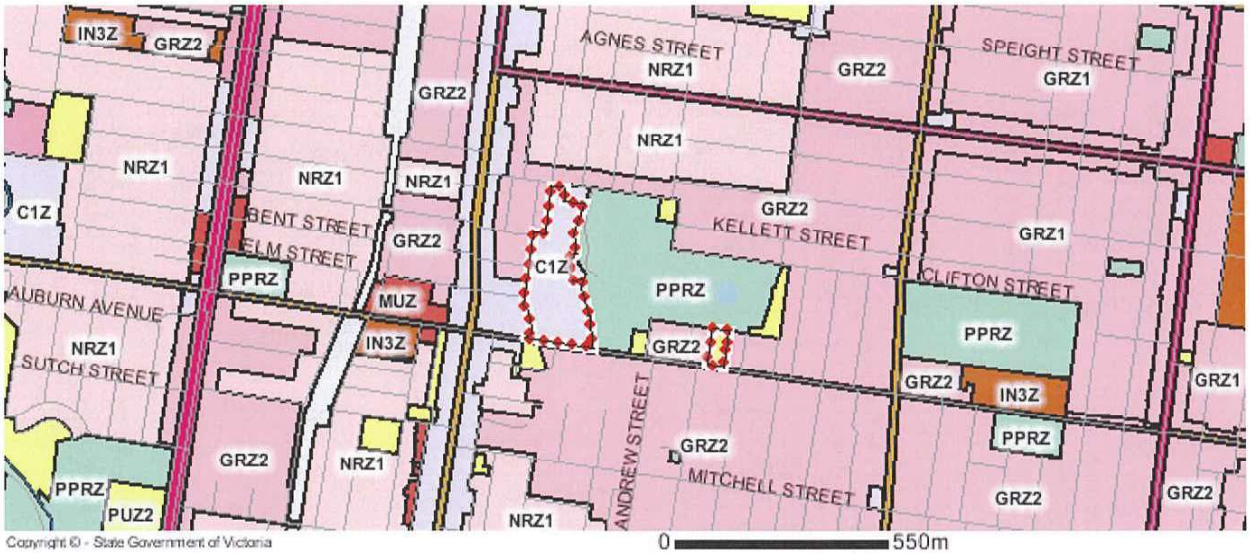
Planning Zones

COMMERCIAL 1 ZONE (C1Z)

SCHEDULE TO THE COMMERCIAL 1 ZONE (C1Z)

PUBLIC USE ZONE - CEMETERY/CREMATORIUM (PUZ5)

SCHEDULE TO THE PUBLIC USE ZONE - CEMETERY/CREMATORIUM (PUZ5)



- C1Z - Commercial 1
- GRZ - General Residential
- IN3Z - Industrial 3
- MUZ - Mixed Use
- NRZ - Neighbourhood Residential
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery / Crematorium
- PUZ6 - Public Use - Local Government
- RDZ1 - Road - Category 1
- RDZ2 - Road - Category 2
- RGZ - Residential Growth
- SUZ - Special Use
- UFZ - Urban Floodway

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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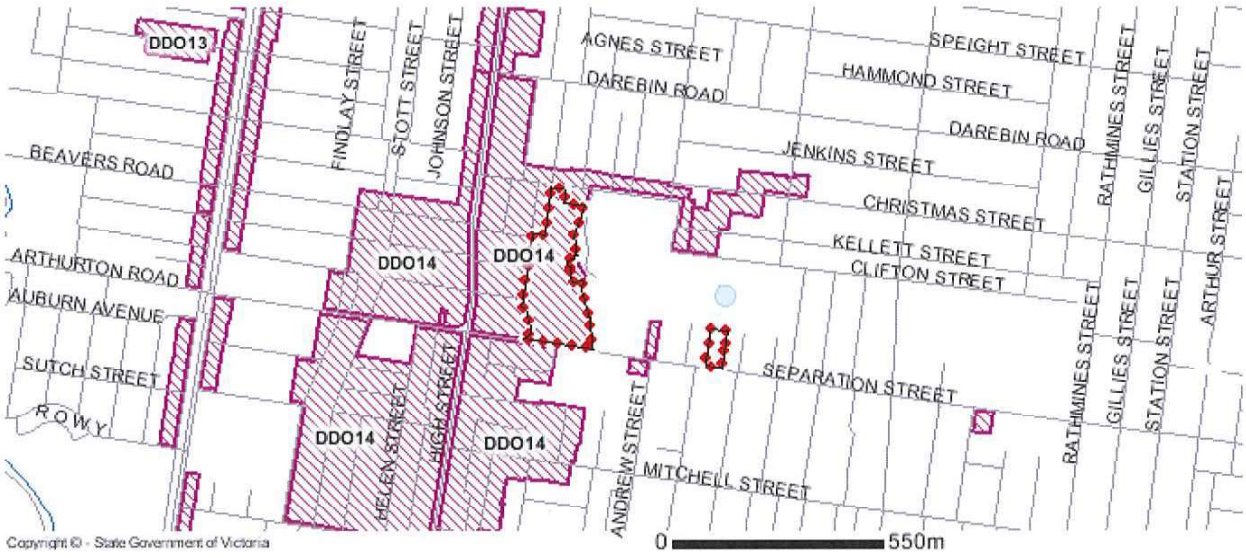
Planning Overlays

DESIGN AND DEVELOPMENT OVERLAY (DDO)

DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14 (DDO14)

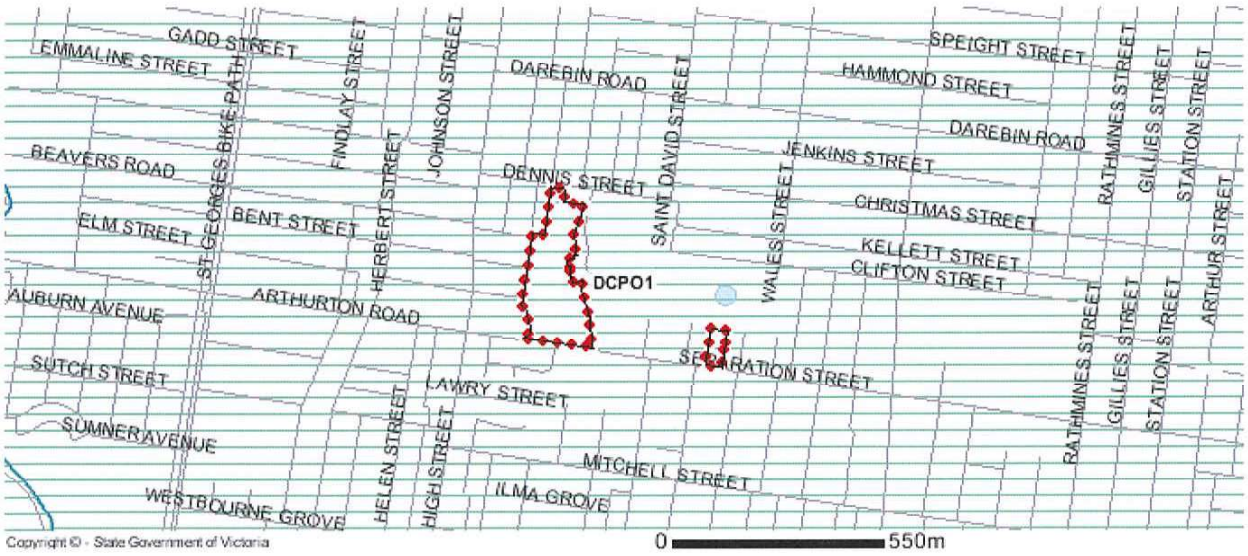


DDO - Design and Development

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO)

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1 (DCPO1)



DCPO - Development Contributions Plan

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

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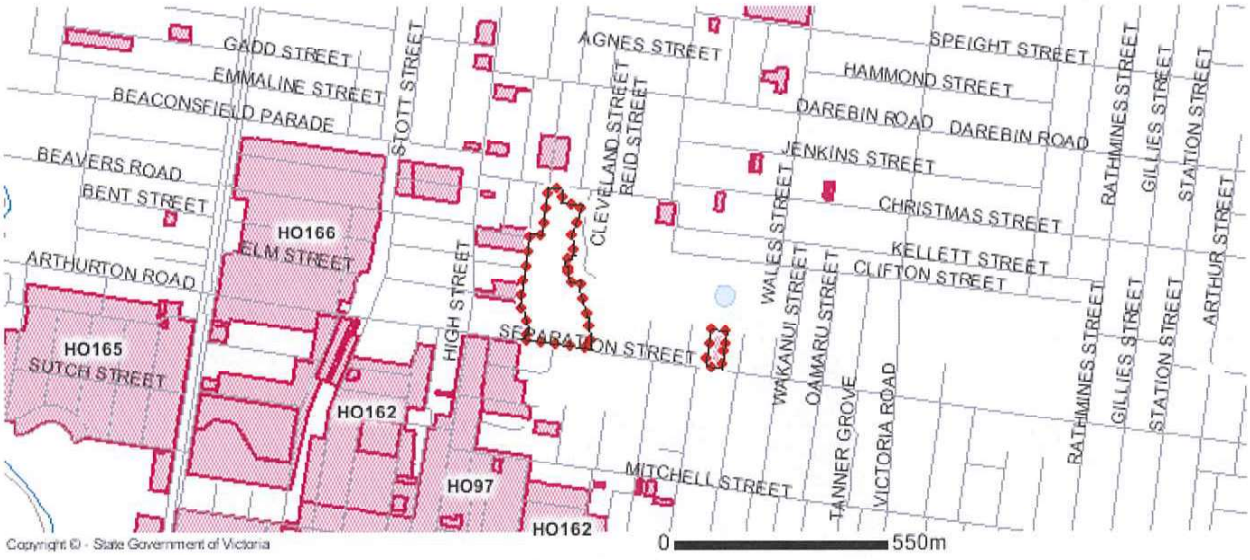
PLANNING PROPERTY REPORT

Planning Overlays

HERITAGE OVERLAY (HO)

HERITAGE OVERLAY SCHEDULE (HO194)



HO - Heritage

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

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Planning Overlays

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

DEVELOPMENT PLAN OVERLAY (DPO)

ENVIRONMENTAL AUDIT OVERLAY (EAO)

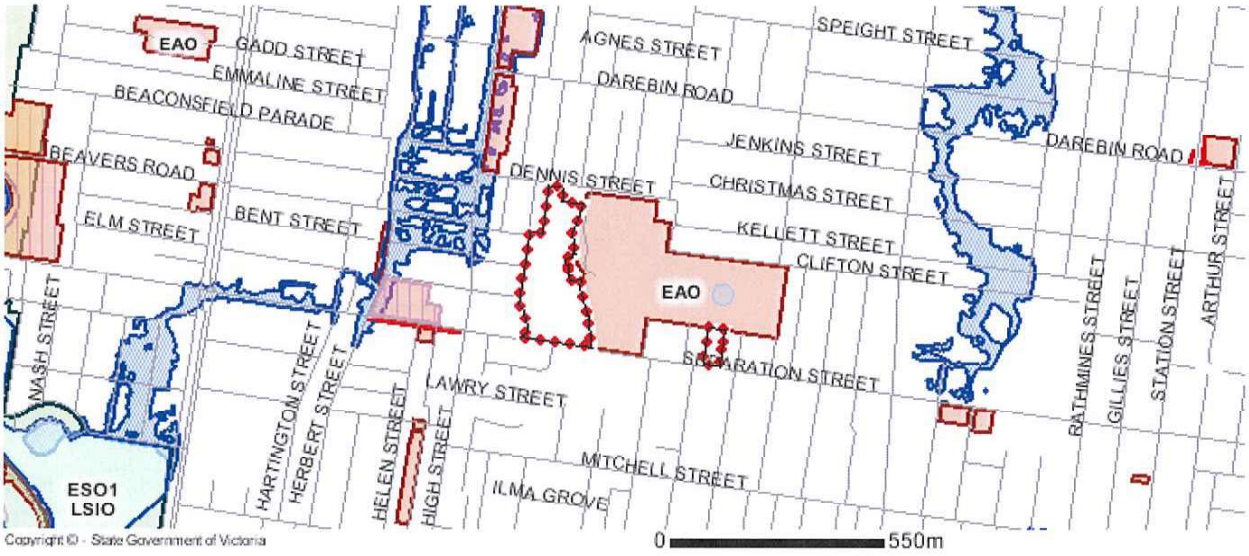
EROSION MANAGEMENT OVERLAY (EMO)

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)

LAND SUBJECT TO INUNDATION OVERLAY (LSIO)

PUBLIC ACQUISITION OVERLAY (PAO)

SPECIAL BUILDING OVERLAY (SBO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

Further Planning Information

Planning scheme data last updated on 18 February 2020.

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the *Planning and Environment Act 1987*. It does not include information about exhibited planning scheme amendments, or zonings that may abut the land. To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit http://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

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PLANNING PROPERTY REPORT

Designated Bushfire Prone Area

This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.



Designated Bushfire Prone Area

Designated bushfire prone areas as determined by the Minister for Planning are in effect from 8 September 2011 and amended from time to time.

The Building Regulations 2018 through application of the Building Code of Australia, apply bushfire protection standards for building works in designated bushfire prone areas.

Designated bushfire prone areas maps can be viewed on VicPlan at http://mapshare.maps.vic.gov.au/vicplan or at the relevant local council.

Note: prior to 8 September 2011, the whole of Victoria was designated as bushfire prone area for the purposes of the building control system.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website www.vba.vic.gov.au

Copies of the Building Act and Building Regulations are available from www.legislation.vic.gov.au

For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au

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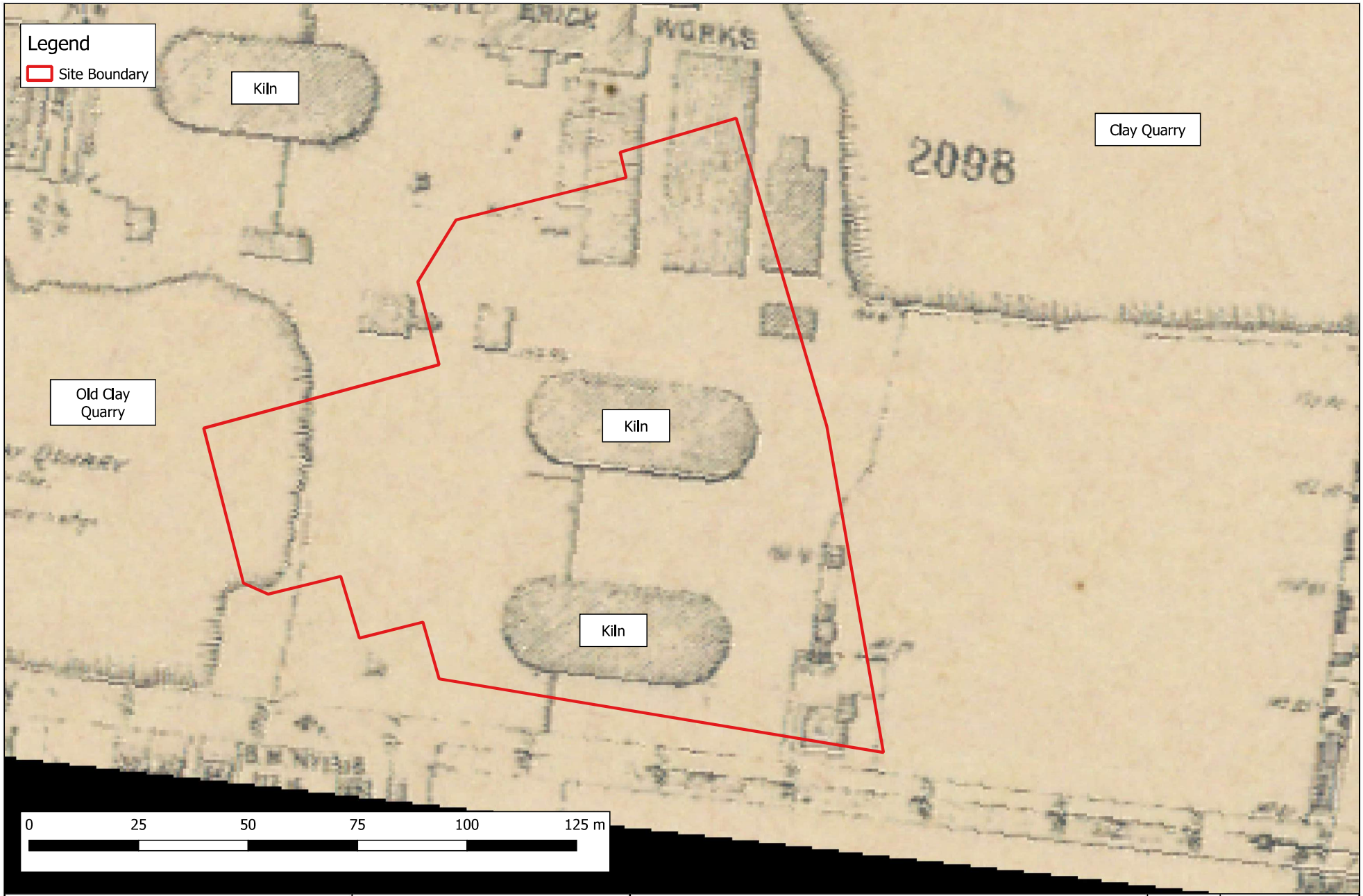


Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: LAS Project Management Pty Ltd	
OFFICE: Melbourne	DRAWN BY: ARP
SCALE: 1:798	DATE: 16 October 2019

TITLE: **1933 MMBW Map**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No:	95409.00
DRAWING No:	C1
REVISION:	0

Legend

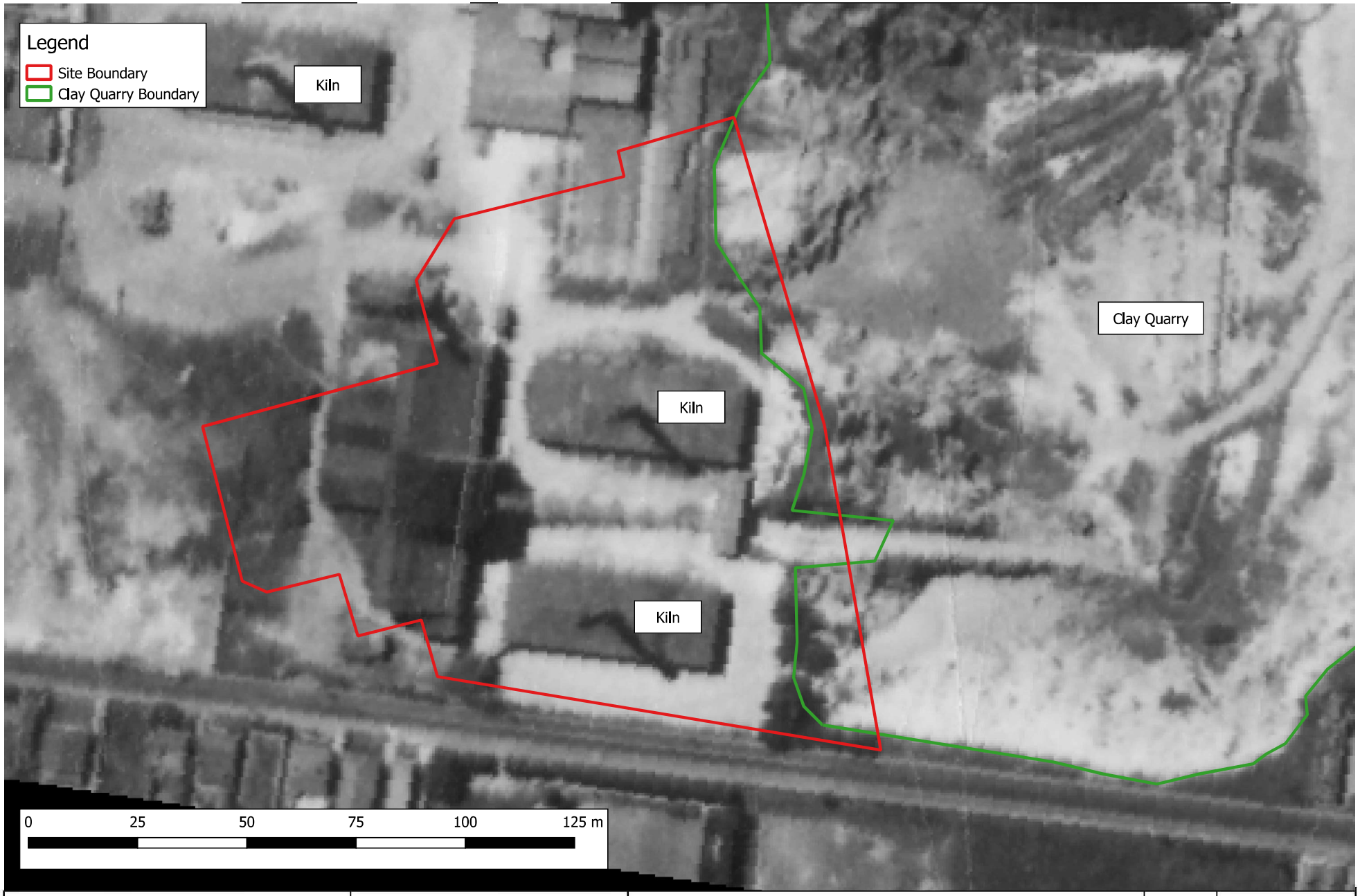
Site Boundary

Clay Quarry Boundary



Douglas Partners Geotechnics | Environment | Groundwater	CLIENT: LAS Project Management Pty Ltd	TITLE: **1945 Aerial Image** **Preliminary Site Investigation for Contamination** **Lot 50, 51 and 76, 25 Seperation Street, Northcote**	PROJECT No: 95409.00
	OFFICE: Melbourne | DRAWN BY: ARP	N	DRAWING No: C2
	SCALE: 1:950 | DATE: 16 October 2019		REVISION: 0

DRC has updated DP figure with clear aerial photograph



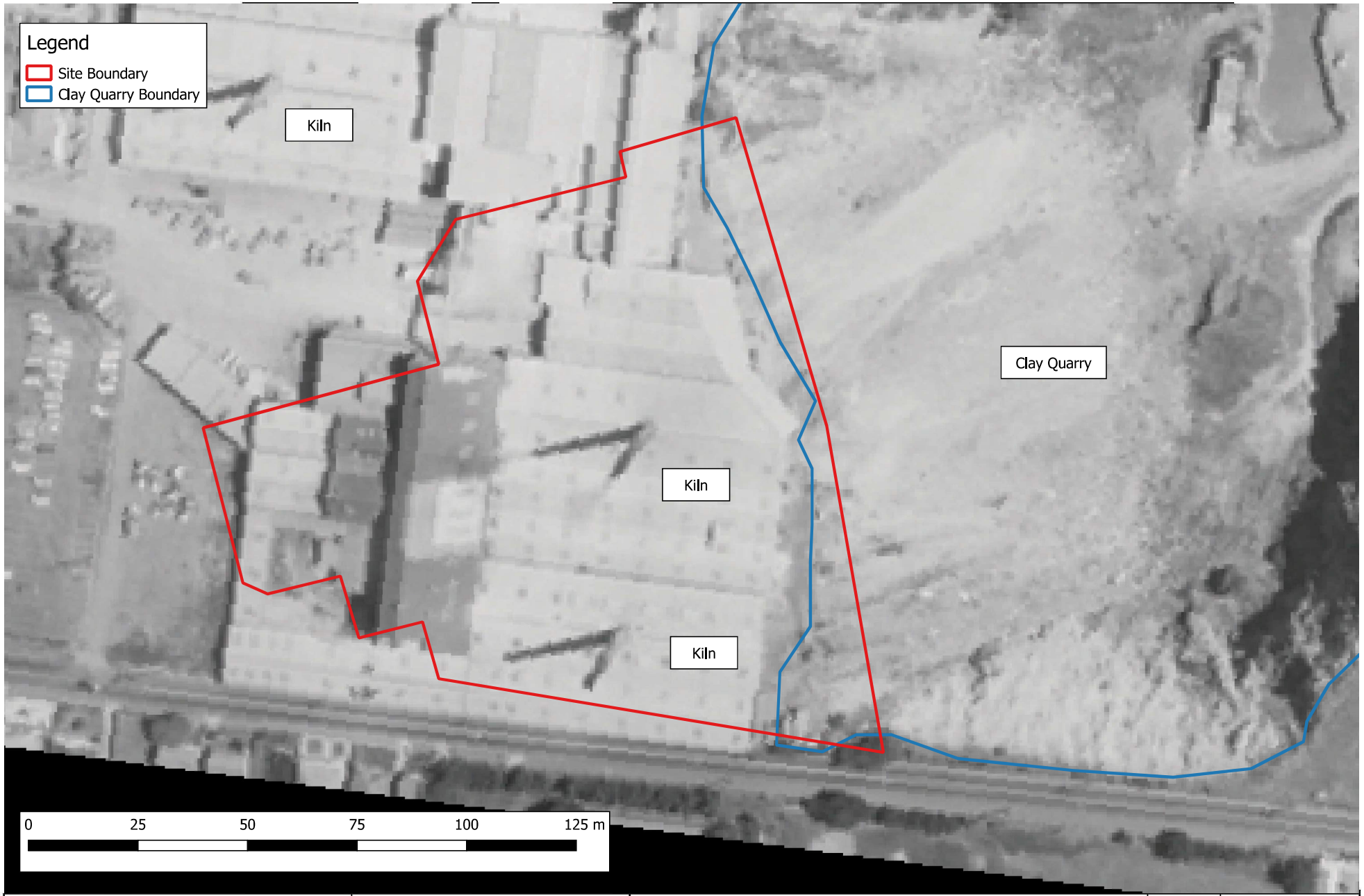
Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:798 | DATE: 16 October 2019

TITLE: **1965 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C3
REVISION: 0



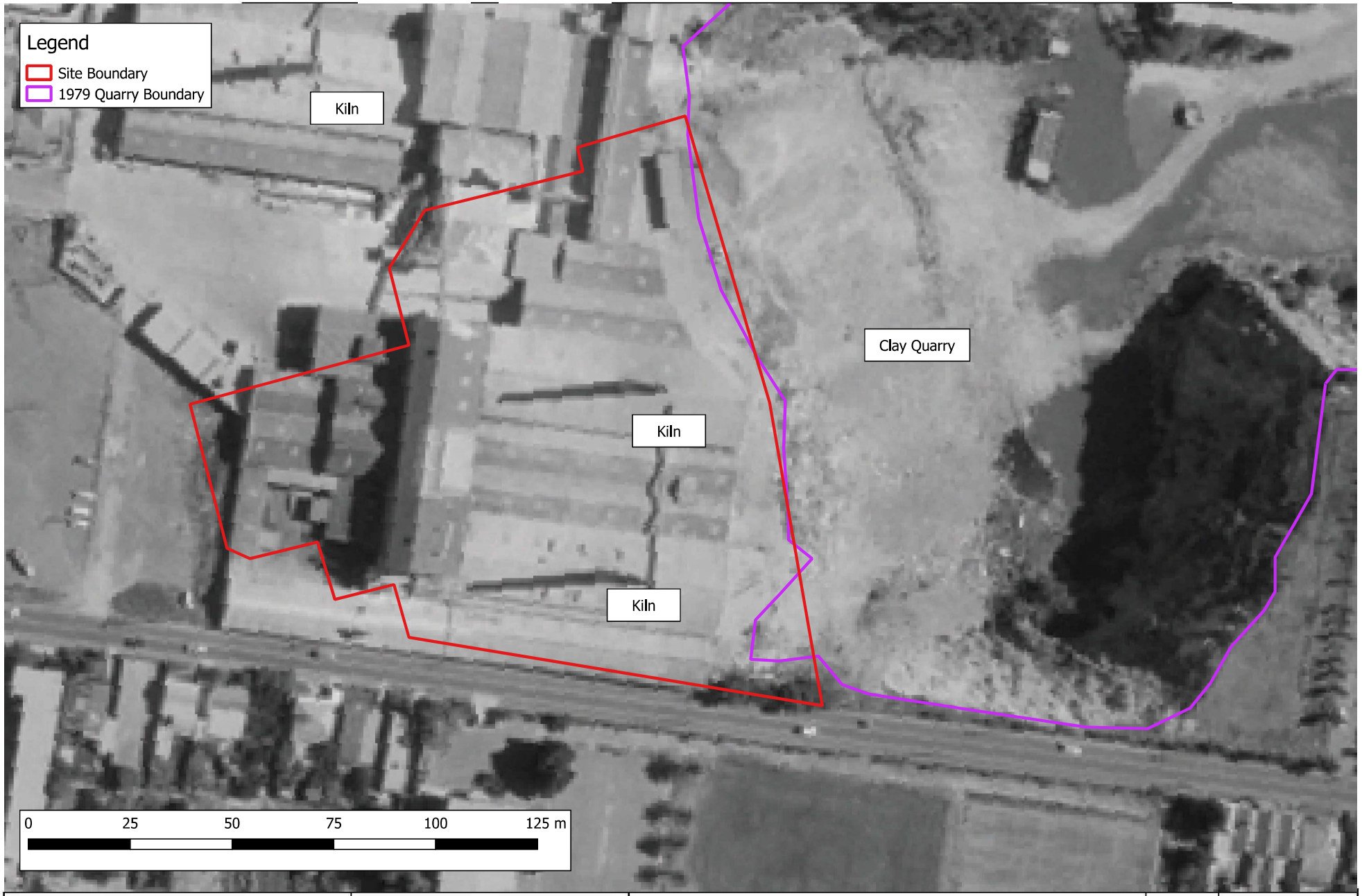
Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:798 | DATE: 16 October 2019

TITLE: **1970 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C4
REVISION: 0



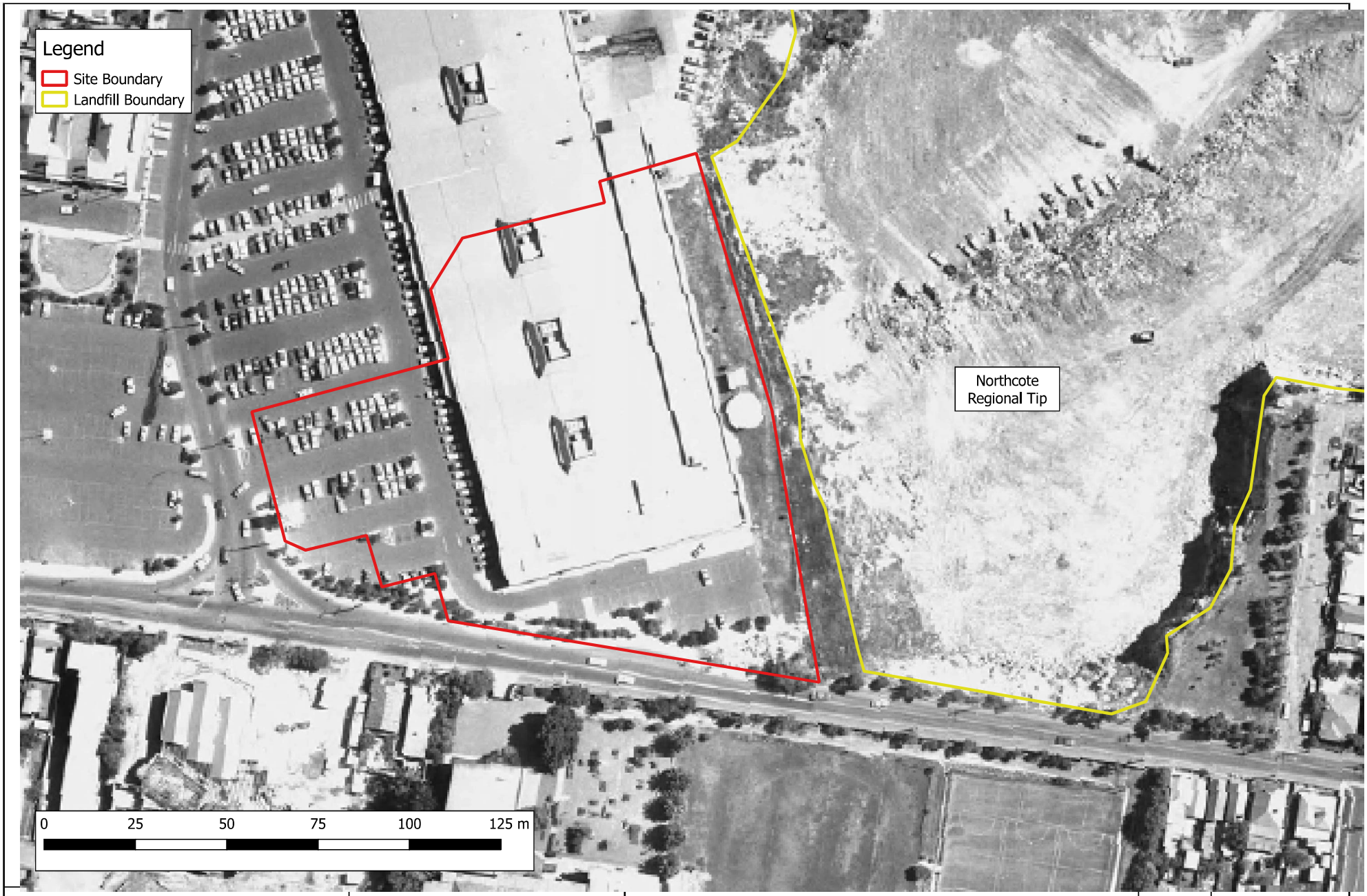
Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:858 | DATE: 16 October 2019

TITLE: **1979 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C5
REVISION: 0



Douglas Partners
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CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne
DRAWN BY: ARP
SCALE: 1:950
DATE: 16 October 2019

TITLE: **1984 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

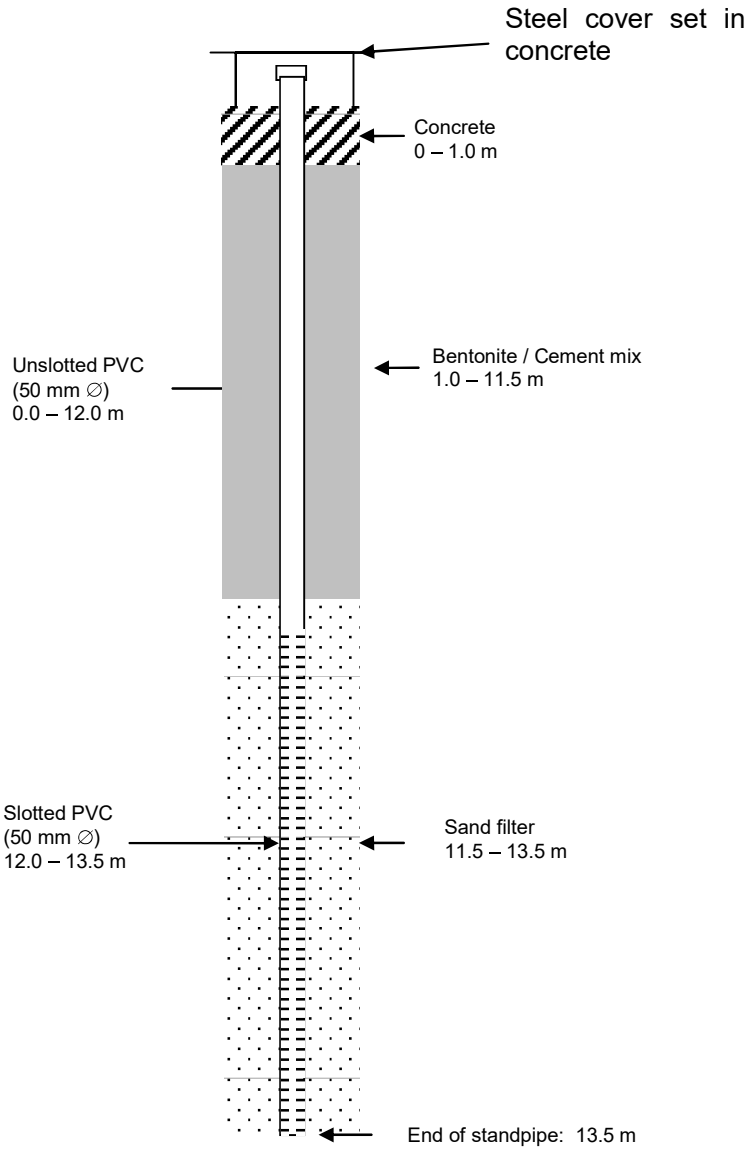
N

PROJECT No: 95409.00
DRAWING No: C6
REVISION: 0

Appendix D

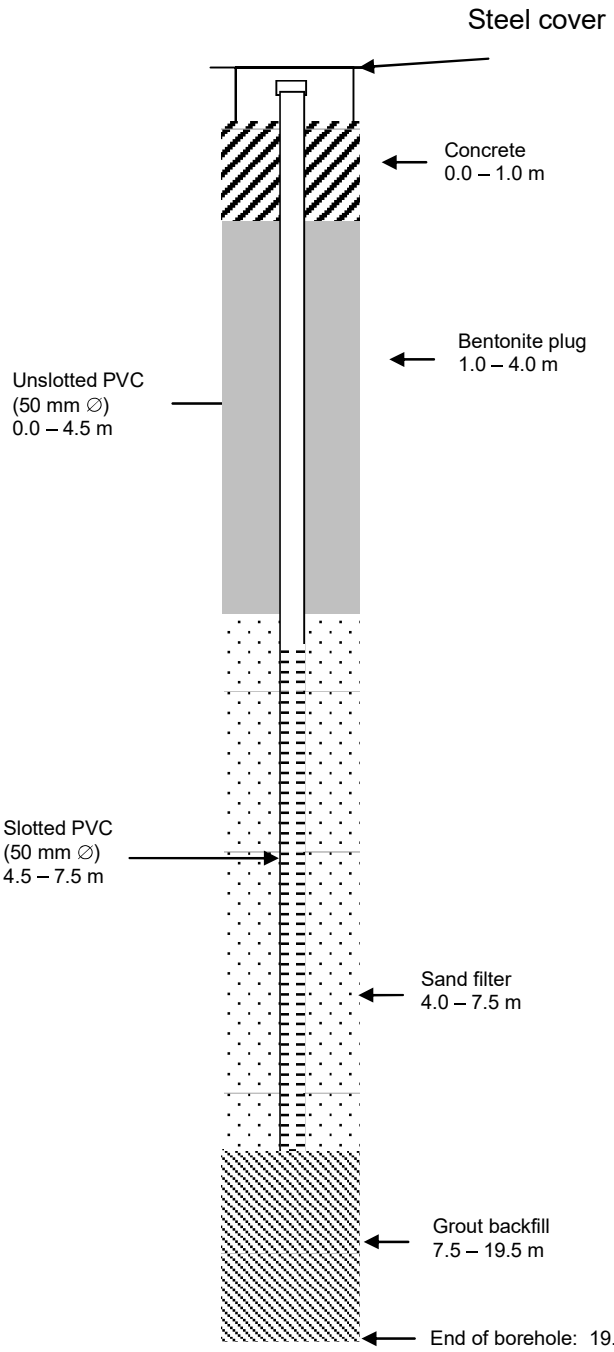
Borehole Logs

DP02b



Douglas Partners Geotechnics / Environment / Groundwater	**Indicative Standpipe Construction Details** **Lot 50,51 and 76, 25 Separation Street** **Northcote**	PROJECT: 95409.0 DRAWING No. 2 REV: 0
	CLIENT: LAS Project Management Pty Ltd	DATE: Mar 2020

DP08



Douglas Partners Geotechnics / Environment / Groundwater	**Indicative Standpipe Construction Details** **Lot 50,51 and 76, 25 Separation Street** **Northcote**	PROJECT: 95409.0 DRAWING No. 3 REV: 0
	CLIENT: LAS Project Management Pty Ltd	DATE: Mar 2020

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 52.4 m AHD
EASTING: 323940
NORTHING: 5817898
DIP/AZIMUTH: 90°/--

BORE No: DP 02B
PROJECT No: 95409.00
DATE: 22/11/2019
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Water	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
52	0	FILL / SILTY CLAY (CI): dark brown, mottled grey, with fine to medium sand, M>Wp, soft to firm.							
51	1	1.5 m: with brick and concrete fragments.				S / D			1,2,2 N = 4
50	2	2.5 m: becoming stiff to very stiff.				S			3,8,10 N = 18
49	3	3.5 m: becoming stiff.				S / D			7,8,6 N = 14
48	4								
47	5	5.0 m: becoming very stiff.				S			6,10,10 N = 20
46	6								
	6.4	SILTY CLAY (CI): yellow brown, M=Wp, very stiff to hard, EW siltstone.							
45	6.95 7	SILTSTONE (HW): brown and grey, bedding ~70°, Dargile Formation.			7.0 - 7.15 m: Bp, 70°, pl, ro, fe sn 7.2m: EW seam, 30 mm 7.25m: Cs, 20 mm 7.6m: Cs, 50 mm 7.7m: EW seam, 10 mm 7.8m: Cs, 100 mm 8.05 - 8.15 m: Bp, 70°, pl, ro, fe sn	C	100	51	Saturated moisture content = 11.2%
44	8					C	89	25	Saturated moisture content = 10.9%
	8.4	Core Loss.			8.4m: CORE LOSS: 1600mm				
43	9					C	0	0	
	10.0					C	0	0	

Degree of Weathering: EW HW MW SW FS FR
Rock Strength: Ex Low, Very Low, Low, Medium, High, Very High, Ex High
Fracture Spacing (m): 0.01, 0.05, 0.10, 0.50, 1.00

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 3 m

TYPE OF BORING: Solid flight auger to 2.5 m; coring to end.

WATER OBSERVATIONS: No free groundwater observed in top 2.5 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 52.4 m AHD
EASTING: 323940
NORTHING: 5817898
DIP/AZIMUTH: 90°/--

BORE No: DP 02B
PROJECT No: 95409.00
DATE: 22/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
42		Core Loss.						10m: CORE LOSS: 2100mm	C	0	0	
11									C	0	0	SPT= 15/100 mm double bouncing
41									C	0	0	
12	12.1	SANDSTONE (HW): orange brown, minor interbedded siltstone (20%), bedding ~70°, Dargile Formation.						12.05m: EW seam, 50 mm 12.15m: Cs, 100 mm 12.45m: Sheared surface, 70°, cu, sm, fe sn 12.6m: Sheared surface, 60°, cu, sm, fe sn 12.88m: Cs, 90 mm 13m: Sh, 100 mm 13.17m: Sh, 140 mm	C	90	11	Saturated moisture content = 11.0% PL(D) = 0.26
40	13								C	100	0	Saturated moisture content = 12.8%
39	13.5	Bore discontinued at 13.5m										
14												
38												
15												
37												
16												
36												
17												
35												
18												
34												
19												
33												

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 3 m

TYPE OF BORING: Solid flight auger to 2.5 m; coring to end.

WATER OBSERVATIONS: No free groundwater observed in top 2.5 m, further observation obscured by drilling fluid.

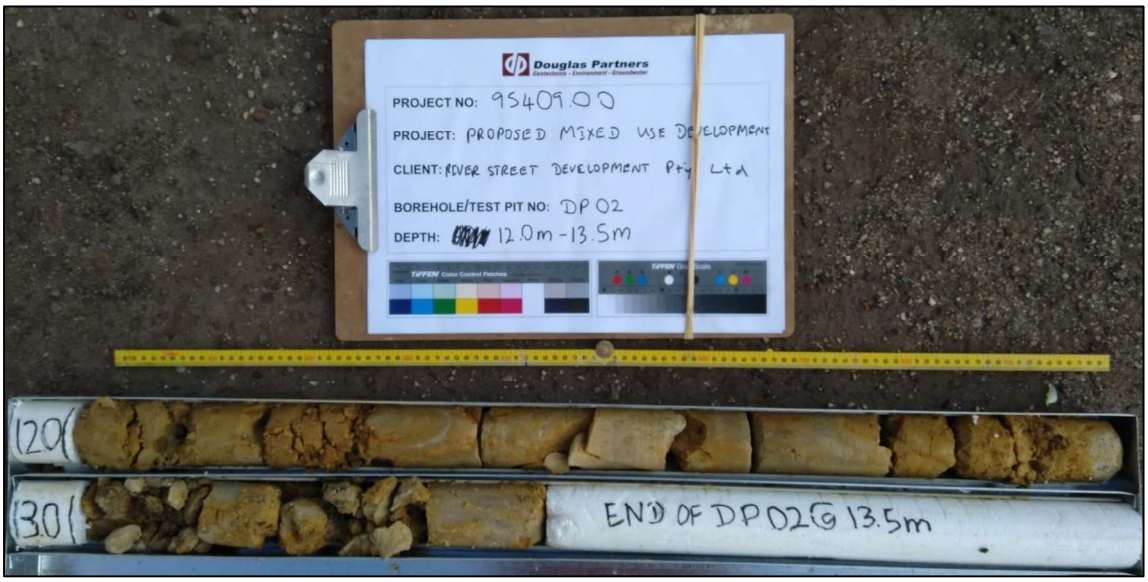
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater





Douglas Partners Geotechnics / Environment / Groundwater	**Core Photographs – DP02B**	Project No. : 95409.00
	Multi-use Development 25 Separation Street, Northcote	Plate No : 1 - 1
	Client : River Street Developments Pty Ltd	Date: Mar 2020

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.3 m AHD
EASTING: 324040
NORTHING: 5817876
DIP/AZIMUTH: 90°/--

BORE No: DP 04
PROJECT No: 95409.00
DATE: 13/11/2019
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Discontinuities (B - Bedding, J - Joint, S - Shear, F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
49	0.2	Concrete.			E			
	0.5	FILL / SANDY GRAVEL: fine to medium grained sand, grey brown, moist, inferred medium dense.			S			13, 35/100 mm double bouncing
48	1	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, M<Wp, very stiff - hard, EW siltstone.						
47	2.0	Core Loss.		2m: CORE LOSS: 500mm	C	66	6	
	2.5	SILTSTONE (HW): grey brown, mottled pale pink, Dargile Formation.		2.5 - 2.7 m: 5 x drilling induced breaks 2.9m: Sh, 100 mm 3.05m: Bp, 70°, ir, ro, discon 3.15m: Bp, 60°, ir, ro 3.3m: Cs, 150 mm				
46	3.5	Core Loss.		3.5m: CORE LOSS: 500mm	C	0	0	
45	4.0	SILTY CLAY (CI): pale grey, mottled pink, M>Wp, stiff, EW dyke.			S			4,5,7 N = 12
44	5							
43	6							
42	7	7m: becoming very stiff.			S			6,10,15 N = 25
41	8							
	8.3	SILTSTONE (HW): pale grey mottled brown, distinctly altered (discolouration and increase in porosity), Dargile Formation.		8.45 - 8.65m: Sheared surface, 70°, cu, sl 9.1m: J 30°, ir, ro, fe sn	C	100	50	PL(D) = 0.4
40	9			9.65m: J 10°, ir, ro, fe sn 9.77m: Sheared seam, 2	C	100	47	

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 1.4 m

TYPE OF BORING: Solid flight auger to 2 m; HQ coring to 4.5 m; washboring to 8 m

WATER OBSERVATIONS: No free groundwater observed in top 2 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.3 m AHD
EASTING: 324040
NORTHING: 5817876
DIP/AZIMUTH: 90°/--

BORE No: DP 04
PROJECT No: 95409.00
DATE: 13/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering	Graphic Log	Rock Strength	Water	Fracture Spacing (m)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
39		SILTSTONE (HW): pale grey mottled brown, distinctly altered (discolouration and increase in porosity), Dargile Formation. *(continued)*	EW HW MW SW FS FR		Ex Low Very Low Low Medium High Very High Ex High		0.01 0.05 0.10 0.50 1.00	mm, 45°, pl	C	100	47	
38	11							10.7m: EW seam, 20 mm 10.86m: EW seam, 20 mm	C	100	69	Saturated moisture content = 11.6%
37	12								C	100	34	
36	13 13.0	SILTY CLAY (CI): brown, mottled grey, M=Wp, very stiff-hard, EW siltstone.										
	13.3	SILTSTONE (MW): grey brown, with interbedded sandstone (20%), Dargile Formation.						13.33 - 13.53m: healed J, sv, fe 13.65 - 13.85m: healed J, sv, fe	C	100	41	Saturated moisture content = 7.5%
35	14								C	100	76	
34	15											Saturated moisture content = 9.5%
33	16							15.65m: healed J, 70°, fe 16.0 - 16.4m: healed J, sv, fe	C	100	55	
32	17							16.75m: healed J, 70°, fe				Saturated moisture content = 8.1%
	17.1	Bore discontinued at 17.1m										
31	18											
30	19											

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 1.4 m

TYPE OF BORING: Solid flight auger to 2 m; HQ coring to 4.5 m; washboring to 8 m

WATER OBSERVATIONS: No free groundwater observed in top 2 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

Douglas Partners
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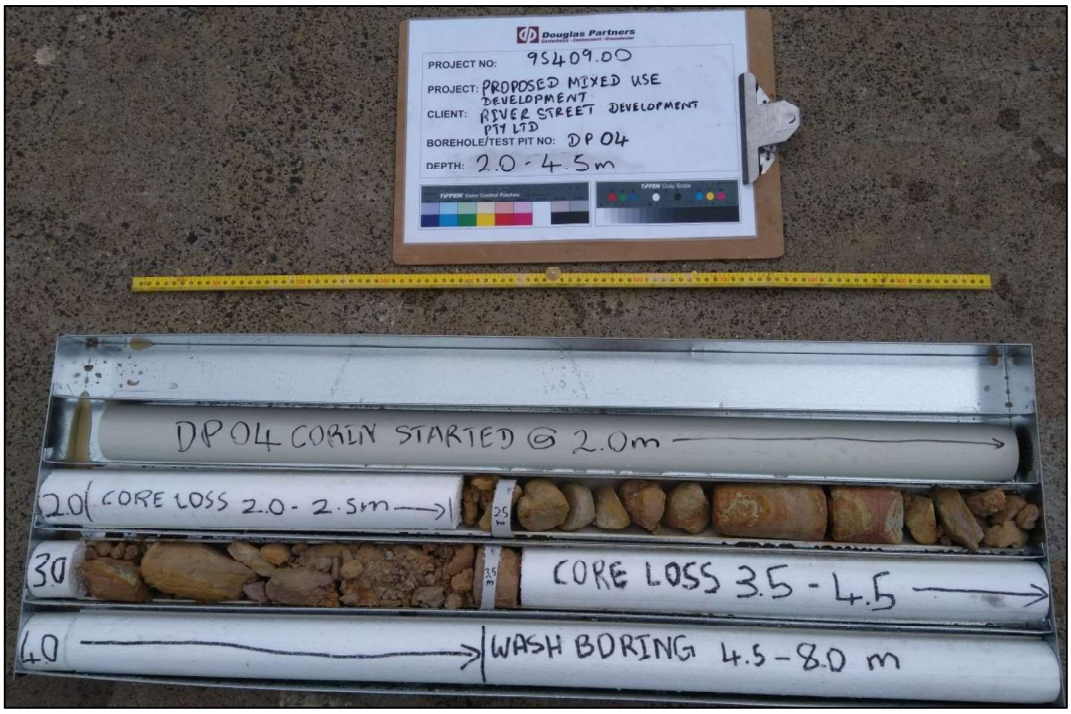
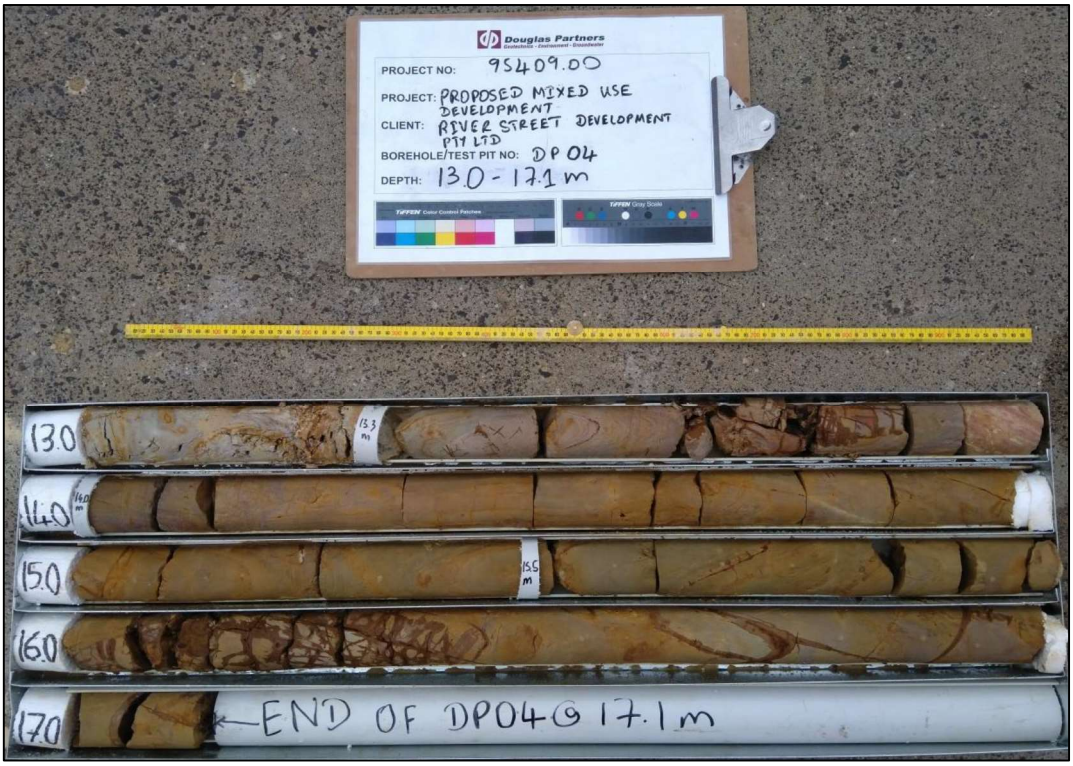




Douglas Partners Geotechnics / Environment / Groundwater	**Core Photographs – DP04**	Project No. : 95409.00
	Multi-use Development 25 Separation Street, Northcote	Plate No : 2 - 1
	Client : River Street Developments Pty Ltd	Date: Mar 2020



Douglas Partners Geotechnics / Environment / Groundwater	**Core Photographs – DP04**	Project No. : 95409.00
	Multi-use Development 25 Separation Street, Northcote	Plate No : 2 - 2
	Client : River Street Developments Pty Ltd	Date: Mar 2020

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.4 m AHD
EASTING: 324068
NORTHING: 5817946
DIP/AZIMUTH: 90°/--

BORE No: DP 08
PROJECT No: 95409.00
DATE: 12/11/2019
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Type	Core Rec. %	RQD %	Test Results & Comments
49	0.2	Concrete.		E			
		FILL / SANDY GRAVEL (GP): fine to medium grained sand, grey brown, moist, medium dense.		S			13,7,6 N = 13 disiturbed and enviro sample at 0.5 m
48	1	0.9 m: with brick and concrete fragments.					
		1.5 m: becoming loose.		S			1,5,2 N = 7
47	2						
46	3						
45	4			S			5/450 mm
44	5			S			7,3,4 N = 7
43	6						
	6.5	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		S			13,15,16 N = 31
42	7.0	Core Loss.					7m: CORE LOSS: 300mm
	7.3	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		C	70	14	
41	8.0	SANDSTONE (HW): orange-brown, grey mottled, Dargile Formation.					Saturated moisture content = 15.5%
	8.5	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		C	100	17	
40	9.5	SANDSTONE (HW): orange brown, with interbedded siltstone (30%), Dargile Formation.		C	100	44	
	10.0						

Degree of Weathering: EW, HW, MW, SW, FS, FR
Rock Strength: Ex Low, Very Low, Low, Medium, High, Very High, Ex High
Water
Fracture Spacing (m): 0.01, 0.05, 0.10, 0.50, 1.00
Discontinuities: B - Bedding, J - Joint, S - Shear, F - Fault
Sampling & In Situ Testing

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 2.4 m

TYPE OF BORING: Solid flight auger 3 m; washboring to 3.5 m; HQ coring to end

WATER OBSERVATIONS: No free groundwater observed in top 3 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.4 m AHD
EASTING: 324068
NORTHING: 5817946
DIP/AZIMUTH: 90°/--

BORE No: DP 08
PROJECT No: 95409.00
DATE: 12/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
39		SANDSTONE (HW): orange brown, with interbedded siltstone (30%), bedding ~30°, Dargile Formation.							C	100	44	Saturated moisture content = 11.6%
38	11							10.75m: ls, 10mm, 40° 10.8m: ls, 10mm, 40° 10.88m: ls, 10mm, 40° 10.95m: ls, 10mm, 40°	C	100	0	
37		11.3 m: bedding ~60-70°.						11.14m: Bp, 30°, pl, sm, fe sn	C	100	91	
36	12							11.81 - 11.92m: Bp, 70°, pl sm fe sn	C	100	55	
35	13							12.58m: J, 30°, pl, ro, fe sn 12.65m: J, 30°, ir, ro, fe sn	C	100	100	PL(D) = 0.27
34	14								C	100	88	
33	15 15.0	SILTSTONE (MW): grey brown, with interbedded sandstone (20%), Dargile Formation.							C	100	20	Saturated moisture content = 8.8%
32	16							16.05m: Bp, 70°, pl, sm, fe sn, discon 16.4m: Bp, 70°, pl, sm, fe sn	C	100	58	
31	17							17.8m: Bp, 70°, pl, sm, fe sn	C	100	35	Saturated moisture content = 8.1%
30	18							18.6m: Cs, 400 mm	C	100	54	Saturated moisture content = 7.2%
	19							19.3m: Cs, 100 mm				
	20.0	Bore discontinued at 20.0m										

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 2.4 m

TYPE OF BORING: Solid flight auger 3 m; washboring to 3.5 m; HQ coring to end

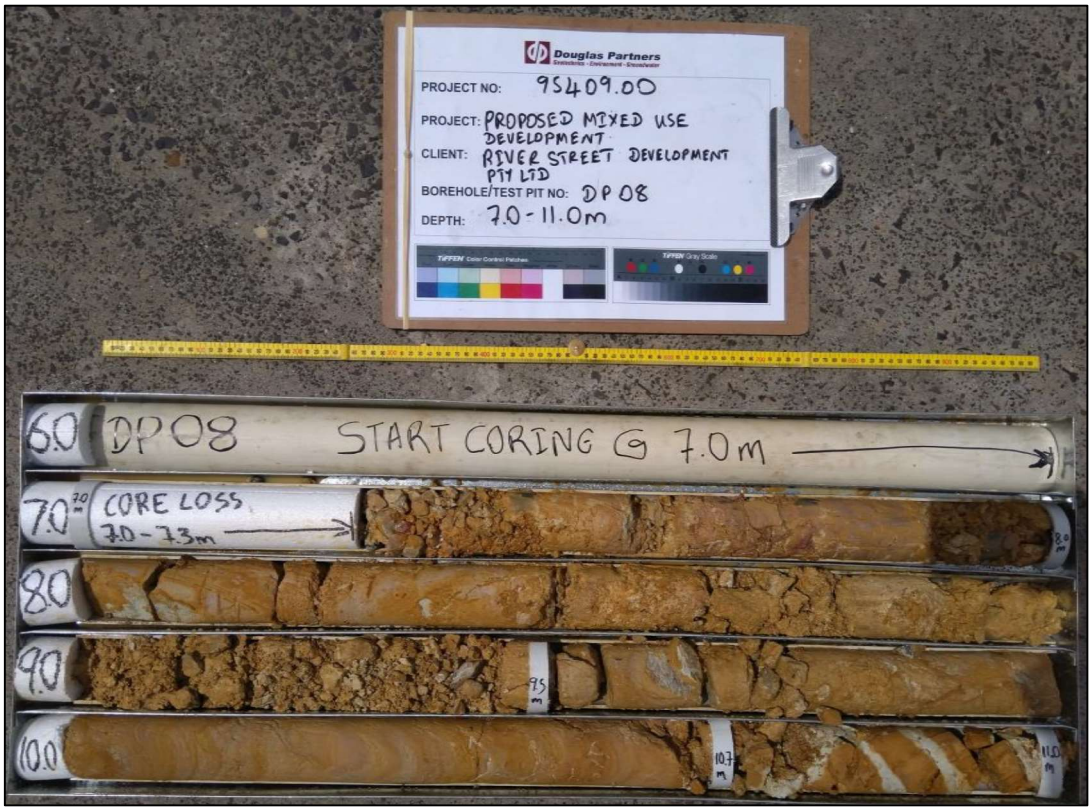
WATER OBSERVATIONS: No free groundwater observed in top 3 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater





Douglas Partners Geotechnics / Environment / Groundwater	**Core Photographs – DP08**	Project No. :	95409.00
	Multi-use Development 25 Separation Street, Northcote	Plate No :	3 - 1
	Client : River Street Developments Pty Ltd	Date:	Mar 2020



Douglas Partners Geotechnics / Environment / Groundwater	**Core Photographs – DP08**	Project No. :	95409.00
	Multi-use Development 25 Separation Street, Northcote	Plate No :	3 - 2
	Client : River Street Developments Pty Ltd	Date:	Mar 2020

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 323937
NORTHING: 5817919
DIP/AZIMUTH: 90°/--

BORE No: DP 01
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.11	Concrete slab.		E	0.1–0.2	DP01-0.11			
	0.5	FILL / SILTY SAND (SP): brown, fine to coarse grained sand, with fine to coarse grain basalt gravel and concrete gravel, trace red brick fragments, moist.		E	0.4–0.5	DP01-0.4			
	1	FILL / SILTY CLAY (CI): Orange, yellow, grey and brown, with fine to coarse grained sand and fine grain siltstone gravel, trace fine grained slag/ash gravels and plastic fragments, moist.		E	0.9–1.0	DP01-0.9			
	1.3	FILL / SANDY CLAY (CI): Brown, fine to coarse grain sand, trace fine grain brick gravels and coarse grained slag/ash sands, moist.		E	1.9–2.0	DP01-1.9			
	2	2.7 m: intermittent bands of sand and gravel.		E	2.9–3.0	DP01-2.9			
	3	3.5 m: with medium to coarse slag/ash gravel.		E	3.9–4.0	DP01-3.9			
	4	4.5 m: with siltstone and red brick gravel and cobbles.		E	4.9–5.0	DP01-4.9			
	5	5.5 m: wet.		E	5.9–6.0	DP01-5.9		▼	
	6			E	6.9–7.0	DP01-6.9			
	7								
	8								
	9			E	9.1–9.2	DP01-9.1			
	9.2	Bore discontinued at 9.2m. Auger refusal.							

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: Groundwater below 5.5 m.
REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 324027
NORTHING: 5817880
DIP/AZIMUTH: 90°/--

BORE No: DP 03
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.18	Concrete slab.							
	0.3	FILL / CRUSHED ROCK : grey, fine to coarse grained sand, fine to coarse angular basalt rock.		E	0.18 0.2	DP03-0.18			
				E	0.4 0.5	DP03-0.4			
		CLAYEY SILT (ML): pale brown, trace fine to coarse grained sand, trace fine grain siltstone gravel, M<Wp, hard, EW siltstone.							
1	1.0			E	0.9 1.0	DP03-0.9			1
		Bore discontinued at 1.0m							
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: No free groundwater observed.
REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 324061
NORTHING: 5817880
DIP/AZIMUTH: 90°/--

BORE No: DP 05
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.03	Asphalt.			0.13				
	0.3	Crushed rock.		E	0.3	DP05-0.03			
		CLAYEY SILT (ML): pale brown, trace fine to coarse grained sand, trace fine grain siltstone gravel, M<Wp, hard, EW siltstone.		E	0.4 0.5	DP05-0.4			
	1.0	0.75 m: grey.		E	0.9 1.0	DP05-0.9			
		Bore discontinued at 1.0m							

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: No free groundwater observed.
REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 324083
NORTHING: 5817877
DIP/AZIMUTH: 90°/--

BORE No: DP 06
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.03	Asphalt.		E	0.0	DP06-0.03			
	0.25	Crushed rock.			0.15				
		FILL / GRAVELLY SAND (SP): brown, fine to coarse grain sand, fine to medium grain siltstone, basalt and red brick gravels, humid.		E	0.4 0.5	DP06-0.4			
		0.75 m: with silt and clay.		E	0.9 1.0	DP06-0.9			
		1.5 m: trace white fibres.		E	1.9 2.0	DP06-1.9	Disturbed sample 1.9 - 2 m		
		2.5 m: increased clay content.		E	2.8 2.9	DP06-2.8			
	2.9	Bore discontinued at 2.9m. Auger refusal.							

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: No free groundwater observed.
REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 324080
NORTHING: 5817894
DIP/AZIMUTH: 90°/--

BORE No: DP 07
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.035	Asphalt.							
	0.2	Crushed rock.		E	0.2-0.3	DP07-0.2			
		FILL / SANDY CLAY (CI): brown, fine to coarse grained sand, with fine grain brick gravel, trace slag/ash sands, M>Wp.							
	0.9			E	0.9-1.0	DP07-0.9			
1		FILL / GRAVELLY SAND (SP): grey brown, fine to coarse grain sand, fine to medium angular brick gravel, humid.							1
		1.5 m: coarse grain brick gravel and cobbles, trace fine to coarse grain angular slag / ash gravel.							
2				E	1.9-2.0	DP07-1.9			2
	2.8								
3		FILL / GRAVELLY SAND (SP): orange brown, fine to coarse grain sand, fine to coarse grain red brick gravel and cobbles, humid.		E	2.9-3.0	DP07-2.9			3
		3.5 m: grey brown, with clay.							
4				E	3.9-4.0	DP07-3.9			4
5				E	4.9-5.0	DP07-4.9			5
6	6.0	Bore discontinued at 6.0m							6
7									7
8									8
9									9

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: No free groundwater observed.
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Approx. 1.5 m east of possible UST.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: --
EASTING: 324052
NORTHING: 5817962
DIP/AZIMUTH: 90°/--

BORE No: DP 09
PROJECT No: 95409.00
DATE: 11/11/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.16	Concrete slab.		E	0.16 0.20	DP09-0.16			
	0.45	Crushed rock.							
		CLAYEY SILT (ML): orange brown, trace fine to coarse grained sand, trace fine grain siltstone gravel, M<Wp, hard, EW siltstone.		E	0.9 1.0	DP09-0.9			
				E	1.9 2.0	DP09-1.9			
	2.0	Bore discontinued at 2.0m							

RIG: Custom 4WD **DRILLER:** Horizon Drilling **LOGGED:** ARP **CASING:** NA
TYPE OF BORING: Solid flight auger
WATER OBSERVATIONS: No free groundwater observed.
REMARKS: Location coordinates are in WGS 84 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Appendix E

Tabulated Laboratory Results
Laboratory Reports

Douglas Partners
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Table E1
Comparison of Soil Laboratory Results to Waste Categorisation Criteria

Sample No	Strata	Sample Depth	Sample Date	pH	Metals: Arsenic Total	Arsenic ASLP	Cadmium Total	Cadmium ASLP	Chromium Total	Chromium VI	Chromium VI ASLP	Copper Total	Copper ASLP	Lead Total	Lead ASLP	Mercury Total	Mercury ASLP	Molybdenum Total	Molybdenum ASLP	Nickel Total	Nickel ASLP	Selenium Total	Selenium ASLP	Silver Total	Silver ASLP	Tin	Zinc Total	Zinc ASLP	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C28-C36	Benzene	Toluene	Ethylbenzene	Xylenes	Styrene	Total MAH	Total Fluoride	Cyanide	Phenols: Total Phenols (Halogenated)	Total Phenols (Non-Halogenated)	Halogenated Volatiles (HVOLS)	Chlorinated Hydrocarbons (CHCs)	Organochlorine Pesticides (OCP)	Polychlorinated Biphenyls	PAH: Benzo(a)Pyrene (BaP)	PAH ASLP BaP	Total PAH	PAH ASLP	Asbestos
				(pH units)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	Presence/absence
MAXIMUM FOR FILL MATERIAL[1]				<4 - >9	20		3			1		100		300		1		40		60		10		10		50	200		100	1,000			1					7	450	50	1	60		1		2	1		20		
MAXIMUM FOR CATEGORY C[1]					500	0.7	100	0.2		500	5	5,000	200	1,500	1	75	0.1		0.5	3,000	2		1	180		500	35,000	300	650	10,000			4					70	10,000	2,500	10	560		10			5	0.001	100		
MAXIMUM FOR CATEGORY B[1]					2,000	2.8	400	0.8		2,000	20	20,000	800	6,000	4	300	0.4		20	12,000	8		4	720			140,000	1,200	2,600	40,000			16					240	40,000	10,000	320	2,200		50			20	0.004	400		
Fill																																																			
DP01-0.9	**Fill (Silty CLAY)**	**0.9-1.0**	11/11/2019	**9.2**	<5		<0.2			<1		24		23		<0.05		<5		19		<3		<5		<5	37		<20	<20	<50	<50	<0.5	<0.5	<0.5	<1	<0.5	<1	400	<5	<0.5	<30	<0.5	<0.1	<0.05	<0.1	0.1		0.7		
DP01-3.9	Fill (Sandy CLAY)	3.9-4.0	11/11/2019		9		<0.2		29			31		120		0.11		<5		37		<3		<5		7	91		<20	<20	<50	<50															0.5		5.2		
DP02-0.2	**Fill (Silty CLAY)**	**0.2-0.3**	13/11/2019		9		0.2		28			35		89		0.13		<5		38		<3		<5		<5	120		<20	<20	100	89															3.3		34		
DP02-0.5	**Fill (Silty CLAY)**		13/11/2019		10	<0.01	0.3	0.004	20		<0.01	29	<0.01	370	3.6	0.43	<0.001	<5	<0.01	17	0.02	<3	<0.01	<5	<0.01	7	100	0.28																							
DP02-3.9	**Fill (Silty CLAY)**	**3.9-4.0**	13/11/2019		9		0.8		39			480		290		0.21		<5		62		<3		<5		150	1,800		<20	<20	73	<50															1.4		17		
DP06-0.4	Fill (Gravelly SAND)	0.4-0.5	11/11/2019		<5		<0.2		22			29		18		<0.05		<5		59		<3		<5		<5	60		<20	<20	<50	<50															0.2		1.2		
DP06-1.9	Fill (Gravelly SAND)	1.9-2.0	11/11/2019																																															None
DP06-2.8	Fill (Gravelly SAND)	2.8-2.9	11/11/2019		<5		0.5		83			42		47		<0.05		<5		15		<3		<5		<5	63		<20	<20	180	220															0.3		3.8		
DP07-1.9	**Fill (Gravelly SAND)**	**1.9-2.0**	11/11/2019	9	<5		<0.2			<1		18		13		<0.05		<5		13		<3		<5		<5	32		<20	<20	50	<50	<0.5	<0.5	<0.5	<1	<0.5	<1	300	<5	<0.5	<30	<0.5	<0.1	<0.05	<0.1	1.4		16		
DP07-4.9	**Fill (Gravelly SAND)**	**4.9-5.0**	11/11/2019		<5		<0.2		22			16		14		<0.05		<5		19		<3		<5		<5	39		<20	<20	200	84															**6.3**	<0.001	68	0.003	
DP08-0.5	Fill (Sandy GRAVEL)	0.5-0.6	11/11/2019		<5		<0.2		9			11		6		0.2		<5		37		<3		<5		<5	21		<20	<20	<50	<50															<0.1		<0.1		
Natural Soils																																																			
DP03-0.9	Clayey SILT	0.9-1.0	11/11/2019		5		<0.2		26			24		11		<0.05		<5		<5		<3		<5		<5	55		<20	<20	<50	<50															<0.1		<0.1		
DP04-4.5	Silty CLAY	0.5-0.6	12/11/2019		9		<0.2		25			42		15		<0.05		<5		<5		<3		<5		<5	37		<20	<20	<50	<50															<0.1		<0.1		
DP05-0.9	Clayey SILT	0.9-1.0	11/11/2019		<5		<0.2		6			<5		7		<0.05		<5		<5		<3		<5		<5	<5		<20	<20	<50	<50															<0.1		<0.1		
DP09-1.9	Clayey SILT	1.9-2.0	11/11/2019		<5		<0.2		15			15		5		<0.05		<5		<5		<3		<5		<5	11		<20	<20	<50	<50															<0.1		<0.1		

Notes

	A blank space indicates no test performed, or no criteria available
LOR5	Limit of reporting has been raised due to high moisture content, insufficient sample or matrix interference
ASLP	Australian Standard Leaching Procedure - Leachable Concentration
#	Represents exceedance of the EPA Fill Material criteria and sample tested classifies as Category C Contaminated Soil
#	Represents exceedance of the EPA Category C Contaminated Soil criteria and sample tested classifies as Category B Contaminated Soil

References for Upper Limits

1) Environment Protection Authority of Victoria (EPA), June 2009: EPA Publication IWRG621 *"Soil Hazard Categorisation & Management"*.

ALS Water

CERTIFICATE OF ANALYSIS

Batch No:	**19-53958**	*Page*	Page 1 of 34
Final Report	793338	*Laboratory*	Scoresby Laboratory
		Address	Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
Client:	**Douglas Partners Pty Ltd**	*Phone*	03 8756 8000
		Fax	03 9763 1862
Contact:	**Alex Patterson**	Contact:	Tuyen Nguyen
Address:	231 Normanby Road SOUTH MELBOURNE VIC 3205		Client Manager Tuyen.Nguyen@alsglobal.com
Client Program Ref:	**95409-00 Northcote**	Date Sampled:	11-Nov-2019 - 13-Nov-2019
ALS Program Ref:	**DOUGLAS**	Date Samples Received:	15-Nov-2019
PO No:	**148973**	*Date Issued:*	**25-Nov-2019**

The hash (#) below indicates methods not covered by NATA accreditation in the performance of this service .

Analysis	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*
BTEXN	WP074	Scoresby	**CHC**	WP084	Scoresby	**Cyanide**	WK026SF	Scoresby
Total Fluoride	QWI-EN.WK040T	Scoresby	**HVOL**	WP074	Scoresby	**MAH**	WP125 & WP074	Scoresby
Moisture	WA055	Scoresby	**MS Total Metals**	WG020B	Scoresby	**OCP**	WP068A	Scoresby
PAH	WP075B	Scoresby	**PCB**	WP066	Scoresby	**pH**	EA002	Scoresby
Phenols(Halo)	WP075A	Scoresby	**Phenols(NonHalo)**	WP075A	Scoresby	**Total Cr 6+ DA**	EG048G	Scoresby
TRH F2 #	WP071	Scoresby	**TRH & TPH (>C10)**	WP071	Scoresby	**TRH (C6-C10) & F1**	WP071 (F1 not NATA)	Scoresby
Asbestos	EA200	ALS Melbourne						

Asbestos analysis conducted at ALS Springvale. 4 Westall Rd Springvale VIC 3170. The results may be found in their Work Order: EM1919665. NATA Accredited Laboratory Number: 825.

Please note:

			Asbestos
6339554	11-11-19	DP06-1.9 is the same as #6339605	Not Detected
6339568	11-11-19	PACM-1 is the same as #6339727	Chrysotile+Amosite Detected

Accreditation No. 992
Accredited for compliance with
ISO/IEC 17025 - Testing

Signatories

Legionella species refers to Legionella species other than Legionella pneumophila

Measurement Uncertainties values for your compliance results are available at this link

Name	*Title*	*Name*	*Title*
Brad Snibson	**Client Manager**	**Chatura Perera**	**Team Leader Nutrients**
Hao Zhang	**Team Leader Organics**	**John Earl**	**Team Leader Metals**
Tuyen Nguyen	**Client Manager**		

Batch No: 19-53958
Report Number: 793338
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
					Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
					Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**								
BTEXN	Benzene	71-43-2	<0.5	mg/kg	<0.5						
BTEXN	Toluene	108-88-3	<0.5	mg/kg	<0.5						
BTEXN	Ethyl Benzene	100-41-4	<0.5	mg/kg	<0.5						
BTEXN	Xylene - m&p	108-38-3 /	<1	mg/kg	<1						
BTEXN	Xylene - O	95-47-6	<0.5	mg/kg	<0.5						
BTEXN	Naphthalene	91-20-3	<0.5	mg/kg	<0.5						
BTEXN	Total Xylenes	1330-20-7	<1	mg/kg	<1						
BTEXN	BTEX (Sum)	BTEX	<1	mg/kg	<1						
Analysis	**Analyte**	**CAS #**	**LOR**								
CHC	1,2,3,4-Tetrachlorobenzene	634-66-2	<0.1	mg/kg	<0.1						
CHC	1,2,3,5-Tetrachlorbenzene	634-90-2	<0.1	mg/kg	<0.1						
CHC	1,2,3-Trichlorobenzene	87-61-6	<0.1	mg/kg	<0.1						
CHC	1,2,4,5-Tetrachlorobenzene	95-94-3	<0.1	mg/kg	<0.1						
CHC	1,2,4-Trichlorobenzene	120-82-1	<0.1	mg/kg	<0.1						
CHC	1,2-Dichlorobenzene	95-50-1	<0.1	mg/kg	<0.1						
CHC	1,3,5-Trichlorobenzene	108-70-3	<0.1	mg/kg	<0.1						
CHC	1,3-Dichlorobenzene	541-73-1	<0.1	mg/kg	<0.1						
CHC	1,4-Dichlorobenzene	106-46-7	<0.1	mg/kg	<0.1						
CHC	2-Chloronaphthalene	91-58-7	<0.1	mg/kg	<0.1						
CHC	Benzal Chloride	98-87-3	<0.1	mg/kg	<0.1						
CHC	Benzotrichloride	98-07-7	<0.1	mg/kg	<0.1						
CHC	Benzylchloride	100-44-7	<0.1	mg/kg	<0.1						
CHC	Hexachloroethane	67-72-1	<0.1	mg/kg	<0.1						
CHC	Hexachlorobutadiene	87-68-3	<0.1	mg/kg	<0.1						
CHC	Hexachlorocyclopentadiene	77-47-4	<0.1	mg/kg	<0.1						
CHC	Pentachlorobenzene	608-93-5	<0.1	mg/kg	<0.1						

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

				Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
				Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
				Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**							
HVOL	1,1,1,2-Tetrachloroethane	630-20-6	<0.5	mg/kg	<0.5					
HVOL	1,1,2,2-Tetrachloroethane	79-34-5	<0.5	mg/kg	<0.5					
HVOL	1,1- Dichloroethane	75-34-3	<0.5	mg/kg	<0.5					
HVOL	1,1-Dichloroethene	75-35-4	<0.5	mg/kg	<0.5					
HVOL	1,1-Dichloropropene	563-58-6	<0.5	mg/kg	<0.5					
HVOL	1,2,3-Trichloropropane	96-18-4	<0.5	mg/kg	<0.5					
HVOL	1,2-Dibromo-3-Chloropropane	96-12-8	<0.5	mg/kg	<0.5					
HVOL	1,2-Dichloroethene [cis]	540-59-0(cis)	<0.5	mg/kg	<0.5					
HVOL	1,2-Dichloroethene [trans]	540-59-0(trans)	<0.5	mg/kg	<0.5					
HVOL	1,2-Dichloroethane	107-06-2	<0.5	mg/kg	<0.5					
HVOL	1,2-Dichloropropane	78-87-5	<0.5	mg/kg	<0.5					
HVOL	1,3-Dichloropropane	142-28-9	<0.5	mg/kg	<0.5					
HVOL	1,3-Dichloropropene [cis]	10061-01-5	<0.5	mg/kg	<0.5					
HVOL	1,3-Dichloropropene [trans]	10061-02-6	<0.5	mg/kg	<0.5					
HVOL	2,2-Dichloropropane	594-20-7	<0.5	mg/kg	<0.5					
HVOL	2-Chlorotoluene	95-49-8	<0.5	mg/kg	<0.5					
HVOL	4-Chlorotoluene	106-43-4	<0.5	mg/kg	<0.5					
HVOL	Bromochloromethane	74-97-5	<0.5	mg/kg	<0.5					
HVOL	Bromodichloromethane	75-27-4	<0.5	mg/kg	<0.5					
HVOL	Bromobenzene	108-86-1	<0.5	mg/kg	<0.5					
HVOL	Bromoform (Tribromomethane)	75-25-2	<0.5	mg/kg	<0.5					
HVOL	Carbon Tetrachloride	56-23-5	<0.5	mg/kg	<0.5					
HVOL	Chloroform (Trichloromethane)	67-66-3	<0.5	mg/kg	<0.5					
HVOL	Chlorobenzene	108-90-7	<0.5	mg/kg	<0.5					
HVOL	Dibromochloromethane	124-48-1	<0.5	mg/kg	<0.5					
HVOL	Dibromomethane	74-95-3	<0.5	mg/kg	<0.5					
HVOL	1,2-Dibromoethane	106-93-4	<0.5	mg/kg	<0.5					
HVOL	Dichloromethane	75-09-2	<1	mg/kg	<1					
HVOL	Trichlorofluoromethane (CFC11)	75-69-4	<2	mg/kg	<2					

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MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
					Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
					Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
HVOL	Tetrachloroethene	127-18-4	<0.5	mg/kg		<0.5					
HVOL	Vinyl Chloride (Monomer)	75-01-4	<1	mg/kg		<1					
HVOL	1,1,1-Trichloroethane	71-55-6	<0.5	mg/kg		<0.5					
HVOL	1,1,2-Trichloroethane	79-00-5	<0.5	mg/kg		<0.5					
HVOL	Trichloroethene	79-01-6	<0.5	mg/kg		<0.5					
Analysis	**Analyte**	**CAS #**	**LOR**								
MAH	Styrene	100-42-5	<0.5	mg/kg		<0.5					
Analysis	**Analyte**	**CAS #**	**LOR**								
OCP	BHC (alpha isomer)	319-84-6	<0.05	mg/kg		<0.05					
OCP	a-Endosulphan	959-98-8	<0.05	mg/kg		<0.05					
OCP	Aldrin	309-00-2	<0.05	mg/kg		<0.05					
OCP	BHC (beta isomer)	319-85-7	<0.05	mg/kg		<0.05					
OCP	b-Endosulphan	33213-65-9	<0.05	mg/kg		<0.05					
OCP	Chlordane	57-74-9	<0.05	mg/kg		<0.05					
OCP	cis-Chlordane	5103-71-9	<0.05	mg/kg		<0.05					
OCP	trans-Chlordane	5103-74-2	<0.05	mg/kg		<0.05					
OCP	BHC (delta isomer)	319-86-8	<0.05	mg/kg		<0.05					
OCP	DDD	72-54-8	<0.05	mg/kg		<0.05					
OCP	DDE	72-55-9	<0.05	mg/kg		<0.05					
OCP	DDT	50-29-3	<0.05	mg/kg		<0.05					
OCP	Dieldrin	60-57-1	<0.05	mg/kg		<0.05					
OCP	Sum of alpha-, beta- and Endosulphan	115-29-7	<0.05	mg/kg		<0.05					
OCP	Endosulfan Sulfate	1031-07-8	<0.05	mg/kg		<0.05					
OCP	Endrin	72-20-8	<0.05	mg/kg		<0.05					
OCP	Endrin Aldehyde	7421-93-4	<0.05	mg/kg		<0.05					
OCP	Endrin Ketone	53494-70-5	<0.05	mg/kg		<0.05					
OCP	Hexachlorobenzene	118-74-1	<0.05	mg/kg		<0.05					
OCP	Heptachlor Epoxide	1024-57-3	<0.05	mg/kg		<0.05					
OCP	Heptachlor	76-44-8	<0.05	mg/kg		<0.05					
OCP	BHC (gamma isomer) [Lindane]	58-89-9	<0.05	mg/kg		<0.05					

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Calculated results are based on raw data.

Batch No: 19-53958
Report Number: 793338
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

					Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
					Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
					Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
OCP	Methoxychlor	72-43-5	<0.05	mg/kg		<0.05					
OCP	Oxychlordane	27304-13-8	<0.05	mg/kg		<0.05					
OCP	Sum of DDD, DDE and DDT	DDT+DDE+DD	<0.05	mg/kg		<0.05					
OCP	Sum of Aldrin and Dieldrin	309-00-2 +	<0.05	mg/kg		<0.05					
Analysis	**Analyte**	**CAS #**	**LOR**								
PAH	Acenaphthene	83-32-9	<0.1	mg/kg		<0.1	<0.1	<0.2 LORR	<0.1	<0.1	<0.1
PAH	Acenaphthylene	208-96-8	<0.1	mg/kg		<0.1	<0.1	0.6	<0.1	<0.1	<0.1
PAH	Anthracene	120-12-7	<0.1	mg/kg		<0.1	0.1	0.9	0.7	<0.1	<0.1
PAH	Benz(a)anthracene	56-55-3	<0.1	mg/kg		<0.1	0.6	3.8	1.9	<0.1	<0.1
PAH	Benzo(a)pyrene	50-32-8	<0.1	mg/kg		0.1	0.5	3.3	1.4	<0.1	<0.1
PAH	Benzo(b)fluoranthene	205-99-2	<0.1	mg/kg		<0.1	0.4	2.2	1.0	<0.1	<0.1
PAH	Benzo(g,h,i)perylene	191-24-2	<0.1	mg/kg		<0.1	0.3	2.0	0.7	<0.1	<0.1
PAH	Benzo(k)fluoranthene	207-08-9	<0.1	mg/kg		<0.1	0.4	2.2	1.0	<0.1	<0.1
PAH	Chrysene	218-01-9	<0.1	mg/kg		0.1	0.4	2.3	1.1	<0.1	<0.1
PAH	Dibenz(a,h)anthracene	53-70-3	<0.1	mg/kg		<0.1	<0.1	0.4	0.2	<0.1	<0.1
PAH	Fluoranthene	206-44-0	<0.1	mg/kg		0.2	0.9	5.3	2.9	<0.1	<0.1
PAH	Fluorene	86-73-7	<0.1	mg/kg		<0.1	<0.1	<0.2 LORR	0.2	<0.1	<0.1
PAH	Indeno(1,2,3-cd)pyrene	193-39-5	<0.1	mg/kg		<0.1	0.3	1.8	0.7	<0.1	<0.1
PAH	Naphthalene	91-20-3	<0.1	mg/kg		<0.1	<0.1	<0.2 LORR	0.2	<0.1	<0.1
PAH	Phenanthrene	85-01-8	<0.1	mg/kg		0.1	0.5	3.4	2.2	<0.1	<0.1
PAH	Pyrene	129-00-0	<0.1	mg/kg		0.2	0.8	5.6	2.5	<0.1	<0.1
PAH	Total PAH	TOTALPAH	<0.1	mg/kg		0.7	5.2	34	17	<0.1	<0.1
PAH	BaP TEQ (zero)	BaP_TEQ_0xE	<0.1	mg/kg		0.1	0.7	4.7	2.1	<0.1	<0.1
PAH	BaP TEQ (half LOR)	BaP_TEQ_0.5x	<0.1	mg/kg		0.2	0.7	4.7	2.1	0.1	0.1
PAH	BaP TEQ (LOR)	BaP_TEQ_1.0x	0.2	mg/kg		0.2	0.8	4.7	2.1	0.2	0.2
Analysis	**Analyte**	**CAS #**	**LOR**								
PCB	Aroclor 1016	12674-11-2	<0.1	mg/kg		<0.1					
PCB	Aroclor 1221	11104-28-2	<0.1	mg/kg		<0.1					
PCB	Aroclor 1232	11141-16-5	<0.1	mg/kg		<0.1					
PCB	Aroclor 1242	53469-21-9	<0.1	mg/kg		<0.1					

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
					Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
					Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PCB	Aroclor 1248	12672-29-6	<0.1	mg/kg		<0.1					
PCB	Aroclor 1254	11097-69-1	<0.1	mg/kg		<0.1					
PCB	Aroclor 1260	11096-82-5	<0.1	mg/kg		<0.1					
PCB	Total PCBs	1336-36-3	<0.1	mg/kg		<0.1					
Analysis	**Analyte**	**CAS #**	**LOR**								
Phenols(Halo)	4-Chloro-3-Methylphenol	59-50-7	<0.5	mg/kg		<0.5					
Phenols(Halo)	2-Chlorophenol	95-57-8	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,4-Dichlorophenol	120-83-2	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,6-Dichlorophenol	87-65-0	<0.5	mg/kg		<0.5					
Phenols(Halo)	Pentachlorophenol	87-86-5	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,3,4,5-Tetrachlorophenol	4901-51-3	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,3,4,6-Tetrachlorophenol	58-90-2	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,3,5,6-Tetrachlorophenol	935-95-5	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,4,5-Trichlorophenol	95-95-4	<0.5	mg/kg		<0.5					
Phenols(Halo)	2,4,6-Trichlorophenol	88-06-2	<0.5	mg/kg		<0.5					
Phenols(Halo)	Total Phenols (Halogenated)	64743-03-9(Hal	<0.5	mg/kg		<0.5					
Analysis	**Analyte**	**CAS #**	**LOR**								
Phenols(NonHalo)	Phenol	108-95-2	<0.5	mg/kg		<0.5					
Phenols(NonHalo)	Total Cresols	1319-77-3	<1	mg/kg		<1					
Phenols(NonHalo)	2,4-Dimethylphenol	105-67-9	<0.5	mg/kg		<0.5					
Phenols(NonHalo)	2,4-Dinitrophenol	51-28-5	<30	mg/kg		<30					
Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	534-52-1	<10	mg/kg		<10					
Phenols(NonHalo)	2-Nitrophenol	88-75-5	<0.5	mg/kg		<0.5					
Phenols(NonHalo)	4-Nitrophenol	100-02-7	<0.5	mg/kg		<0.5					
Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	<30	mg/kg		<30					
Phenols(NonHalo)	Dinoseb	88-85-7	<10	mg/kg		<10					
Phenols(NonHalo)	Total Phenols (non Halogenated)	64743-03-9(Non	<30	mg/kg		<30					
Analysis	**Analyte**	**CAS #**	**LOR**								
Moisture	Moisture %	MOISTCONTE	<2	% w/wet w		14					
pH	pH, units	pH_Lab	<0.1	Units		9.2					

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample No.	6339531	6339534	6339539	6339541	6339544	6339546
					Client Sample ID	DP01-0.9	DP01-3.9	DP02-0.2	DP02-3.9	DP03-0.9	DP04-0.5
					Sample Date	11/11/19	11/11/19	13/11/19	13/11/19	11/11/19	12/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Total Fluoride	Total Fluoride, as F	16984-48-8	<100	mg/kg		400					
Cyanide	Cyanide, as CN	57-12-5	<5	mg/kg		<5					
Total Cr 6+ DA	Hexavalent Chromium (Total) Soil DA	18540-29-9	<1	mg/kg		<1					
Analysis	**Analyte**	**CAS #**	**LOR**								
MS Total Metals	Arsenic	7440-38-2	<5	mg/kg		<5	9	9	9	5	9
MS Total Metals	Cadmium	7440-43-9	<0.2	mg/kg		<0.2	<0.2	0.2	3.8	<0.2	<0.2
MS Total Metals	Chromium	7440-47-3	<5	mg/kg			29	28	39	26	25
MS Total Metals	Copper	7440-50-8	<5	mg/kg		24	31	35	480	24	42
MS Total Metals	Lead	7439-92-1	<5	mg/kg		23	120	89	290	11	15
MS Total Metals	Mercury	7439-97-6	<0.05	mg/kg		<0.05	0.11	0.13	0.21	<0.05	<0.05
MS Total Metals	Molybdenum	7439-98-7	<5	mg/kg		<5	<5	<5	<5	<5	<5
MS Total Metals	Nickel	7440-02-0	<5	mg/kg		19	37	38	62	<5	<5
MS Total Metals	Selenium	7782-49-2	<3	mg/kg		<3	<3	<3	<3	<3	<3
MS Total Metals	Silver	7440-22-4	<5	mg/kg		<5	<5	<5	<5	<5	<5
MS Total Metals	Tin	7440-31-5	<5	mg/kg		<5	7	<5	150	<5	<5
MS Total Metals	Zinc	7440-66-6	<5	mg/kg		37	91	120	1800	55	37
Analysis	**Analyte**	**CAS #**	**LOR**								
TRH (C6-C10) &	TPHC6-C9	C6-C9	<20	mg/kg		<20	<20	<20	<20	<20	<20
TRH (C6-C10) &	TRHC6-C10	C6-C10	<20	mg/kg		<20	<20	<20	<20	<20	<20
TRH (C6-C10) &	TRHC6-C10 minus BTEX	F1-BTEX	<20	mg/kg		<20	<20	<20	<20	<20	<20
Analysis	**Analyte**	**CAS #**	**LOR**								
TRH F2	TRH>C10-C16 minus Naphthalene	F2-NAPHTHAL	<20	mg/kg		<20	<20	<20	<20	<20	<20
TRH & TPH	TPH C10-C14	C10-C14	<20	mg/kg		<20	<20	<20	<20	<20	<20
TRH & TPH	TPH C15-C28	C15-C28	<50	mg/kg		<50	<50	100	73	<50	<50
TRH & TPH	TPH C29-C36	C29-C36	<50	mg/kg		<50	<50	89	<50	<50	<50
TRH & TPH	TRH>C10-C16	C10-C16	<20	mg/kg		<20	<20	<20	<20	<20	<20
TRH & TPH	TRH>C16-C34	C16-C34	<50	mg/kg		<50	<50	190	120	<50	<50
TRH & TPH	TRH>C34-C40	C34-C40	<50	mg/kg		<50	<50	<50	<50	<50	<50
TRH & TPH	Sum of TRH>C10-C40	C10-C40	<50	mg/kg		<50	<50	190	120	<50	<50

LORR Limit of Reporting has been raised due to high moisture content, insufficient sample or matrix interference.

Samples not collected by ALS and are tested as received.

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Batch No: 19-53958
Report Number: 793338
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**								
BTEXN	Benzene	71-43-2	<0.5	mg/kg						<0.5	
BTEXN	Toluene	108-88-3	<0.5	mg/kg						<0.5	
BTEXN	Ethyl Benzene	100-41-4	<0.5	mg/kg						<0.5	
BTEXN	Xylene - m&p	108-38-3 /	<1	mg/kg						<1	
BTEXN	Xylene - O	95-47-6	<0.5	mg/kg						<0.5	
BTEXN	Naphthalene	91-20-3	<0.5	mg/kg						<0.5	
BTEXN	Total Xylenes	1330-20-7	<1	mg/kg						<1	
BTEXN	BTEX (Sum)	BTEX	<1	mg/kg						<1	
Analysis	**Analyte**	**CAS #**	**LOR**								
CHC	1,2,3,4-Tetrachlorobenzene	634-66-2	<0.1	mg/kg						<0.1	
CHC	1,2,3,5-Tetrachlorbenzene	634-90-2	<0.1	mg/kg						<0.1	
CHC	1,2,3-Trichlorobenzene	87-61-6	<0.1	mg/kg						<0.1	
CHC	1,2,4,5-Tetrachlorobenzene	95-94-3	<0.1	mg/kg						<0.1	
CHC	1,2,4-Trichlorobenzene	120-82-1	<0.1	mg/kg						<0.1	
CHC	1,2-Dichlorobenzene	95-50-1	<0.1	mg/kg						<0.1	
CHC	1,3,5-Trichlorobenzene	108-70-3	<0.1	mg/kg						<0.1	
CHC	1,3-Dichlorobenzene	541-73-1	<0.1	mg/kg						<0.1	
CHC	1,4-Dichlorobenzene	106-46-7	<0.1	mg/kg						<0.1	
CHC	2-Chloronaphthalene	91-58-7	<0.1	mg/kg						<0.1	
CHC	Benzal Chloride	98-87-3	<0.1	mg/kg						<0.1	
CHC	Benzotrichloride	98-07-7	<0.1	mg/kg						<0.1	
CHC	Benzylchloride	100-44-7	<0.1	mg/kg						<0.1	
CHC	Hexachloroethane	67-72-1	<0.1	mg/kg						<0.1	
CHC	Hexachlorobutadiene	87-68-3	<0.1	mg/kg						<0.1	
CHC	Hexachlorocyclopentadiene	77-47-4	<0.1	mg/kg						<0.1	
CHC	Pentachlorobenzene	608-93-5	<0.1	mg/kg						<0.1	

Samples not collected by ALS and are tested as received.

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MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Batch No: 19-53958
Report Number: 793338
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**								
HVOL	1,1,1,2-Tetrachloroethane	630-20-6	<0.5	mg/kg						<0.5	
HVOL	1,1,2,2-Tetrachloroethane	79-34-5	<0.5	mg/kg						<0.5	
HVOL	1,1- Dichloroethane	75-34-3	<0.5	mg/kg						<0.5	
HVOL	1,1-Dichloroethene	75-35-4	<0.5	mg/kg						<0.5	
HVOL	1,1-Dichloropropene	563-58-6	<0.5	mg/kg						<0.5	
HVOL	1,2,3-Trichloropropane	96-18-4	<0.5	mg/kg						<0.5	
HVOL	1,2-Dibromo-3-Chloropropane	96-12-8	<0.5	mg/kg						<0.5	
HVOL	1,2-Dichloroethene [cis]	540-59-0(cis)	<0.5	mg/kg						<0.5	
HVOL	1,2-Dichloroethene [trans]	540-59-0(trans)	<0.5	mg/kg						<0.5	
HVOL	1,2-Dichloroethane	107-06-2	<0.5	mg/kg						<0.5	
HVOL	1,2-Dichloropropane	78-87-5	<0.5	mg/kg						<0.5	
HVOL	1,3-Dichloropropane	142-28-9	<0.5	mg/kg						<0.5	
HVOL	1,3-Dichloropropene [cis]	10061-01-5	<0.5	mg/kg						<0.5	
HVOL	1,3-Dichloropropene [trans]	10061-02-6	<0.5	mg/kg						<0.5	
HVOL	2,2-Dichloropropane	594-20-7	<0.5	mg/kg						<0.5	
HVOL	2-Chlorotoluene	95-49-8	<0.5	mg/kg						<0.5	
HVOL	4-Chlorotoluene	106-43-4	<0.5	mg/kg						<0.5	
HVOL	Bromochloromethane	74-97-5	<0.5	mg/kg						<0.5	
HVOL	Bromodichloromethane	75-27-4	<0.5	mg/kg						<0.5	
HVOL	Bromobenzene	108-86-1	<0.5	mg/kg						<0.5	
HVOL	Bromoform (Tribromomethane)	75-25-2	<0.5	mg/kg						<0.5	
HVOL	Carbon Tetrachloride	56-23-5	<0.5	mg/kg						<0.5	
HVOL	Chloroform (Trichloromethane)	67-66-3	<0.5	mg/kg						<0.5	
HVOL	Chlorobenzene	108-90-7	<0.5	mg/kg						<0.5	
HVOL	Dibromochloromethane	124-48-1	<0.5	mg/kg						<0.5	
HVOL	Dibromomethane	74-95-3	<0.5	mg/kg						<0.5	
HVOL	1,2-Dibromoethane	106-93-4	<0.5	mg/kg						<0.5	
HVOL	Dichloromethane	75-09-2	<1	mg/kg						<1	
HVOL	Trichlorofluoromethane (CFC11)	75-69-4	<2	mg/kg						<2	

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
HVOL	Tetrachloroethene	127-18-4	<0.5	mg/kg						<0.5	
HVOL	Vinyl Chloride (Monomer)	75-01-4	<1	mg/kg						<1	
HVOL	1,1,1-Trichloroethane	71-55-6	<0.5	mg/kg						<0.5	
HVOL	1,1,2-Trichloroethane	79-00-5	<0.5	mg/kg						<0.5	
HVOL	Trichloroethene	79-01-6	<0.5	mg/kg						<0.5	
Analysis	**Analyte**	**CAS #**	**LOR**								
MAH	Styrene	100-42-5	<0.5	mg/kg						<0.5	
Analysis	**Analyte**	**CAS #**	**LOR**								
OCP	BHC (alpha isomer)	319-84-6	<0.05	mg/kg						<0.05	
OCP	a-Endosulphan	959-98-8	<0.05	mg/kg						<0.05	
OCP	Aldrin	309-00-2	<0.05	mg/kg						<0.05	
OCP	BHC (beta isomer)	319-85-7	<0.05	mg/kg						<0.05	
OCP	b-Endosulphan	33213-65-9	<0.05	mg/kg						<0.05	
OCP	Chlordane	57-74-9	<0.05	mg/kg						<0.05	
OCP	cis-Chlordane	5103-71-9	<0.05	mg/kg						<0.05	
OCP	trans-Chlordane	5103-74-2	<0.05	mg/kg						<0.05	
OCP	BHC (delta isomer)	319-86-8	<0.05	mg/kg						<0.05	
OCP	DDD	72-54-8	<0.05	mg/kg						<0.05	
OCP	DDE	72-55-9	<0.05	mg/kg						<0.05	
OCP	DDT	50-29-3	<0.05	mg/kg						<0.05	
OCP	Dieldrin	60-57-1	<0.05	mg/kg						<0.05	
OCP	Sum of alpha-, beta- and Endosulphan	115-29-7	<0.05	mg/kg						<0.05	
OCP	Endosulfan Sulfate	1031-07-8	<0.05	mg/kg						<0.05	
OCP	Endrin	72-20-8	<0.05	mg/kg						<0.05	
OCP	Endrin Aldehyde	7421-93-4	<0.05	mg/kg						<0.05	
OCP	Endrin Ketone	53494-70-5	<0.05	mg/kg						<0.05	
OCP	Hexachlorobenzene	118-74-1	<0.05	mg/kg						<0.05	
OCP	Heptachlor Epoxide	1024-57-3	<0.05	mg/kg						<0.05	
OCP	Heptachlor	76-44-8	<0.05	mg/kg						<0.05	
OCP	BHC (gamma isomer) [Lindane]	58-89-9	<0.05	mg/kg						<0.05	

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

Batch No: 19-53958
Report Number: 793338
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
OCP	Methoxychlor	72-43-5	<0.05	mg/kg						<0.05	
OCP	Oxychlordane	27304-13-8	<0.05	mg/kg						<0.05	
OCP	Sum of DDD, DDE and DDT	DDT+DDE+DD	<0.05	mg/kg						<0.05	
OCP	Sum of Aldrin and Dieldrin	309-00-2 +	<0.05	mg/kg						<0.05	
Analysis	**Analyte**	**CAS #**	**LOR**								
PAH	Acenaphthene	83-32-9	<0.1	mg/kg	<0.1	<0.1		<0.1	<0.1	<0.1	
PAH	Acenaphthylene	208-96-8	<0.1	mg/kg	<0.1	<0.1		<0.1	0.4	1.7	
PAH	Anthracene	120-12-7	<0.1	mg/kg	<0.1	<0.1		0.1	0.5	1.7	
PAH	Benz(a)anthracene	56-55-3	<0.1	mg/kg	<0.1	0.2		0.5	1.3	7.7	
PAH	Benzo(a)pyrene	50-32-8	<0.1	mg/kg	<0.1	0.2		0.3	1.4	6.3	
PAH	Benzo(b)fluoranthene	205-99-2	<0.1	mg/kg	<0.1	0.1		0.2	0.9	4.5	
PAH	Benzo(g,h,i)perylene	191-24-2	<0.1	mg/kg	<0.1	0.1		0.2	0.8	3.4	
PAH	Benzo(k)fluoranthene	207-08-9	<0.1	mg/kg	<0.1	0.1		0.2	1.1	4.5	
PAH	Chrysene	218-01-9	<0.1	mg/kg	<0.1	0.1		0.3	1.2	4.8	
PAH	Dibenz(a,h)anthracene	53-70-3	<0.1	mg/kg	<0.1	<0.1		<0.1	0.2	1.1	
PAH	Fluoranthene	206-44-0	<0.1	mg/kg	<0.1	0.2		0.7	2.6	11	
PAH	Fluorene	86-73-7	<0.1	mg/kg	<0.1	<0.1		<0.1	<0.1	0.3	
PAH	Indeno(1,2,3-cd)pyrene	193-39-5	<0.1	mg/kg	<0.1	<0.1		0.1	1.0	3.2	
PAH	Naphthalene	91-20-3	<0.1	mg/kg	<0.1	<0.1		<0.1	0.1	0.6	
PAH	Phenanthrene	85-01-8	<0.1	mg/kg	<0.1	<0.1		0.6	1.5	5.7	
PAH	Pyrene	129-00-0	<0.1	mg/kg	<0.1	0.2		0.6	2.5	11	
PAH	Total PAH	TOTALPAH	<0.1	mg/kg	<0.1	1.2		3.8	16	68	
PAH	BaP TEQ (zero)	BaP_TEQ_0xE	<0.1	mg/kg	<0.1	0.2		0.4	2.0	9.5	
PAH	BaP TEQ (half LOR)	BaP_TEQ_0.5x	<0.1	mg/kg	0.1	0.3		0.5	2.0	9.5	
PAH	BaP TEQ (LOR)	BaP_TEQ_1.0x	0.2	mg/kg	0.2	0.4		0.5	2.0	9.5	
Analysis	**Analyte**	**CAS #**	**LOR**								
PCB	Aroclor 1016	12674-11-2	<0.1	mg/kg					<0.1		
PCB	Aroclor 1221	11104-28-2	<0.1	mg/kg					<0.1		
PCB	Aroclor 1232	11141-16-5	<0.1	mg/kg					<0.1		
PCB	Aroclor 1242	53469-21-9	<0.1	mg/kg					<0.1		

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

				Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
				Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
				Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
PCB	Aroclor 1248	12672-29-6	<0.1	mg/kg					<0.1	
PCB	Aroclor 1254	11097-69-1	<0.1	mg/kg					<0.1	
PCB	Aroclor 1260	11096-82-5	<0.1	mg/kg					<0.1	
PCB	Total PCBs	1336-36-3	<0.1	mg/kg					<0.1	
Analysis	**Analyte**	**CAS #**	**LOR**							
Phenols(Halo)	4-Chloro-3-Methylphenol	59-50-7	<0.5	mg/kg					<0.5	
Phenols(Halo)	2-Chlorophenol	95-57-8	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,4-Dichlorophenol	120-83-2	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,6-Dichlorophenol	87-65-0	<0.5	mg/kg					<0.5	
Phenols(Halo)	Pentachlorophenol	87-86-5	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,3,4,5-Tetrachlorophenol	4901-51-3	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,3,4,6-Tetrachlorophenol	58-90-2	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,3,5,6-Tetrachlorophenol	935-95-5	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,4,5-Trichlorophenol	95-95-4	<0.5	mg/kg					<0.5	
Phenols(Halo)	2,4,6-Trichlorophenol	88-06-2	<0.5	mg/kg					<0.5	
Phenols(Halo)	Total Phenols (Halogenated)	64743-03-9(Hal	<0.5	mg/kg					<0.5	
Analysis	**Analyte**	**CAS #**	**LOR**							
Phenols(NonHalo)	Phenol	108-95-2	<0.5	mg/kg					<0.5	
Phenols(NonHalo)	Total Cresols	1319-77-3	<1	mg/kg					<1	
Phenols(NonHalo)	2,4-Dimethylphenol	105-67-9	<0.5	mg/kg					<0.5	
Phenols(NonHalo)	2,4-Dinitrophenol	51-28-5	<30	mg/kg					<30	
Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	534-52-1	<10	mg/kg					<10	
Phenols(NonHalo)	2-Nitrophenol	88-75-5	<0.5	mg/kg					<0.5	
Phenols(NonHalo)	4-Nitrophenol	100-02-7	<0.5	mg/kg					<0.5	
Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	<30	mg/kg					<30	
Phenols(NonHalo)	Dinoseb	88-85-7	<10	mg/kg					<10	
Phenols(NonHalo)	Total Phenols (non Halogenated)	64743-03-9(Non	<30	mg/kg					<30	
Analysis	**Analyte**	**CAS #**	**LOR**							
Moisture	Moisture %	MOISTCONTE	<2	% w/wet w					8	
pH	pH, units	pH_Lab	<0.1	Units					9.0	

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Calculated results are based on raw data.

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Total Fluoride	Total Fluoride, as F	16984-48-8	<100	mg/kg						300	
Cyanide	Cyanide, as CN	57-12-5	<5	mg/kg						<5	
Total Cr 6+ DA	Hexavalent Chromium (Total) Soil DA	18540-29-9	<1	mg/kg						<1	
Analysis	**Analyte**	**CAS #**	**LOR**								
MS Total Metals	Arsenic	7440-38-2	<5	mg/kg	<5	<5		<5	<5	<5	
MS Total Metals	Cadmium	7440-43-9	<0.2	mg/kg	<0.2	<0.2		0.5	<0.2	<0.2	
MS Total Metals	Chromium	7440-47-3	<5	mg/kg	6	22		83		22	
MS Total Metals	Copper	7440-50-8	<5	mg/kg	<5	29		42	18	16	
MS Total Metals	Lead	7439-92-1	<5	mg/kg	7	18		47	13	14	
MS Total Metals	Mercury	7439-97-6	<0.05	mg/kg	<0.05	<0.05		<0.05	<0.05	<0.05	
MS Total Metals	Molybdenum	7439-98-7	<5	mg/kg	<5	<5		<5	<5	<5	
MS Total Metals	Nickel	7440-02-0	<5	mg/kg	<5	59		15	13	19	
MS Total Metals	Selenium	7782-49-2	<3	mg/kg	<3	<3		<3	<3	<3	
MS Total Metals	Silver	7440-22-4	<5	mg/kg	<5	<5		<5	<5	<5	
MS Total Metals	Tin	7440-31-5	<5	mg/kg	<5	<5		<5	<5	<5	
MS Total Metals	Zinc	7440-66-6	<5	mg/kg	<5	60		63	32	39	
Analysis	**Analyte**	**CAS #**	**LOR**								
Asbestos	Asbestos fibres	132207-33-1	<0.1				Not Detected				
Analysis	**Analyte**	**CAS #**	**LOR**								
TRH (C6-C10) &	TPHC6-C9	C6-C9	<20	mg/kg	<20	<20		<20	<20	<20	
TRH (C6-C10) &	TRHC6-C10	C6-C10	<20	mg/kg	<20	<20		<20	<20	<20	
TRH (C6-C10) &	TRHC6-C10 minus BTEX	F1-BTEX	<20	mg/kg	<20	<20		<20	<20	<20	
Analysis	**Analyte**	**CAS #**	**LOR**								
TRH F2	TRH>C10-C16 minus Naphthalene	F2-NAPHTHAL	<20	mg/kg	<20	<20		<20	<20	<20	
TRH & TPH	TPH C10-C14	C10-C14	<20	mg/kg	<20	<20		<20	<20	<20	
TRH & TPH	TPH C15-C28	C15-C28	<50	mg/kg	<50	<50		180	50	200	
TRH & TPH	TPH C29-C36	C29-C36	<50	mg/kg	<50	<50		220	<50	84	
TRH & TPH	TRH>C10-C16	C10-C16	<20	mg/kg	<20	<20		<20	<20	<20	
TRH & TPH	TRH>C16-C34	C16-C34	<50	mg/kg	<50	<50		380	80	270	
TRH & TPH	TRH>C34-C40	C34-C40	<50	mg/kg	<50	<50		64	<50	<50	

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Calculated results are based on raw data.

					Sample No.	6339549	6339551	6339554	6339555	6339558	6339561
					Client Sample ID	DP05-0.9	DP06-0.4	DP06-1.9	DP06-2.8	DP07-1.9	DP07-4.9
					Sample Date	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
TRH & TPH	Sum of TRH>C10-C40	C10-C40	<50	mg/kg		<50	<50		440	80	270

Samples not collected by ALS and are tested as received.

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	6339563	6339567	6339568
					Client Sample ID	DP08-0.5	DP09-1.9	PACM-1
					Sample Date	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**					
PAH	Acenaphthene	83-32-9	<0.1	mg/kg		<0.1	<0.1	
PAH	Acenaphthylene	208-96-8	<0.1	mg/kg		<0.1	<0.1	
PAH	Anthracene	120-12-7	<0.1	mg/kg		<0.1	<0.1	
PAH	Benz(a)anthracene	56-55-3	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(a)pyrene	50-32-8	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(b)fluoranthene	205-99-2	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(g,h,i)perylene	191-24-2	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(k)fluoranthene	207-08-9	<0.1	mg/kg		<0.1	<0.1	
PAH	Chrysene	218-01-9	<0.1	mg/kg		<0.1	<0.1	
PAH	Dibenz(a,h)anthracene	53-70-3	<0.1	mg/kg		<0.1	<0.1	
PAH	Fluoranthene	206-44-0	<0.1	mg/kg		<0.1	<0.1	
PAH	Fluorene	86-73-7	<0.1	mg/kg		<0.1	<0.1	
PAH	Indeno(1,2,3-cd)pyrene	193-39-5	<0.1	mg/kg		<0.1	<0.1	
PAH	Naphthalene	91-20-3	<0.1	mg/kg		<0.1	<0.1	
PAH	Phenanthrene	85-01-8	<0.1	mg/kg		<0.1	<0.1	
PAH	Pyrene	129-00-0	<0.1	mg/kg		<0.1	<0.1	
PAH	Total PAH	TOTALPAH	<0.1	mg/kg		<0.1	<0.1	
PAH	BaP TEQ (zero)	BaP_TEQ_0xE	<0.1	mg/kg		<0.1	<0.1	
PAH	BaP TEQ (half LOR)	BaP_TEQ_0.5x	<0.1	mg/kg		0.1	0.1	
PAH	BaP TEQ (LOR)	BaP_TEQ_1.0x	0.2	mg/kg		0.2	0.2	
Analysis	**Analyte**	**CAS #**	**LOR**					
MS Total Metals	Arsenic	7440-38-2	<5	mg/kg		<5	<5	
MS Total Metals	Cadmium	7440-43-9	<0.2	mg/kg		<0.2	<0.2	
MS Total Metals	Chromium	7440-47-3	<5	mg/kg		9	15	
MS Total Metals	Copper	7440-50-8	<5	mg/kg		11	15	
MS Total Metals	Lead	7439-92-1	<5	mg/kg		6	5	

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Calculated results are based on raw data.

					Sample No.	6339563	6339567	6339568
					Client Sample ID	DP08-0.5	DP09-1.9	PACM-1
					Sample Date	11/11/19	11/11/19	11/11/19
					Sample Type	SOIL	SOIL	SOIL
MS Total Metals	Mercury	7439-97-6	<0.05	mg/kg		0.20	<0.05	
MS Total Metals	Molybdenum	7439-98-7	<5	mg/kg		<5	<5	
MS Total Metals	Nickel	7440-02-0	<5	mg/kg		37	<5	
MS Total Metals	Selenium	7782-49-2	<3	mg/kg		<3	<3	
MS Total Metals	Silver	7440-22-4	<5	mg/kg		<5	<5	
MS Total Metals	Tin	7440-31-5	<5	mg/kg		<5	<5	
MS Total Metals	Zinc	7440-66-6	<5	mg/kg		21	11	
Analysis	**Analyte**	**CAS #**	**LOR**					
Asbestos	Asbestos fibres	132207-33-1	<0.1					Chrysotile+Amosite De
Analysis	**Analyte**	**CAS #**	**LOR**					
TRH (C6-C10) &	TPHC6-C9	C6-C9	<20	mg/kg		<20	<20	
TRH (C6-C10) &	TRHC6-C10	C6-C10	<20	mg/kg		<20	<20	
TRH (C6-C10) &	TRHC6-C10 minus BTEX	F1-BTEX	<20	mg/kg		<20	<20	
Analysis	**Analyte**	**CAS #**	**LOR**					
TRH F2	TRH>C10-C16 minus Naphthalene	F2-NAPHTHAL	<20	mg/kg		<20	<20	
TRH & TPH	TPH C10-C14	C10-C14	<20	mg/kg		<20	<20	
TRH & TPH	TPH C15-C28	C15-C28	<50	mg/kg		<50	<50	
TRH & TPH	TPH C29-C36	C29-C36	<50	mg/kg		<50	<50	
TRH & TPH	TRH>C10-C16	C10-C16	<20	mg/kg		<20	<20	
TRH & TPH	TRH>C16-C34	C16-C34	<50	mg/kg		<50	<50	
TRH & TPH	TRH>C34-C40	C34-C40	<50	mg/kg		<50	<50	
TRH & TPH	Sum of TRH>C10-C40	C10-C40	<50	mg/kg		<50	<50	

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QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

					Value
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6343039	QC - Blank	Total Fluoride	Total Fluoride, as F	mg/kg	<100
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6343181	QC - Blank	MS Total Metals	Arsenic	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Cadmium	mg/kg	<0.2
6343181	QC - Blank	MS Total Metals	Chromium	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Copper	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Lead	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Mercury	mg/kg	<0.05
6343181	QC - Blank	MS Total Metals	Molybdenum	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Nickel	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Selenium	mg/kg	<3
6343181	QC - Blank	MS Total Metals	Silver	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Tin	mg/kg	<5
6343181	QC - Blank	MS Total Metals	Zinc	mg/kg	<5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344028	QC - Blank	MAH	Styrene	mg/kg	<0.5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6343323	QC - Blank	BTEXN	Benzene	mg/kg	<0.5
6343323	QC - Blank	BTEXN	Toluene	mg/kg	<0.5
6343323	QC - Blank	BTEXN	Ethyl Benzene	mg/kg	<0.5
6343323	QC - Blank	BTEXN	Xylene - m&p	mg/kg	<1
6343323	QC - Blank	BTEXN	Xylene - O	mg/kg	<0.5
6343323	QC - Blank	BTEXN	Naphthalene	mg/kg	<0.5
6343323	QC - Blank	BTEXN	Total Xylenes	mg/kg	<1
6343323	QC - Blank	BTEXN	BTEX (Sum)	mg/kg	<1
6346301	QC - Blank	BTEXN	Benzene	mg/kg	<0.5

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					Value
6346301	QC - Blank	BTEXN	Toluene	mg/kg	<0.5
6346301	QC - Blank	BTEXN	Ethyl Benzene	mg/kg	<0.5
6346301	QC - Blank	BTEXN	Xylene - m&p	mg/kg	<1
6346301	QC - Blank	BTEXN	Xylene - O	mg/kg	<0.5
6346301	QC - Blank	BTEXN	Naphthalene	mg/kg	<0.5
6346301	QC - Blank	BTEXN	Total Xylenes	mg/kg	<1
6346301	QC - Blank	BTEXN	BTEX (Sum)	mg/kg	<1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6346312	QC - Blank	TRH (C6-C10) & F1	TPHC6-C9	mg/kg	<20
6346312	QC - Blank	TRH (C6-C10) & F1	TRHC6-C10	mg/kg	<20
6346312	QC - Blank	TRH (C6-C10) & F1	TRHC6-C10 minus BTEX	mg/kg	<20
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6345271	QC - Blank	TRH & TPH (>C10)	TPH C10-C14	mg/kg	<20
6345271	QC - Blank	TRH & TPH (>C10)	TPH C15-C28	mg/kg	<50
6345271	QC - Blank	TRH & TPH (>C10)	TPH C29-C36	mg/kg	<50
6345271	QC - Blank	TRH & TPH (>C10)	TRH>C10-C16	mg/kg	<20
6345271	QC - Blank	TRH & TPH (>C10)	TRH>C16-C34	mg/kg	<50
6345271	QC - Blank	TRH & TPH (>C10)	TRH>C34-C40	mg/kg	<50
6345271	QC - Blank	TRH & TPH (>C10)	Sum of TRH>C10-C40	mg/kg	<50
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344745	QC - Blank	PAH	Acenaphthene	mg/kg	<0.1
6344745	QC - Blank	PAH	Acenaphthylene	mg/kg	<0.1
6344745	QC - Blank	PAH	Anthracene	mg/kg	<0.1
6344745	QC - Blank	PAH	Benz(a)anthracene	mg/kg	<0.1
6344745	QC - Blank	PAH	Benzo(a)pyrene	mg/kg	<0.1
6344745	QC - Blank	PAH	Benzo(b)fluoranthene	mg/kg	<0.1
6344745	QC - Blank	PAH	Benzo(g,h,i)perylene	mg/kg	<0.1
6344745	QC - Blank	PAH	Benzo(k)fluoranthene	mg/kg	<0.1
6344745	QC - Blank	PAH	Chrysene	mg/kg	<0.1
6344745	QC - Blank	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1
6344745	QC - Blank	PAH	Fluoranthene	mg/kg	<0.1
6344745	QC - Blank	PAH	Fluorene	mg/kg	<0.1
6344745	QC - Blank	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1

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					Value
6344745	QC - Blank	PAH	Naphthalene	mg/kg	<0.1
6344745	QC - Blank	PAH	Phenanthrene	mg/kg	<0.1
6344745	QC - Blank	PAH	Pyrene	mg/kg	<0.1
6344745	QC - Blank	PAH	Total PAH	mg/kg	<0.1
6344745	QC - Blank	PAH	BaP TEQ (zero)	mg/kg	<0.1
6344745	QC - Blank	PAH	BaP TEQ (half LOR)	mg/kg	0.1
6344745	QC - Blank	PAH	BaP TEQ (LOR)	mg/kg	0.2
6344784	QC - Blank	PAH	Acenaphthene	mg/kg	<0.1
6344784	QC - Blank	PAH	Acenaphthylene	mg/kg	<0.1
6344784	QC - Blank	PAH	Anthracene	mg/kg	<0.1
6344784	QC - Blank	PAH	Benz(a)anthracene	mg/kg	<0.1
6344784	QC - Blank	PAH	Benzo(a)pyrene	mg/kg	<0.1
6344784	QC - Blank	PAH	Benzo(b)fluoranthene	mg/kg	<0.1
6344784	QC - Blank	PAH	Benzo(g,h,i)perylene	mg/kg	<0.1
6344784	QC - Blank	PAH	Benzo(k)fluoranthene	mg/kg	<0.1
6344784	QC - Blank	PAH	Chrysene	mg/kg	<0.1
6344784	QC - Blank	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1
6344784	QC - Blank	PAH	Fluoranthene	mg/kg	<0.1
6344784	QC - Blank	PAH	Fluorene	mg/kg	<0.1
6344784	QC - Blank	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1
6344784	QC - Blank	PAH	Naphthalene	mg/kg	<0.1
6344784	QC - Blank	PAH	Phenanthrene	mg/kg	<0.1
6344784	QC - Blank	PAH	Pyrene	mg/kg	<0.1
6344784	QC - Blank	PAH	Total PAH	mg/kg	<0.1
6344784	QC - Blank	PAH	BaP TEQ (zero)	mg/kg	<0.1
6344784	QC - Blank	PAH	BaP TEQ (half LOR)	mg/kg	0.1
6344784	QC - Blank	PAH	BaP TEQ (LOR)	mg/kg	0.2
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344790	QC - Blank	OCP	BHC (alpha isomer)	mg/kg	<0.05
6344790	QC - Blank	OCP	a-Endosulphan	mg/kg	<0.05
6344790	QC - Blank	OCP	Aldrin	mg/kg	<0.05
6344790	QC - Blank	OCP	BHC (beta isomer)	mg/kg	<0.05
6344790	QC - Blank	OCP	b-Endosulphan	mg/kg	<0.05

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					Value
6344790	QC - Blank	OCP	Chlordane	mg/kg	<0.05
6344790	QC - Blank	OCP	cis-Chlordane	mg/kg	<0.05
6344790	QC - Blank	OCP	trans-Chlordane	mg/kg	<0.05
6344790	QC - Blank	OCP	BHC (delta isomer)	mg/kg	<0.05
6344790	QC - Blank	OCP	DDD	mg/kg	<0.05
6344790	QC - Blank	OCP	DDE	mg/kg	<0.05
6344790	QC - Blank	OCP	DDT	mg/kg	<0.05
6344790	QC - Blank	OCP	Dieldrin	mg/kg	<0.05
6344790	QC - Blank	OCP	Sum of alpha-, beta- and Endosulphan	mg/kg	<0.05
6344790	QC - Blank	OCP	Endosulfan Sulfate	mg/kg	<0.05
6344790	QC - Blank	OCP	Endrin	mg/kg	<0.05
6344790	QC - Blank	OCP	Endrin Aldehyde	mg/kg	<0.05
6344790	QC - Blank	OCP	Endrin Ketone	mg/kg	<0.05
6344790	QC - Blank	OCP	Hexachlorobenzene	mg/kg	<0.05
6344790	QC - Blank	OCP	Heptachlor Epoxide	mg/kg	<0.05
6344790	QC - Blank	OCP	Heptachlor	mg/kg	<0.05
6344790	QC - Blank	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05
6344790	QC - Blank	OCP	Methoxychlor	mg/kg	<0.05
6344790	QC - Blank	OCP	Oxychlordane	mg/kg	<0.05
6344790	QC - Blank	OCP	Sum of DDD, DDE and DDT	mg/kg	<0.05
6344790	QC - Blank	OCP	Sum of Aldrin and Dieldrin	mg/kg	<0.05
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344795	QC - Blank	PCB	Aroclor 1016	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1221	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1232	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1242	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1248	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1254	mg/kg	<0.1
6344795	QC - Blank	PCB	Aroclor 1260	mg/kg	<0.1
6344795	QC - Blank	PCB	Total PCBs	mg/kg	<0.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344800	QC - Blank	CHC	1,2,3,4-Tetrachlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,2,3,5-Tetrachlorbenzene	mg/kg	<0.1

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					Value
6344800	QC - Blank	CHC	1,2,3-Trichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,2,4,5-Tetrachlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,2,4-Trichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,2-Dichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,3,5-Trichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,3-Dichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	1,4-Dichlorobenzene	mg/kg	<0.1
6344800	QC - Blank	CHC	2-Chloronaphthalene	mg/kg	<0.1
6344800	QC - Blank	CHC	Benzal Chloride	mg/kg	<0.1
6344800	QC - Blank	CHC	Benzotrichloride	mg/kg	<0.1
6344800	QC - Blank	CHC	Benzylchloride	mg/kg	<0.1
6344800	QC - Blank	CHC	Hexachloroethane	mg/kg	<0.1
6344800	QC - Blank	CHC	Hexachlorobutadiene	mg/kg	<0.1
6344800	QC - Blank	CHC	Hexachlorocyclopentadiene	mg/kg	<0.1
6344800	QC - Blank	CHC	Pentachlorobenzene	mg/kg	<0.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344810	QC - Blank	Phenols(Halo)	4-Chloro-3-Methylphenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2-Chlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,4-Dichlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,6-Dichlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	Pentachlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,3,4,5-Tetrachlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,3,4,6-Tetrachlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,3,5,6-Tetrachlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,4,5-Trichlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	2,4,6-Trichlorophenol	mg/kg	<0.5
6344810	QC - Blank	Phenols(Halo)	Total Phenols (Halogenated)	mg/kg	<0.5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344805	QC - Blank	Phenols(NonHalo)	Phenol	mg/kg	<0.5
6344805	QC - Blank	Phenols(NonHalo)	Total Cresols	mg/kg	<1
6344805	QC - Blank	Phenols(NonHalo)	2,4-Dimethylphenol	mg/kg	<0.5
6344805	QC - Blank	Phenols(NonHalo)	2,4-Dinitrophenol	mg/kg	<30
6344805	QC - Blank	Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	mg/kg	<10

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					Value
6344805	QC - Blank	Phenols(NonHalo)	2-Nitrophenol	mg/kg	<0.5
6344805	QC - Blank	Phenols(NonHalo)	4-Nitrophenol	mg/kg	<0.5
6344805	QC - Blank	Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	mg/kg	<30
6344805	QC - Blank	Phenols(NonHalo)	Dinoseb	mg/kg	<10
6344805	QC - Blank	Phenols(NonHalo)	Total Phenols (non Halogenated)	mg/kg	<30
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6344023	QC - Blank	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,1- Dichloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,1-Dichloroethene	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,1-Dichloropropene	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dibromo-3-Chloropropane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dichloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dichloropropane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,3-Dichloropropane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5
6344023	QC - Blank	HVOL	2,2-Dichloropropane	mg/kg	<0.5
6344023	QC - Blank	HVOL	2-Chlorotoluene	mg/kg	<0.5
6344023	QC - Blank	HVOL	4-Chlorotoluene	mg/kg	<0.5
6344023	QC - Blank	HVOL	Bromochloromethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	Bromodichloromethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	Bromobenzene	mg/kg	<0.5
6344023	QC - Blank	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5
6344023	QC - Blank	HVOL	Carbon Tetrachloride	mg/kg	<0.5
6344023	QC - Blank	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5
6344023	QC - Blank	HVOL	Chlorobenzene	mg/kg	<0.5
6344023	QC - Blank	HVOL	Dibromochloromethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	Dibromomethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,2-Dibromoethane	mg/kg	<0.5

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					Value
6344023	QC - Blank	HVOL	Dichloromethane	mg/kg	<1
6344023	QC - Blank	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2
6344023	QC - Blank	HVOL	Tetrachloroethene	mg/kg	<0.5
6344023	QC - Blank	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1
6344023	QC - Blank	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5
6344023	QC - Blank	HVOL	Trichloroethene	mg/kg	<0.5

QUALITY CONTROL - DUPLICATES

QC Data for duplicates is calculated on raw 'unrounded' values. Laboratory duplicates are randomly selected samples tested by the laboratory to maintain method precision and provide information on sample homogeniety.
RPD = Relative Percentage Difference for duplicate determinations. RPD's that fall outside the general acceptance criteria will be attributed to non-homogeneity of samples or results of low magnitudes.

					Sample Value	Duplicate Value	% RPD
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6341567	NCP	pH	pH, units	Units	6.5	6.5	0.2
6342999	NCP	Moisture	Moisture %	% w/wet w	14	14	5.5
6343042	DP01-0.9	Total Fluoride	Total Fluoride, as F	mg/kg	400	440	9.3
6344372	DP01-0.9	Cyanide	Cyanide, as CN	mg/kg	<5	<5	0
6345026	NCP	Total Cr 6+ DA	Hexavalent Chromium (Total) Soil DA	mg/kg	<1	<1	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6343182	NCP	MS Total Metals	Arsenic	mg/kg	<5	<5	0
6343182	NCP	MS Total Metals	Cadmium	mg/kg	<0.2	<0.2	0
6343182	NCP	MS Total Metals	Chromium	mg/kg	18	18	3.8
6343182	NCP	MS Total Metals	Copper	mg/kg	27	26	3.5
6343182	NCP	MS Total Metals	Lead	mg/kg	25	24	4.9
6343182	NCP	MS Total Metals	Mercury	mg/kg	<0.05	<0.05	0
6343182	NCP	MS Total Metals	Molybdenum	mg/kg	<5	<5	0
6343182	NCP	MS Total Metals	Nickel	mg/kg	77	75	2.8
6343182	NCP	MS Total Metals	Selenium	mg/kg	<3	<3	0
6343182	NCP	MS Total Metals	Silver	mg/kg	<5	<5	0
6343182	NCP	MS Total Metals	Tin	mg/kg	<5	<5	0

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					Sample Value	Duplicate Value	% RPD
6343182	NCP	MS Total Metals	Zinc	mg/kg	55	53	3.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344026	DP01-0.9	MAH	Styrene	mg/kg	<0.5	<0.5	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6343322	NCP	BTEXN	Benzene	mg/kg	<0.5	<0.5	0
6343322	NCP	BTEXN	Toluene	mg/kg	<0.5	<0.5	0
6343322	NCP	BTEXN	Ethyl Benzene	mg/kg	<0.5	<0.5	0
6343322	NCP	BTEXN	Xylene - m&p	mg/kg	<1	<1	0
6343322	NCP	BTEXN	Xylene - O	mg/kg	<0.5	<0.5	0
6343322	NCP	BTEXN	Naphthalene	mg/kg	<0.5	<0.5	0
6343322	NCP	BTEXN	Total Xylenes	mg/kg	<1	<1	0
6343322	NCP	BTEXN	BTEX (Sum)	mg/kg	<1	<1	0
6346299	NCP	BTEXN	Benzene	mg/kg	<0.5	<0.5	0
6346299	NCP	BTEXN	Toluene	mg/kg	<0.5	<0.5	0
6346299	NCP	BTEXN	Ethyl Benzene	mg/kg	<0.5	<0.5	0
6346299	NCP	BTEXN	Xylene - m&p	mg/kg	<1	<1	0
6346299	NCP	BTEXN	Xylene - O	mg/kg	<0.5	<0.5	0
6346299	NCP	BTEXN	Naphthalene	mg/kg	<0.5	<0.5	0
6346299	NCP	BTEXN	Total Xylenes	mg/kg	<1	<1	0
6346299	NCP	BTEXN	BTEX (Sum)	mg/kg	<1	<1	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6343324	DP01-0.9	TRH (C6-C10) & F1	TPHC6-C9	mg/kg	<20	<20	0
6343324	DP01-0.9	TRH (C6-C10) & F1	TRHC6-C10	mg/kg	<20	<20	0
6343324	DP01-0.9	TRH (C6-C10) & F1	TRHC6-C10 minus BTEX	mg/kg	<20	<20	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6345269	NCP	TRH & TPH (>C10)	TPH C10-C14	mg/kg	<20	<20	0
6345269	NCP	TRH & TPH (>C10)	TPH C15-C28	mg/kg	<50	<50	0
6345269	NCP	TRH & TPH (>C10)	TPH C29-C36	mg/kg	<50	<50	0
6345269	NCP	TRH & TPH (>C10)	TRH>C10-C16	mg/kg	<20	<20	0
6345269	NCP	TRH & TPH (>C10)	TRH>C16-C34	mg/kg	<50	<50	0
6345269	NCP	TRH & TPH (>C10)	TRH>C34-C40	mg/kg	<50	<50	0
6345269	NCP	TRH & TPH (>C10)	Sum of TRH>C10-C40	mg/kg	<50	<50	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				

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					Sample Value	Duplicate Value	% RPD
6344740	DP03-0.9	PAH	Acenaphthene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Acenaphthylene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Anthracene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Benz(a)anthracene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Benzo(a)pyrene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Benzo(b)fluoranthene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Benzo(k)fluoranthene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Chrysene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Fluoranthene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Fluorene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Naphthalene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Phenanthrene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Pyrene	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	Total PAH	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	BaP TEQ (zero)	mg/kg	<0.1	<0.1	0
6344740	DP03-0.9	PAH	BaP TEQ (half LOR)	mg/kg	0.1	0.1	0.0
6344740	DP03-0.9	PAH	BaP TEQ (LOR)	mg/kg	0.2	0.2	0.0
6344779	NCP	PAH	Acenaphthene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Acenaphthylene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Anthracene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Benz(a)anthracene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Benzo(a)pyrene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Benzo(b)fluoranthene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Benzo(k)fluoranthene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Chrysene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Fluoranthene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Fluorene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1	<0.1	0

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					Sample Value	Duplicate Value	% RPD
6344779	NCP	PAH	Naphthalene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Phenanthrene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Pyrene	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	Total PAH	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	BaP TEQ (zero)	mg/kg	<0.1	<0.1	0
6344779	NCP	PAH	BaP TEQ (half LOR)	mg/kg	0.1	0.1	0.0
6344779	NCP	PAH	BaP TEQ (LOR)	mg/kg	0.2	0.2	0.0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344788	DP01-0.9	OCP	BHC (alpha isomer)	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	a-Endosulphan	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Aldrin	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	BHC (beta isomer)	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	b-Endosulphan	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Chlordane	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	cis-Chlordane	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	trans-Chlordane	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	BHC (delta isomer)	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	DDD	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	DDE	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	DDT	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Dieldrin	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Sum of alpha-, beta- and Endosulphan	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Endosulfan Sulfate	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Endrin	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Endrin Aldehyde	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Endrin Ketone	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Hexachlorobenzene	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Heptachlor Epoxide	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Heptachlor	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Methoxychlor	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Oxychlordane	mg/kg	<0.05	<0.05	0
6344788	DP01-0.9	OCP	Sum of DDD, DDE and DDT	mg/kg	<0.05	<0.05	0

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					Sample Value	Duplicate Value	% RPD
6344788	DP01-0.9	OCP	Sum of Aldrin and Dieldrin	mg/kg	<0.05	<0.05	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344793	DP01-0.9	PCB	Aroclor 1016	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1221	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1232	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1242	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1248	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1254	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Aroclor 1260	mg/kg	<0.1	<0.1	0
6344793	DP01-0.9	PCB	Total PCBs	mg/kg	<0.1	<0.1	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344798	DP01-0.9	CHC	1,2,3,4-Tetrachlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,2,3,5-Tetrachlorbenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,2,3-Trichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,2,4,5-Tetrachlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,2,4-Trichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,2-Dichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,3,5-Trichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,3-Dichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	1,4-Dichlorobenzene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	2-Chloronaphthalene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Benzal Chloride	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Benzotrichloride	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Benzylchloride	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Hexachloroethane	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Hexachlorobutadiene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Hexachlorocyclopentadiene	mg/kg	<0.1	<0.1	0
6344798	DP01-0.9	CHC	Pentachlorobenzene	mg/kg	<0.1	<0.1	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344807	NCP	Phenols(Halo)	4-Chloro-3-Methylphenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2-Chlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,4-Dichlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,6-Dichlorophenol	mg/kg	<0.5	<0.5	0

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					Sample Value	Duplicate Value	% RPD
6344807	NCP	Phenols(Halo)	Pentachlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,3,4,5-Tetrachlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,3,4,6-Tetrachlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,3,5,6-Tetrachlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,4,5-Trichlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	2,4,6-Trichlorophenol	mg/kg	<0.5	<0.5	0
6344807	NCP	Phenols(Halo)	Total Phenols (Halogenated)	mg/kg	<0.5	<0.5	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344802	NCP	Phenols(NonHalo)	Phenol	mg/kg	<0.5	<0.5	0
6344802	NCP	Phenols(NonHalo)	Total Cresols	mg/kg	<1	<1	0
6344802	NCP	Phenols(NonHalo)	2,4-Dimethylphenol	mg/kg	<0.5	<0.5	0
6344802	NCP	Phenols(NonHalo)	2,4-Dinitrophenol	mg/kg	<30	<30	0
6344802	NCP	Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	mg/kg	<10	<10	0
6344802	NCP	Phenols(NonHalo)	2-Nitrophenol	mg/kg	<0.5	<0.5	0
6344802	NCP	Phenols(NonHalo)	4-Nitrophenol	mg/kg	<0.5	<0.5	0
6344802	NCP	Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	mg/kg	<30	<30	0
6344802	NCP	Phenols(NonHalo)	Dinoseb	mg/kg	<10	<10	0
6344802	NCP	Phenols(NonHalo)	Total Phenols (non Halogenated)	mg/kg	<30	<30	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344020	DP01-0.9	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,1- Dichloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,1-Dichloroethene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,1-Dichloropropene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dibromo-3-Chloropropane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dichloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dichloropropane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,3-Dichloropropane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5	<0.5	0

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					Sample Value	Duplicate Value	% RPD
6344020	DP01-0.9	HVOL	2,2-Dichloropropane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	2-Chlorotoluene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	4-Chlorotoluene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Bromochloromethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Bromodichloromethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Bromobenzene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Carbon Tetrachloride	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Chlorobenzene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Dibromochloromethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Dibromomethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,2-Dibromoethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Dichloromethane	mg/kg	<1	<1	0
6344020	DP01-0.9	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2	<2	0
6344020	DP01-0.9	HVOL	Tetrachloroethene	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1	<1	0
6344020	DP01-0.9	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5	<0.5	0
6344020	DP01-0.9	HVOL	Trichloroethene	mg/kg	<0.5	<0.5	0

QUALITY CONTROL - SPIKES

QC Data for spikes is calculated on raw 'unrounded' values. Laboratory spikes are randomly selected samples in which the analytes in question have been artificially introduced and recovered via standard analysis and are used to provide information on potential matrix effects on analyte recoveries.
Spike recoveries that fall outside the general acceptance criteria will be attributed to sample matrix interference or results of high magnitudes.
NCP: Non-Customer Parent (sample quality is representative of the analytical batch but the sample that was QC tested belongs to a customer not pertaining to the report.)

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					Sample Value	Expected Value	% Recovery
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344367	DP01-0.9	Cyanide	Cyanide, as CN	mg/kg	<5	20	105
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6346233	NCP	MS Total Metals	Arsenic	mg/kg	<5	100	101
6346233	NCP	MS Total Metals	Cadmium	mg/kg	<0.2	100	120
6346233	NCP	MS Total Metals	Chromium	mg/kg	38	130	108
6346233	NCP	MS Total Metals	Copper	mg/kg	13	110	97.5
6346233	NCP	MS Total Metals	Nickel	mg/kg	29	120	95.8
6346233	NCP	MS Total Metals	Selenium	mg/kg	3	100	100
6346233	NCP	MS Total Metals	Zinc	mg/kg	18	110	94.9
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6343321	DP07-1.9	BTEXN	Benzene	mg/kg	<0.5	4.4	79.6
6343321	DP07-1.9	BTEXN	Toluene	mg/kg	<0.5	4.4	77.0
6343321	DP07-1.9	BTEXN	Xylene - m&p	mg/kg	<1	8.8	71.9
6343321	DP07-1.9	BTEXN	Xylene - O	mg/kg	<0.5	4.4	72.5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6343325	DP03-0.9	TRH (C6-C10) & F1	TPHC6-C9	mg/kg	<20	110	85.1
6343325	DP03-0.9	TRH (C6-C10) & F1	TRHC6-C10	mg/kg	<20	110	82.9
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6345266	NCP	TRH & TPH (>C10)	TPH C15-C28	mg/kg	<50	880	108
6345266	NCP	TRH & TPH (>C10)	TRH>C16-C34	mg/kg	<50	910	97.7
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344741	DP06-0.4	PAH	Acenaphthene	mg/kg	<0.1	1.3	85.4
6344741	DP06-0.4	PAH	Acenaphthylene	mg/kg	<0.1	1.3	84.6
6344741	DP06-0.4	PAH	Anthracene	mg/kg	<0.1	1.3	92.0
6344741	DP06-0.4	PAH	Benz(a)anthracene	mg/kg	0.2	1.5	127
6344741	DP06-0.4	PAH	Benzo(a)pyrene	mg/kg	0.2	1.5	91.8
6344741	DP06-0.4	PAH	Benzo(b)fluoranthene	mg/kg	0.1	1.5	87.8
6344741	DP06-0.4	PAH	Benzo(g,h,i)perylene	mg/kg	0.1	1.5	73.2
6344741	DP06-0.4	PAH	Benzo(k)fluoranthene	mg/kg	0.1	1.5	88.2
6344741	DP06-0.4	PAH	Chrysene	mg/kg	0.1	1.5	85.4
6344741	DP06-0.4	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1	1.3	84.8
6344741	DP06-0.4	PAH	Fluoranthene	mg/kg	0.2	1.5	86.2

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MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample Value	Expected Value	% Recovery
6344741	DP06-0.4	PAH	Fluorene	mg/kg	<0.1	1.3	72.0
6344741	DP06-0.4	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1	1.3	94.6
6344741	DP06-0.4	PAH	Naphthalene	mg/kg	<0.1	1.3	90.6
6344741	DP06-0.4	PAH	Phenanthrene	mg/kg	<0.1	1.3	91.4
6344741	DP06-0.4	PAH	Pyrene	mg/kg	0.2	1.5	88.8
6344783	NCP	PAH	Acenaphthene	mg/kg	<0.1	1.7	106
6344783	NCP	PAH	Acenaphthylene	mg/kg	0.2	1.9	104
6344783	NCP	PAH	Anthracene	mg/kg	0.2	2.0	109
6344783	NCP	PAH	Benz(a)anthracene	mg/kg	2.0	3.8	120
6344783	NCP	PAH	Benzo(a)pyrene	mg/kg	2.3	4.0	117
6344783	NCP	PAH	Benzo(b)fluoranthene	mg/kg	1.6	3.3	122
6344783	NCP	PAH	Benzo(g,h,i)perylene	mg/kg	1.2	3.0	105
6344783	NCP	PAH	Benzo(k)fluoranthene	mg/kg	1.7	3.5	93.6
6344783	NCP	PAH	Chrysene	mg/kg	2.2	3.9	116
6344783	NCP	PAH	Dibenz(a,h)anthracene	mg/kg	0.3	2.0	104
6344783	NCP	PAH	Fluoranthene	mg/kg	3.1	4.8	123
6344783	NCP	PAH	Fluorene	mg/kg	<0.1	1.7	104
6344783	NCP	PAH	Naphthalene	mg/kg	<0.1	1.7	103
6344783	NCP	PAH	Phenanthrene	mg/kg	0.6	2.3	111
6344783	NCP	PAH	Pyrene	mg/kg	3.4	5.2	121
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344785	NCP	OCP	BHC (alpha isomer)	mg/kg	<0.05	2.9	85.3
6344785	NCP	OCP	a-Endosulphan	mg/kg	<0.05	1.5	87.4
6344785	NCP	OCP	Aldrin	mg/kg	<0.05	1.5	92.0
6344785	NCP	OCP	BHC (beta isomer)	mg/kg	<0.05	2.5	78.1
6344785	NCP	OCP	b-Endosulphan	mg/kg	<0.05	1.5	115
6344785	NCP	OCP	Chlordane	mg/kg	<0.05	2.9	88.4
6344785	NCP	OCP	cis-Chlordane	mg/kg	<0.05	1.5	90.6
6344785	NCP	OCP	trans-Chlordane	mg/kg	<0.05	1.5	85.2
6344785	NCP	OCP	BHC (delta isomer)	mg/kg	<0.05	2.9	106
6344785	NCP	OCP	DDD	mg/kg	<0.05	1.5	87.6
6344785	NCP	OCP	DDE	mg/kg	<0.05	1.5	84.4
6344785	NCP	OCP	DDT	mg/kg	<0.05	1.5	80.0

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					Sample Value	Expected Value	% Recovery
6344785	NCP	OCP	Dieldrin	mg/kg	<0.05	1.5	87.6
6344785	NCP	OCP	Endosulfan Sulfate	mg/kg	<0.05	1.5	88.2
6344785	NCP	OCP	Endrin	mg/kg	<0.05	1.5	94.0
6344785	NCP	OCP	Endrin Aldehyde	mg/kg	<0.05	1.5	73.4
6344785	NCP	OCP	Endrin Ketone	mg/kg	<0.05	1.5	84.4
6344785	NCP	OCP	Hexachlorobenzene	mg/kg	<0.05	2.6	93.8
6344785	NCP	OCP	Heptachlor Epoxide	mg/kg	<0.05	1.5	87.6
6344785	NCP	OCP	Heptachlor	mg/kg	<0.05	1.5	95.4
6344785	NCP	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05	2.9	87.3
6344785	NCP	OCP	Methoxychlor	mg/kg	<0.05	1.5	89.6
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344791	NCP	PCB	Aroclor 1016	mg/kg	<0.1	2.5	87.1
6344791	NCP	PCB	Aroclor 1260	mg/kg	<0.1	2.6	84.7
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344799	DP07-1.9	CHC	1,2,3,4-Tetrachlorobenzene	mg/kg	<0.1	1.4	79.2
6344799	DP07-1.9	CHC	1,2,3-Trichlorobenzene	mg/kg	<0.1	1.4	85.6
6344799	DP07-1.9	CHC	1,2,4,5-Tetrachlorobenzene	mg/kg	<0.1	2.7	78.1
6344799	DP07-1.9	CHC	1,2,4-Trichlorobenzene	mg/kg	<0.1	1.4	88.6
6344799	DP07-1.9	CHC	1,2-Dichlorobenzene	mg/kg	<0.1	1.4	89.0
6344799	DP07-1.9	CHC	1,3,5-Trichlorobenzene	mg/kg	<0.1	1.4	87.0
6344799	DP07-1.9	CHC	1,3-Dichlorobenzene	mg/kg	<0.1	1.4	82.2
6344799	DP07-1.9	CHC	1,4-Dichlorobenzene	mg/kg	<0.1	1.4	108
6344799	DP07-1.9	CHC	2-Chloronaphthalene	mg/kg	<0.1	1.4	94.2
6344799	DP07-1.9	CHC	Benzal Chloride	mg/kg	<0.1	1.4	104
6344799	DP07-1.9	CHC	Benzotrichloride	mg/kg	<0.1	1.4	96.8
6344799	DP07-1.9	CHC	Benzylchloride	mg/kg	<0.1	1.4	108
6344799	DP07-1.9	CHC	Hexachloroethane	mg/kg	<0.1	1.4	78.6
6344799	DP07-1.9	CHC	Hexachlorobutadiene	mg/kg	<0.1	1.4	90.2
6344799	DP07-1.9	CHC	Pentachlorobenzene	mg/kg	<0.1	1.4	83.2
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344806	NCP	Phenols(Halo)	4-Chloro-3-Methylphenol	mg/kg	<0.5	1.5	65.8
6344806	NCP	Phenols(Halo)	2-Chlorophenol	mg/kg	<0.5	1.5	88.6
6344806	NCP	Phenols(Halo)	2,4-Dichlorophenol	mg/kg	<0.5	1.5	73.0

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					Sample Value	Expected Value	% Recovery
6344806	NCP	Phenols(Halo)	2,6-Dichlorophenol	mg/kg	<0.5	1.5	85.0
6344806	NCP	Phenols(Halo)	2,3,4,6-Tetrachlorophenol	mg/kg	<0.5	2.9	79.3
6344806	NCP	Phenols(Halo)	2,4,5-Trichlorophenol	mg/kg	<0.5	1.5	69.6
6344806	NCP	Phenols(Halo)	2,4,6-Trichlorophenol	mg/kg	<0.5	1.5	65.0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344804	DP07-1.9	Phenols(NonHalo)	Phenol	mg/kg	<0.5	1.4	108
6344804	DP07-1.9	Phenols(NonHalo)	Total Cresols	mg/kg	<1	4.1	106
6344804	DP07-1.9	Phenols(NonHalo)	2,4-Dimethylphenol	mg/kg	<0.5	1.4	108
6344804	DP07-1.9	Phenols(NonHalo)	2-Nitrophenol	mg/kg	<0.5	1.4	81.0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6344021	DP07-1.9	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5	4.4	79.4
6344021	DP07-1.9	HVOL	1,1- Dichloroethane	mg/kg	<0.5	4.4	71.9
6344021	DP07-1.9	HVOL	1,1-Dichloroethene	mg/kg	<0.5	4.4	77.9
6344021	DP07-1.9	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5	4.4	75.3
6344021	DP07-1.9	HVOL	1,2-Dichloroethane	mg/kg	<0.5	4.4	79.1
6344021	DP07-1.9	HVOL	1,2-Dichloropropane	mg/kg	<0.5	4.4	72.5
6344021	DP07-1.9	HVOL	1,3-Dichloropropane	mg/kg	<0.5	4.4	83.2
6344021	DP07-1.9	HVOL	Bromochloromethane	mg/kg	<0.5	4.4	72.2
6344021	DP07-1.9	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5	4.4	76.2
6344021	DP07-1.9	HVOL	Chlorobenzene	mg/kg	<0.5	4.4	74.2
6344021	DP07-1.9	HVOL	Dichloromethane	mg/kg	<1	4.4	83.4
6344021	DP07-1.9	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2	4.4	79.6
6344021	DP07-1.9	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1	4.4	83.4
6344021	DP07-1.9	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5	4.4	76.7

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ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM1919665**	Page	: 1 of 4
Client	: **ALS WATER RESOURCES GROUP**	Laboratory	: Environmental Division Melbourne
Contact	: TUYEN NGUYEN	Contact	: Customer Services EM
Address	: CARIBBEAN BUSINESS PARK 22 DALMORE DRIVE SCORESBY VIC, AUSTRALIA 3179	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8756 8000	Telephone	: +61-3-8549 9600
Project	: DOUGLAS (19-53958)	Date Samples Received	: 19-Nov-2019 15:55
Order number	: 111595	Date Analysis Commenced	: 20-Nov-2019
C-O-C number	: ----	Issue Date	: 21-Nov-2019 15:57
Sampler	: ----		
Site	: ----		
Quote number	: EN/109/18 Scoresby for EM batches		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Uyen Dalkin	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC
Vanessa Phung	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	6339605	----	----	----	----
				Client sampling date / time	11-Nov-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1919665-001	--------	--------	--------	--------
					Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--		**-**	----	----	----	----
Sample weight (dry)	----	0.01	g		**17.8**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		**U.DALKIN**	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	----	----	----	----
Organic Fibre	----	0.1	g/kg		**No**	----	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)				Client sample ID	6339727	----	----	----	----
				Client sampling date / time	11-Nov-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1919665-002	--------	--------	--------	--------
					Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		**Yes**	----	----	----	----
Asbestos Type	1332-21-4	-	--		**Ch+Am**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**N/A**	----	----	----	----
Sample weight (dry)	----	0.01	g		**5.15**	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	----	----	----	----
Organic Fibre	----	0.1	g/kg		**No**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		**U.DALKIN**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	6339605 - 11-Nov-2019 00:00	Brown clay like soil with rock matter.

Sub-Matrix: **SOLID**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	6339727 - 11-Nov-2019 00:00	Asbestos sheeting fragment approx 30 x 30 x 5mm.

ALS Water
A trading name of:
Ecowise Australia Pty Ltd ABN: 94 105 060 320
Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
www.ecowise.com.au www.alsglogal.com

Sample Receipt Advice (SRA)

Client:	Client Contact: Alex Patterson
Douglas Partners Pty Ltd	Phone : 9673 3535
231 Normanby Road	Mobile : 0448 437 156
SOUTH MELBOURNE VIC 3205	Fax : 9673 3599
	Email : alex.patterson@douglaspartners.com.au

Batch Summary: ALS Water Batch No : 19-53958

Date Received : 15/11/2019 1:05:25PM
Scheduled Reporting Date : 22-Nov-2019
Client Job Ref : 95409-00 Northcote
No. of Sample(s) : 40
Program : Misc.
Purchase Order : 148973
NATA report : Reqd.
Lab. Contact : **Tuyen Nguyen**
Phone: (03) 8756 8116
Tuyen.Nguyen@alsglobal.com

Please direct any enqeris you have regarding this project to the above ALS Water contact .

Delivery Details:

COC Received : YES

☐ Sample Temperature on Receipt. 8 C°

☑ Samples preserved where applicable #

Comments:

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Comparisons are made against pretreatment/prersevation as per AS,VICEPA,APHA,USEPA standards
Sample disposal - Aqueous (14 days), Solid (60 days) from date of completio of work order

Client:

Douglas Partners Pty Ltd

231 Normanby Road
SOUTH MELBOURNE VIC 3205

Client Contact: **Alex Patterson**

Phone : 9673 3535
Mobile : 0448 437 156
Fax : 9673 3599
Email : alex.patterson@douglaspartners.com.au

Summary of Sample and Received Analysis:

ALS Sample	Sample Name	Date	Test Count
6339531	DP01-0.9	11/11/2019	**20**
6339534	DP01-3.9	11/11/2019	**7**
6339539	DP02-0.2	13/11/2019	**7**
6339541	DP02-3.9	13/11/2019	**7**
6339544	DP03-0.9	11/11/2019	**7**
6339546	DP04-0.5	12/11/2019	**7**
6339549	DP05-0.9	11/11/2019	**7**
6339551	DP06-0.4	11/11/2019	**7**
6339555	DP06-2.8	11/11/2019	**7**
6339558	DP07-1.9	11/11/2019	**20**
6339561	DP07-4.9	11/11/2019	**7**
6339563	DP08-0.5	11/11/2019	**7**
6339567	DP09-1.9	11/11/2019	**7**

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Comparisons are made against pretreatment/prersevation as per AS,VICEPA,APHA,USEPA standards
Sample disposal - Aqueous (14 days), Solid (60 days) from date of completio of work order

Amended COC.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Date relinquished: 14/11/2011
Results required by: 21/11/2011 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:
Date: 19/11/19

Laboratory Sample Receipt Stamp

LAB REFERENCE: 19-53958

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP01-0.11	0.11	0.21	Fill (brown silty sand)								* IWRG 621 Table 2 Clean Fill Screen (inc. Fe)
11-Nov-19	DP01-0.4	0.4	0.5	Fill (brown silty sand)								
11-Nov-19	DP01-0.9	0.9	1	Fill (orange grey silty clay)		✓						**As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Sn, Se, Ag, Zn
11-Nov-19	DP01-1.9	1.9	2	Fill (brown sandy clay)								
11-Nov-19	DP01-2.9	2.9	3	Fill (brown sandy clay)								
11-Nov-19	DP01-3.9	3.9	4	Fill (gravelly clay)			✓					
11-Nov-19	DP01-4.9	4.9	5	Fill (gravelly clay)								
11-Nov-19	DP01-5.9	5.9	6	Fill (gravelly clay)								
11-Nov-19	DP01-6.9	6.9	7	Fill (gravelly clay)								
11-Nov-19	DP01-9.1	9	9.1	Fill (gravelly clay)								
13-Nov-19	DP02-0.2	0.2	0.3	Fill (brown silty clay)			✓					
13-Nov-19	DP02-0.5	0.5	0.6	Fill (brown silty clay)								
13-Nov-19	DP02-3.9	3.9	4	Fill (brown silty clay)			✓					
11-Nov-19	DP03-0.18	0.18	0.28	Crushed rock								
11-Nov-19	DP03-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP03-0.9	0.9	1	Clayey SILT			✓					
12-Nov-19	DP04-0.2	0.2	0.3	Crushed rock								
12-Nov-19	DP04-0.5	0.5	0.6	Mixed			✓					

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

Date relinquished:	14/11/2011
Results required by:	21/11/2011 PM
Turnaround requirements:	Standard

LAB REFERENCE: _____

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP05-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP05-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP05-0.9	0.9	1	Clayey SILT			✓					
11-Nov-19	DP06-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP06-0.4	0.4	0.5	Fill (brown gravelly sand)			✓					
11-Nov-19	DP06-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fibres				✓				
11-Nov-19	DP06-2.8	2.8	2.9	Fill (brown clayey sand)			✓					
11-Nov-19	DP07-0.2	0.2	0.3	Fill (brown sandy clay)								
11-Nov-19	DP07-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP07-1.9	1.9	2	Fill (brown gravelly sand)		✓						
11-Nov-19	DP07-2.9	2.9	3	Fill (orange brown gravelly sand)								
11-Nov-19	DP07-3.9	3.9	4	Fill (brown gravelly sand)								
11-Nov-19	DP07-4.9	4.9	5	Fill (brown gravelly sand)			✓					
11-Nov-19	DP08-0.3	0.3	0.4	Crushed rock								
11-Nov-19	DP08-0.5	0.5	0.6	Crushed rock			✓					

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Date relinquished: 14/11/2011
Results required by: 21/11/2011 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP09-0.16	0.16	0.26	Crushed rock								
11-Nov-19	DP09-0.9	0.9	1	Clayey SILT								
11-Nov-19	DP09-1.9	1.9	2	Clayey SILT			✓					
11-Nov-19	PACM-1	0	0	Cement sheet				✓				

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

19-53958

ALS DOUGLAS
DOUGLAS 19-53958
MEL-C-04 Due Date: 22/11/2019

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Sample Receipt:
Signed:.....
Date:.....

ECOWISE ENVIRONMENTAL (VIC)
Received By: MM
Date: 15/11/19 Time: 10:...
ECOWISE Bottles: Yes / No
Sample Intact: Yes / No
Chilled/Preserved: Yes / No
Comments: 8°

Laboratory Sample Receipt Stamp

Date relinquished: 14/11/2011
Results required by: 21/11/2011 PM
Turnaround requirements: Standard

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP01-0.11	0.11	0.21	Fill (brown silty sand)								* IWRG 621 Table 2 Clean Fill Screen (inc. Fe)
11-Nov-19	DP01-0.4	0.4	0.5	Fill (brown silty sand)								
11-Nov-19	DP01-0.9	0.9	1	Fill (orange grey silty clay)		✓						**As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Sn, Se, Ag, Zn
11-Nov-19	DP01-1.9	1.9	2	Fill (brown sandy clay)								
11-Nov-19	DP01-2.9	2.9	3	Fill (brown sandy clay)								
11-Nov-19	DP01-3.9	3.9	4	Fill (gravelly clay)			✓					
11-Nov-19	DP01-4.9	4.9	5	Fill (gravelly clay)								
11-Nov-19	DP01-5.9	5.9	6	Fill (gravelly clay)								
11-Nov-19	DP01-6.9	6.9	7	Fill (gravelly clay)								
11-Nov-19	DP01-9.1	9	9.1	Fill (gravelly clay)								
13-Nov-19	DP02-0.2	0.2	0.3	Fill (brown silty clay)			✓					
13-Nov-19	DP02-0.5	0.5	0.6	Fill (brown silty clay)								
13-Nov-19	DP02-3.9	3.9	4	Fill (brown silty clay)			✓					
11-Nov-19	DP03-0.18	0.18	0.28	Crushed rock								
11-Nov-19	DP03-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP03-0.9	0.9	1	Clayey SILT			✓					
12-Nov-19	DP04-0.2	0.2	0.3	Crushed rock								
12-Nov-19	DP04-0.5	0.5	0.6	Mixed			✓					

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Date relinquished: 14/11/2011
Results required by: 21/11/2011 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP05-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP05-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP05-0.9	0.9	1	Clayey SILT			✓					
11-Nov-19	DP06-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP06-0.4	0.4	0.5	Fill (brown gravelly sand)			✓					
11-Nov-19	DP06-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fibres				✓				
11-Nov-19	DP06-2.8	2.8	2.9	Fill (brown clayey sand)			✓					
11-Nov-19	DP07-0.2	0.2	0.3	Fill (brown sandy clay)								
11-Nov-19	DP07-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP07-1.9	1.9	2	Fill (brown gravelly sand)		✓						
11-Nov-19	DP07-2.9	2.9	3	Fill (orange brown gravelly sand)								
11-Nov-19	DP07-3.9	3.9	4	Fill (brown gravelly sand)								
11-Nov-19	DP07-4.9	4.9	5	Fill (brown gravelly sand)			✓					
	DP08-0.3											
11-Nov-19	DP08-0.5	0.5	0.6	Crushed rock								
11-Nov-19	DP08-6.5	6.5	6.6	Silty CLAY			✓					

No sample

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
43 samples in 2 eskies

Date relinquished: 14/11/2011
Results required by: 21/11/2011 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	IWRG 621 clean fill screen	Metals**, PAH, TPH	Asbestos				Notes
11-Nov-19	DP09-0.16	0.16	0.26	Crushed rock								
11-Nov-19	DP09-0.9	0.9	1	Clayey SILT								
11-Nov-19	DP09-1.9	1.9	2	Clayey SILT			✓					
11-Nov-19	PACM-1	0	0	Cement sheet				✓				

ALS Water

CERTIFICATE OF ANALYSIS

Batch No:	**19-56654**	*Page*	Page 1 of 8
Final Report	796315	*Laboratory*	Scoresby Laboratory
		Address	Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
Client:	**Douglas Partners Pty Ltd**	*Phone*	03 8756 8000
		Fax	03 9763 1862
Contact:	**Alex Patterson**	Contact:	Tuyen Nguyen
Address:	231 Normanby Road SOUTH MELBOURNE VIC 3205 AUSTRALIA		Client Manager Tuyen.Nguyen@alsglobal.com
Client Program Ref:	**95409-00 Northcote**	Date Sampled:	11-Nov-2019 - 13-Nov-2019
ALS Program Ref:	**DOUGLAS**	Date Samples Received:	03-Dec-2019
PO No:	**149025**	*Date Issued:*	**10-Dec-2019**

The hash (#) below indicates methods not covered by NATA accreditation in the performance of this service .

Analysis	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*
ASLP(Acetate) Prep	WN33SC	Scoresby	**ASLP(Acet.) PAH**	WP075B, WN33SC	Scoresby	**MS ASLP(Acet) Metals**	WG020A; WN33SC	Scoresby
MS Total Metals	WG020B	Scoresby						

Analysis conducted outside holding time due to late arrival or delayed extraction/analysis. Based on APHA, VICEPA, AS & NEPM

Late Sample Arrival - ASLP(Acet.) PAH[6362660]

100 grams of sample was taken for ASLP determinations unless a lesser amount was submitted to this laboratory .

Accreditation No. 992
Accredited for compliance with ISO/IEC 17025 - Testing

Signatories

Legionella species refers to Legionella species other than Legionella pneumophila

Measurement Uncertainties values for your compliance results are available at this link

Name	*Title*	*Name*	*Title*
John Earl	**Team Leader Metals**	**Kosta Christopoulos**	**Chemist/Analyst**

Batch No: 19-56654
Report Number: 796315
Client: Douglas Partners Pty Ltd
Client Program Ref: 95409-00 Northcote

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

				Sample No.	6362660	6363019
				Client Sample ID	DP07-4.9	DP02-0.5
				Sample Date	11/11/19	13/11/19
				Sample Type	SOIL	SOIL
Analysis	**Analyte**	**CAS #**	**LOR**			
ASLP(Acet.) PAH	Naphthalene	91-20-3	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Acenaphthylene	208-96-8	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Acenaphthene	83-32-9	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Fluorene	86-73-7	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Phenanthrene	85-01-8	<0.001	mg/L	0.003	
ASLP(Acet.) PAH	Anthracene	120-12-7	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Fluoranthene	206-44-0	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Pyrene	129-00-0	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Benz(a)anthracene	56-55-3	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Chrysene	218-01-9	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Benzo(b)fluoranthene	205-99-2	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Benzo(k)fluoroanthene	207-08-9	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Benzo(a)pyrene	50-32-8	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Dibenz(a,h)anthracene	53-70-3	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Benzo(g,h,i)perylene	191-24-2	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Indeno(1,2,3-cd)pyrene	193-39-5	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	Total PAH	TOTALPAH	<0.001	mg/L	0.003	
ASLP(Acet.) PAH	BAP TEQ (zero)	BaP_TEQ_0xE	<0.001	mg/L	<0.001	
ASLP(Acet.) PAH	BAP TEQ (LOR)	BaP_TEQ_1.0x	<0.001	mg/L	0.002	
Analysis	**Analyte**	**CAS #**	**LOR**			
ASLP(Acetate)	Leach Fluid pH	pH_aq_extract		pH units	5.0	5.0
ASLP(Acetate)	Solids Leachate pH (post rolling)	pH_post_rolling		pH units	5.6	5.3
Analysis	**Analyte**	**CAS #**	**LOR**			
MS ASLP(Acet)	ASLP-Arsenic	7440-38-2	<0.01	mg/L		<0.01
MS ASLP(Acet)	ASLP-Cadmium	7440-43-9	<0.002	mg/L		0.004
MS ASLP(Acet)	ASLP-Chromium	7440-47-3	<0.01	mg/L		<0.01

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample No.	6362660	6363019
					Client Sample ID	DP07-4.9	DP02-0.5
					Sample Date	11/11/19	13/11/19
					Sample Type	SOIL	SOIL
MS ASLP(Acet)	ASLP-Copper	7440-50-8	<0.01	mg/L			<0.01
MS ASLP(Acet)	ASLP-Lead	7439-92-1	<0.01	mg/L			3.6
MS ASLP(Acet)	ASLP-Mercury	7439-97-6	<0.001	mg/L			<0.001
MS ASLP(Acet)	ASLP-Molybdenum	7439-98-7	<0.01	mg/L			<0.01
MS ASLP(Acet)	ASLP-Nickel	7440-02-0	<0.01	mg/L			0.02
MS ASLP(Acet)	ASLP-Selenium	7782-49-2	<0.01	mg/L			<0.01
MS ASLP(Acet)	ASLP-Silver	7440-22-4	<0.01	mg/L			<0.01
MS ASLP(Acet)	ASLP-Tin	7440-31-5	<0.01	mg/L			<0.01
MS ASLP(Acet)	ASLP-Zinc	7440-66-6	<0.01	mg/L			0.28
Analysis	**Analyte**	**CAS #**	**LOR**				
MS Total Metals	Arsenic	7440-38-2	<5	mg/kg			10
MS Total Metals	Cadmium	7440-43-9	<0.2	mg/kg			0.3
MS Total Metals	Chromium	7440-47-3	<5	mg/kg			20
MS Total Metals	Copper	7440-50-8	<5	mg/kg			29
MS Total Metals	Lead	7439-92-1	<5	mg/kg			370
MS Total Metals	Mercury	7439-97-6	<0.05	mg/kg			0.43
MS Total Metals	Molybdenum	7439-98-7	<5	mg/kg			<5
MS Total Metals	Nickel	7440-02-0	<5	mg/kg			17
MS Total Metals	Selenium	7782-49-2	<3	mg/kg			<3
MS Total Metals	Silver	7440-22-4	<5	mg/kg			<5
MS Total Metals	Tin	7440-31-5	<5	mg/kg			7
MS Total Metals	Zinc	7440-66-6	<5	mg/kg			100

Samples not collected by ALS and are tested as received.

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MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

					Value
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6368296	QC - Blank	MS Total Metals	Arsenic	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Cadmium	mg/kg	<0.2
6368296	QC - Blank	MS Total Metals	Chromium	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Copper	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Lead	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Mercury	mg/kg	<0.05
6368296	QC - Blank	MS Total Metals	Molybdenum	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Nickel	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Selenium	mg/kg	<3
6368296	QC - Blank	MS Total Metals	Silver	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Tin	mg/kg	<5
6368296	QC - Blank	MS Total Metals	Zinc	mg/kg	<5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Arsenic	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Cadmium	mg/L	<0.002
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Chromium	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Copper	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Lead	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Mercury	mg/L	<0.001
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Molybdenum	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Nickel	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Selenium	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Silver	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Tin	mg/L	<0.01
6366601	QC - Blank	MS ASLP(Acet) Metals	ASLP-Zinc	mg/L	<0.01
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Value
6366264	QC - Blank	ASLP(Acet.) PAH	Naphthalene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Acenaphthylene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Acenaphthene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Fluorene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Phenanthrene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Anthracene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Fluoranthene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Pyrene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Benz(a)anthracene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Chrysene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Benzo(b)fluoranthene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Benzo(k)fluoroanthene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Benzo(a)pyrene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Dibenz(a,h)anthracene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Benzo(g,h,i)perylene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Indeno(1,2,3-cd)pyrene	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	Total PAH	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	BAP TEQ (zero)	mg/L	<0.001
6366264	QC - Blank	ASLP(Acet.) PAH	BAP TEQ (LOR)	mg/L	0.002

QUALITY CONTROL - DUPLICATES

QC Data for duplicates is calculated on raw 'unrounded' values. Laboratory duplicates are randomly selected samples tested by the laboratory to maintain method precision and provide information on sample homogeniety.
RPD = Relative Percentage Difference for duplicate determinations. RPD's that fall outside the general acceptance criteria will be attributed to non-homogeneity of samples or results of low magnitudes.

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample Value	Duplicate Value	% RPD
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6368311	NCP	MS Total Metals	Arsenic	mg/kg	6	7	11.6
6368311	NCP	MS Total Metals	Cadmium	mg/kg	0.2	0.3	12.7
6368311	NCP	MS Total Metals	Chromium	mg/kg	22	25	12.4
6368311	NCP	MS Total Metals	Copper	mg/kg	38	43	10.9
6368311	NCP	MS Total Metals	Lead	mg/kg	31	34	10.8
6368311	NCP	MS Total Metals	Mercury	mg/kg	0.08	0.09	12.1
6368311	NCP	MS Total Metals	Molybdenum	mg/kg	<5	<5	0
6368311	NCP	MS Total Metals	Nickel	mg/kg	8	9	10.3
6368311	NCP	MS Total Metals	Selenium	mg/kg	<3	<3	0
6368311	NCP	MS Total Metals	Silver	mg/kg	<5	<5	0
6368311	NCP	MS Total Metals	Tin	mg/kg	<5	<5	0
6368311	NCP	MS Total Metals	Zinc	mg/kg	160	170	10.8
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Arsenic	mg/L	<0.01	<0.01	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Cadmium	mg/L	0.004	0.004	0.5
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Copper	mg/L	<0.01	<0.01	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Lead	mg/L	3.6	3.5	1.7
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Mercury	mg/L	<0.001	<0.001	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Nickel	mg/L	0.02	0.02	1.5
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Selenium	mg/L	<0.01	<0.01	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Silver	mg/L	<0.01	<0.01	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Tin	mg/L	<0.01	<0.01	0
6366605	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Zinc	mg/L	0.28	0.27	2.5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6366262	NCP	ASLP(Acet.) PAH	Naphthalene	mg/L	0.049	0.049	0.5
6366262	NCP	ASLP(Acet.) PAH	Acenaphthylene	mg/L	0.022	0.023	7.2
6366262	NCP	ASLP(Acet.) PAH	Acenaphthene	mg/L	0.006	0.006	5.8
6366262	NCP	ASLP(Acet.) PAH	Fluorene	mg/L	0.008	0.008	1.6
6366262	NCP	ASLP(Acet.) PAH	Phenanthrene	mg/L	0.079	0.082	2.7
6366262	NCP	ASLP(Acet.) PAH	Anthracene	mg/L	0.011	0.011	1.2
6366262	NCP	ASLP(Acet.) PAH	Fluoranthene	mg/L	0.014	0.014	1.9
6366262	NCP	ASLP(Acet.) PAH	Pyrene	mg/L	0.010	0.010	1.0

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample Value	Duplicate Value	% RPD
6366262	NCP	ASLP(Acet.) PAH	Benz(a)anthracene	mg/L	0.001	0.001	8.5
6366262	NCP	ASLP(Acet.) PAH	Chrysene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Benzo(b)fluoranthene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Benzo(k)fluoroanthene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Benzo(a)pyrene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Dibenz(a,h)anthracene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Benzo(g,h,i)perylene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Indeno(1,2,3-cd)pyrene	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	Total PAH	mg/L	0.20	0.20	2.0
6366262	NCP	ASLP(Acet.) PAH	BAP TEQ (zero)	mg/L	<0.001	<0.001	0
6366262	NCP	ASLP(Acet.) PAH	BAP TEQ (LOR)	mg/L	0.002	0.002	0.0

QUALITY CONTROL - SPIKES

QC Data for spikes is calculated on raw 'unrounded' values. Laboratory spikes are randomly selected samples in which the analytes in question have been artificially introduced and recovered via standard analysis and are used to provide information on potential matrix effects on analyte recoveries.
Spike recoveries that fall outside the general acceptance criteria will be attributed to sample matrix interference or results of high magnitudes.
NCP: Non-Customer Parent (sample quality is representative of the analytical batch but the sample that was QC tested belongs to a customer not pertaining to the report.)

					Sample Value	Expected Value	% Recovery
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6368308	NCP	MS Total Metals	Mercury	mg/kg	<0.05	1.0	105
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Arsenic	mg/L	<0.01	0.40	108
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Cadmium	mg/L	0.004	0.40	104
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Chromium	mg/L	<0.01	0.40	99.1
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Copper	mg/L	<0.01	0.41	94.5
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Lead	mg/L	3.6	4.0	91.6
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Mercury	mg/L	<0.001	0.0020	108
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Molybdenum	mg/L	<0.01	0.40	107
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Nickel	mg/L	0.02	0.42	95.5
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Selenium	mg/L	<0.01	0.40	109
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Tin	mg/L	<0.01	0.40	104
6366606	DP02-0.5	MS ASLP(Acet) Metals	ASLP-Zinc	mg/L	0.28	0.68	98.2

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

					Sample Value	Expected Value	% Recovery
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
6366263	NCP	ASLP(Acet.) PAH	Naphthalene	mg/L	<0.001	0.033	71.4
6366263	NCP	ASLP(Acet.) PAH	Acenaphthylene	mg/L	<0.001	0.033	86.1
6366263	NCP	ASLP(Acet.) PAH	Acenaphthene	mg/L	<0.001	0.033	84.6
6366263	NCP	ASLP(Acet.) PAH	Fluorene	mg/L	<0.001	0.033	98.5
6366263	NCP	ASLP(Acet.) PAH	Phenanthrene	mg/L	<0.001	0.033	111
6366263	NCP	ASLP(Acet.) PAH	Anthracene	mg/L	<0.001	0.033	110
6366263	NCP	ASLP(Acet.) PAH	Fluoranthene	mg/L	<0.001	0.033	113
6366263	NCP	ASLP(Acet.) PAH	Pyrene	mg/L	<0.001	0.033	111
6366263	NCP	ASLP(Acet.) PAH	Benz(a)anthracene	mg/L	<0.001	0.033	121
6366263	NCP	ASLP(Acet.) PAH	Chrysene	mg/L	<0.001	0.033	87.5
6366263	NCP	ASLP(Acet.) PAH	Benzo(b)fluoranthene	mg/L	<0.001	0.033	93.4
6366263	NCP	ASLP(Acet.) PAH	Benzo(k)fluoroanthene	mg/L	<0.001	0.033	93.2
6366263	NCP	ASLP(Acet.) PAH	Benzo(a)pyrene	mg/L	<0.001	0.033	87.4
6366263	NCP	ASLP(Acet.) PAH	Dibenz(a,h)anthracene	mg/L	<0.001	0.033	102
6366263	NCP	ASLP(Acet.) PAH	Benzo(g,h,i)perylene	mg/L	<0.001	0.033	105
6366263	NCP	ASLP(Acet.) PAH	Indeno(1,2,3-cd)pyrene	mg/L	<0.001	0.033	105

Samples not collected by ALS and are tested as received.

A blank space indicates no test performed. Soil microbiological testing was commenced within 4 days from the day collected unless otherwise stated.
MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate.
MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate.
Calculated results are based on raw data.

ALS Water
A trading name of:
Ecowise Australia Pty Ltd ABN: 94 105 060 320
Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179
www.ecowise.com.au www.alsglogal.com

Sample Receipt Advice (SRA)

Client:	Client Contact:	Alex Patterson
Douglas Partners Pty Ltd	Phone :	9673 3535
	Mobile :	0448 437 156
231 Normanby Road	Fax :	9673 3599
SOUTH MELBOURNE VIC 3205	Email :	alex.patterson@douglaspartners.com.au

Batch Summary: ALS Water Batch No : 19-56654

Date Received : 3/12/2019 11:25:44AM
Scheduled Reporting Date : 10-Dec-2019

Client Job Ref : 95409-00 Northcote
No. of Sample(s) : 3

Program : Misc.
Purchase Order : 149025

NATA report : Reqd.

Lab. Contact : **Tuyen Nguyen**
Phone: (03) 8756 8116
Tuyen.Nguyen@alsglobal.com

Please direct any enqeris you have regarding this project to the above ALS Water contact .

Delivery Details:

COC Received : YES

☐ Sample Temperature on Receipt. 4.0 C °

☑ Samples preserved where applicable #

Comments:

Summary of Sample and Received Analysis:

ALS Sample	Sample Name	Date	Test Count
6362660	DP07-4.9	11/11/2019	**2**
6363019	DP02-0.5	13/11/2019	**4**

Disclaimer : This document contains priviledged and confidential information intended only for the use of the addressee. If you are not the addressee, you are hereby notified that you must not disseminate, copy or take action of its contents. If you have received this document in error, please notify the ALS Water immediately.
Comparisons are made against pretreatment/prersevation as per AS,VICEPA,APHA,USEPA standards
Sample disposal - Aqueous (14 days), Solid (60 days) from date of completio of work order

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: Northcote
Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
22 Dalmore Drive
Scoresby
Ph:
Attn: *Tuyen Nguyen*
Samples at ALS

Date requested: 3/12/2019
Results required by: 10/12/2019 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:
Date: 03/12/19.

Laboratory Sample Receipt Stamp

LAB REFERENCE: 19-56654

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	Leachable metals*	Leachable PAH	Metals*				Notes
11-Nov-19	DP01-0.11	0.11	0.21	Fill (brown silty sand)								
11-Nov-19	DP01-0.4	0.4	0.5	Fill (brown silty sand)								
11-Nov-19	DP01-0.9	0.9	1	Fill (orange grey silty clay)								
11-Nov-19	DP01-1.9	1.9	2	Fill (brown sandy clay)								*As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Sn, Se, Ag, Zn
11-Nov-19	DP01-2.9	2.9	3	Fill (brown sandy clay)								
11-Nov-19	DP01-3.9	3.9	4	Fill (gravelly clay)								
11-Nov-19	DP01-4.9	4.9	5	Fill (gravelly clay)								
11-Nov-19	DP01-5.9	5.9	6	Fill (gravelly clay)								
11-Nov-19	DP01-6.9	6.9	7	Fill (gravelly clay)								
11-Nov-19	DP01-9.1	9	9.1	Fill (gravelly clay)								
13-Nov-19	DP02-0.2	0.2	0.3	Fill (brown silty clay)								
13-Nov-19	DP02-0.5	0.5	0.6	Fill (brown silty clay)	6339540	✓		✓				
13-Nov-19	DP02-3.9 **	3.9	4	Fill (brown silty clay)		✓	6339541	Rec. 15/11				
11-Nov-19	DP03-0.18	0.18	0.28	Crushed rock								
11-Nov-19	DP03-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP03-0.9	0.9	1	Clayey SILT								
12-Nov-19	DP04-0.2	0.2	0.3	Crushed rock								
12-Nov-19	DP04-0.5	0.5	0.6	Mixed								

** Insufficient volume for ASLP. informed Alex on 03/12.

Douglas Partners
Geotechnics / Environment / Groundwater

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Attn: *Tuyen Nguyen*
Samples at ALS

Date requested: 3/12/2019
Results required by: 10/12/2019 PM
Turnaround requirements: Standard

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	Leachable metals*	Leachable PAH					Notes
11-Nov-19	DP05-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP05-0.4	0.4	0.5	Clayey SILT								
11-Nov-19	DP05-0.9	0.9	1	Clayey SILT								
11-Nov-19	DP06-0.03	0.03	0.13	Crushed rock								
11-Nov-19	DP06-0.4	0.4	0.5	Fill (brown gravelly sand)								
11-Nov-19	DP06-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fill (brown gravelly sand)								
11-Nov-19	DP06-1.9	1.9	2	Fibres								
11-Nov-19	DP06-2.8	2.8	2.9	Fill (brown clayey sand)								
11-Nov-19	DP07-0.2	0.2	0.3	Fill (brown sandy clay)								
11-Nov-19	DP07-0.9	0.9	1	Fill (brown gravelly sand)								
11-Nov-19	DP07-1.9	1.9	2	Fill (brown gravelly sand)								
11-Nov-19	DP07-2.9	2.9	3	Fill (orange brown gravelly sand)								
11-Nov-19	DP07-3.9	3.9	4	Fill (brown gravelly sand)								
11-Nov-19	DP07-4.9	4.9	5	Fill (brown gravelly sand)		633956	✓					
11-Nov-19	DP08-0.3	0.3	0.4	Crushed rock								

Douglas Partners
Geotechnics / Environment / Groundwater

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Project Number: *95409.00*
DP Contact Person: *Alex Patterson*
Prior storage: *Esky / Fridge*

To *ALS*
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Scoresby
Ph:
Attn: *Tuyen Nguyen*

Samples at ALS

Date requested:	3/12/2019
Results required by:	10/12/2019 PM
Turnaround requirements:	Standard

Sample Receipt:
Signed:.....
Date:.....

Laboratory Sample Receipt Stamp

LAB REFERENCE: _____

Sampled Date	Field_ID	Sample Depth From	Sample Depth To	Matrix Type	Lab ID	Leachable metals*	Leachable PAH					Notes
11-Nov-19	DP08-0.5	0.5	0.6	Crushed rock								
11-Nov-19	DP09-0.16	0.16	0.26	Crushed rock								
11-Nov-19	DP09-0.9	0.9	1	Clayey SILT								
11-Nov-19	DP09-1.9	1.9	2	Clayey SILT								
11-Nov-19	PACM-1	0	0	Cement sheet								

FSG
GEOTECHNICS
+FOUNDATIONS

NORTHCOTE PLAZA
25 SEPARATION STREET, NORTHCOTE
PRELIMINARY GEOTECHNICAL INVESTIGATION

Northcote Devco Pty Ltd
c/- Time & Place Pty Ltd
Level 26, 35 Collins Street
MELBOURNE VIC 3000

REPORT NO. 4067RLJL01A
11 March 2022

REV	DATE	COMMENTS	AUTHOR	REVIEWED	AUTHORISED
A	11 Mar 2022	Final	ALH	JEF	JEF

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Plate 8-1: Indicative rock excavatability chart of weathered rock in basement excavation – blue envelope (after Walton and Wang, 1993)

Figure 1: Site Locality Plan

Figure 2: Borehole Location Plan

Figure 3: Initial Young's modulus (pressuremeter test) results vs elevation

Figure 4: Saturated moisture content of weathered rock vs elevation

Figure 5: UCS of weathered rock vs elevation

Compass groundwater elevation contours

Appendices

Appendix A
Engineering Borehole Reports FSG-BH01 to FSG-BH09
Standpipe Installation Reports FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH07 and FSG-BH09
Information sheets

Appendix B
Core Photographs FSG-BH01 to FSG-BH09

Appendix C
Laboratory test reports

Appendix D
Important information about your FSG report

1. Engagement

Northcote Devco Pty Ltd (ND) has engaged FSG Geotechnics & Foundations (FSG) to provide geotechnical consulting services for the proposed redevelopment of the Northcote Plaza site located at 25 Separation Street, Northcote.

Acceptance of our proposal (reference 5270LALH01A, dated 6 October 2021) and approval to proceed with the preliminary (pre demolition) geotechnical investigation was provided by Time & Place Pty Ltd (T&P - project managers acting on behalf of ND) in an email dated 5 November 2021.

This report presents the results and findings of the preliminary geotechnical investigation undertaken at the Northcote Plaza site together with advice and recommendations on geotechnical design issues consistent with the aims of the investigation. A supplementary (post demolition) investigation (boreholes to be located predominantly across the western half of the site) will need to be completed following demolition and the recommendations presented in this report reviewed, and if necessary, updated.

2. Site conditions and proposed development

The site of the proposed redevelopment forms the southern portion of the existing Northcote Plaza Shopping Centre (Plaza) and covers an area of about 15 040 m^2. The site is bound by retail outlets to the north, Separation Street to the south and internal roads and carparking to the east and west. The majority of the site is occupied by the existing Plaza including the former and Kmart and Coles stores. The south-eastern and north-western corners of the greater site comprises asphalt surfaced carparks and delivery driveways. The Kmart store is no longer operational.

The approximate location of the site is shown in Figure 1 – Site locality plan.

A feature and level survey plan of the site indicates that the site is generally flat (ground surface levels of between about RL 48.4 m and RL 52 m) except for the south-western boundary where there is a step up in elevation to about RL 53.7 m. We understand that the floor level of the former Kmart store is about RL 49.4 m.

We understand that quarries associated with the former Northcote Brick works encroach into the footprint of the proposed development along the eastern and southwestern boundaries. We understand that the former quarry to the west (western quarry) was backfilled sometime between 1945 and 1965 and the former quarry to the east (eastern quarry) was utilised following the cessation of quarrying activities as the Northcote Regional tip (landfill) and was progressively backfilled with waste (putrescible) during the late 1980s.

We understand that the proposed redevelopment comprises demolition of the southern part of the Plaza and construction of the following key elements:

- A three-level common basement (lowest floor founding level of about RL 39.7 m) across much of the Southern Plaza site.
- A common single level podium structure over the basement footprint. Indicative column working loads as provided by Webber Design Pty Ltd (Webber – the structural engineer for the project) for the podium are about 4 MN.
- Five towers (Towers A, B, C1, C2 and D) of between about three and eighteen levels (generally within the basement footprint although Towers A and D are partially located outside the common basement), as follows:
    - Tower A (located in the north-eastern corner of the site) – between about nine and eleven above ground levels. Indicative column working loads of about 10.5 MN.
    - Tower B (located in the centre of the site) – between about fourteen and eighteen above ground levels. Indicative column working loads of about 12.5 MN to 16.5 MN.
    - Tower C1 (located on the western boundary of the site) – between about seven and fourteen above ground levels. Indicative column working loads are in the order of about 7 MN to 8 MN for the seven level tower and about 12.5 MN for the fourteen level tower.

- Tower C2 (located along the southern boundary of the site) – about three above ground levels. Indicative column working loads of about 5 MN.
- Tower D (located in the south-eastern part of the site) – about four above ground levels. Indicative column working loads of about 5 MN.

- Common three level low-rise connections between Towers A, B and C1. Indicative column working loads are in the order of about 5 MN.
- A sixth tower, Tower E (comprising six above floor levels with no basement) located in the north-east corner of the greater site (in the north-east corner of the site and separated from the proposed basement footprint by the northern part of the existing plaza). Indicative column working loads are in the order of about 4 MN to 5 MN.

The site locality and approximate layout of the proposed tower scheme, the basement extent and inferred edge of the former quarries is shown on Figure 2 – Site plan.

3. Previous investigations

We understand that several stages of geotechnical and environmental investigations have been previously completed over parts of the site by Douglas Partners Pty Ltd (DP). To assist our assessment and supplement our intrusive investigation, we have been provided with the following DP reports:

- *Report of Geotechnical investigation* (reference 95409.00, dated November 2020). This report presents the results of an investigation comprising the drilling of three geotechnical boreholes (DP02b, DP04 and DP08) to depths of between about 13.1 m and 20.1 m, along with the installation of two groundwater wells (in Boreholes DP02b and DP08). Boreholes were located near to either the eastern, southern or western boundary of the site outside the footprint of the existing Plaza structure.
- *Report on Preliminary Site Investigation for Contamination* (reference 95409.01, dated February 2021). This report presents the results of a preliminary environmental investigation comprising the drilling of seven environmental boreholes (DP01 to DP03, DP05 to DP07 and DP09), along with opportunistic sampling from Boreholes DP02b, DP04 and DP08 drilled as part of the previously referenced geotechnical investigation. Whilst the environmental boreholes are relatively shallow and of limited use with respect to geotechnical information, we note that this report provides a detailed summary and comments regarding the extents of the former quarries and a discussion of the thickness and composition of fill across these areas of the site.
- *Report on Additional Geotechnical Investigation* (reference 95409.02 R.003.Rev0, dated 26 July 2021). This report presents the factual results only of an additional investigation completed using a low headroom / limited access drilling rig within the Kmart building. An additional four geotechnical boreholes (DP12, DP13, DP16 and DP17) with standpipes were drilled to depths of between about 7.5 m and 9 m. We note that none of these boreholes extended below the proposed basement floor level and hence, have limited use with respect to assessing founding conditions. They do provide some information on the nature of the upper portion of the siltstone. DP indicates that a build-up of silt was observed in all of the standpipes installed during this investigation and therefore, no additional information on the depth to groundwater was able to be obtained.
- *Report on Limited Detailed Site Investigation (Contamination)* (reference 95409.02 R.002.Rev0, dated 23 July 2021). This report presents the results of a preliminary environmental investigation comprising the drilling of eight environmental boreholes (DP10, DP11, DP14, DP15 and DP18 to DP21), along with opportunistic sampling of Boreholes DP12, DP13, DP16 and DP17 drilled as part of the previously referenced 2021 geotechnical investigation. Given the shallow depth of drilling we consider these environmental boreholes to be of limited use with respect to geotechnical considerations.

Where relevant, we have considered the DP information in our report. The approximate locations of selected DP boreholes are shown on Figure 2 and the subsurface conditions encountered in these boreholes has been included in Section 6.3 - Subsurface conditions.

4. Aims of the geotechnical investigation

Based on our review of information provided by T&P and Webber Design Pty Ltd (Webber - project structural engineer), our understanding of the proposed development and our experience with the subsurface conditions in the area and with similar scale buildings and basements, the aims of the geotechnical investigation were as follows:

- Assess the subsurface conditions at the site relevant to the proposed development, including the presence and depth of fill material and the depth to groundwater.
- Undertake in situ pressuremeter testing to assess the deformation characteristics of the weathered siltstone to assist in the assessment of design parameters for footing and retention design.
- Provide recommendations on basement retention alternatives including design earth pressures to be adopted in retaining wall design.
- Provide recommendations on footing system options including design allowable bearing pressures for spread footings and design parameters for piled footings (if necessary), likely founding depths and estimates of settlements.
- Provide comment of the likely excavation characteristics of materials over the depth of the proposed basement and lift overrun pits.
- Provide comment and recommendations for temporary and permanent groundwater management systems.
- Provide recommendations for the excavation of temporary batter slopes.
- Provide recommendations on subgrade preparation procedures for the lowest floor slab, including the placement of engineered fill, if required.
- Assess the earthquake risk classification for the site in accordance with AS 1170.4 (2007).

5. Field investigation and laboratory testing

5.1 Field investigation

The preliminary- geotechnical investigation comprised the drilling of nine boreholes (FSG-BH01 to FSG-BH09) to depths of between about 13 m and 21.4 m. Boreholes were drilled using either a standard or low headroom / limited access track mounted drill rig between the 18 November 2021 and 1 February 2022. We note the investigation works were not completed in a single mobilisation due to difficulties in procuring a low headroom / limited access drilling rig.

Borehole locations were based upon providing good spatial coverage across the site and access limitations associated with the active shopping centre carpark and low headroom plaza. The locations of the boreholes were measured relative to site features and the ground surface elevations were measured from known elevations taken from the feature and level survey plan. The approximate location of these boreholes is shown on Figure 2.

A supplementary investigation, comprising the drilling of an additional six boreholes (FSG-BH10 to FSG-BH15) is proposed to be completed following demolition of buildings located across the western portion of the site. The approximate locations of these boreholes are also shown on Figure 2.

Solid flight auger and wash bore drilling techniques were used to penetrate the fill and natural soils. Standard penetration tests (SPTs) were undertaken at regular intervals in soils for visual and strength assessment purposes. NMLC coring techniques were used to advance the boreholes where weathered rock was encountered. Core samples of the weathered rock were recovered, photographed and representative samples taken for laboratory testing.

In situ pressuremeter tests were also undertaken within the weathered rock as part of the geotechnical investigation. One to three tests were undertaken in each borehole to assist our assessment of the deformation characteristics of the weathered rock at various levels.

Groundwater monitoring wells (standpipes) were installed in Boreholes FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH07 and FSG-BH09 to allow the measurement of the depth to groundwater from the ground surface. Following installation of the groundwater wells they were developed (removal of water from the well) to allow groundwater inflow such that any measurements are not impacted by remnant drilling fluid introduced to the hole during the drilling process.

The appointed drilling subcontractors managed drilling waste generated during the investigation by temporarily storing it in intermediate bulk containers (IBCs) and steel drums. On completion of the works, the drilling waste was disposed of via a licensed waste contractor.

A geotechnical engineer from FSG was present on site throughout the investigation and located the boreholes, described the subsurface materials encountered, recovered samples, performed in situ tests, and photographed core samples.

The results of the geotechnical investigation are presented in Appendix A as Engineering Borehole Reports FSG-BH01 to FSG-BH09 and Standpipe Installation Reports (where relevant), together with explanatory notes and abbreviations relevant to the interpretation of these reports.

Photographs of core samples recovered from the boreholes drilled as part of this investigation are presented in Appendix B.

5.2 Laboratory Testing

Uniaxial compressive strength (UCS) and saturated moisture content (SMC) testing was undertaken on representative samples of the weathered siltstone to assist with our assessment of both the weathering and strength. All laboratory testing was performed by Bamford Rock Testing Services Pty Ltd (BRTS) in their NATA accredited laboratory. All samples were saturated under partial vacuum for 24 hours prior to testing.

The results of the laboratory testing undertaken as part of this investigation (together with some data from the previous DP investigations) are summarised and discussed in Section 6.6 of this report and the laboratory test reports are presented in Appendix C.

6. Results of the investigation

6.1 Geology

The Geological Survey of Victoria (GSV) 1:63 360 scale Ringwood mapsheet indicates the site is underlain by Silurian age siltstone and sandstone of the Dargile Formation (since renamed the Melbourne Formation). A layer of residual siltstone (stiff to hard clay) is typically encountered at the surface of the unit beneath a layer of fill material. Given the presence of former quarries (clay pits) in the vicinity of the site we consider there is potential for the siltstone to be deeply weathered in areas, particularly in areas close to the edge of the former quarries.

We consider the subsurface conditions encountered in the boreholes are generally consistent with the published geological information and our experience in the area.

6.2 Former quarries

Based on the information in the DP reports, we understand that there are former quarries located to the both the east and west of the site. It has been inferred that a significant thickness (associated with backfilling of the former quarries) of fill is present where the former quarries encroached onto the site.

Based on the DP information we understand the following with respect to the former quarries:

- The western quarry was a clay quarry that was backfilled sometime between 1945 and 1965 with material of unknown origin.

- The eastern quarry was utilised as a landfill (inert and putrescible waste) from about 1979 until about 1998. We understand that the landfill was capped and rehabilitated sometime between about 1998 and 2002. The floor of the former quarry (at its deepest point) was about RL 4 m (i.e., about 40 m to 50 m below the current ground level).
- The extent of the former eastern quarry appears to be relatively well delineated with a number of historic environmental and geotechnical boreholes located in this area of the site.
- Due to the existing Plaza, delineation of the extent of the former western quarry is uncertain and the approximate edge of the former quarry on this boundary has been inferred by DP from review of historical aerial imagery only. The historical aerial imagery indicates that the former western quarry could extend a significant distance into the footprint of the common basement and Tower C1.
- Previous DP boreholes drilled within the proposed building footprint indicate the thickness of backfill where the former eastern quarry extends onto the site could be in the order of about 6.5 m, which is above the base of the proposed basement excavation. The historical DP boreholes indicate this backfill material is predominantly clayey with only minor amounts of deleterious material (i.e., there did not appear to be any putrescible waste encountered in these boreholes).
- Boreholes located within the inferred extent of the former western quarry indicate that the depth of backfilling in this area could be in the order of about 9 m to 9.5 m and the fill also appears to comprise predominantly clayey fill.

The approximate extents of the former quarries as inferred by DP and presented in their previous reports is shown on Figure 2.

6.3 Subsurface conditions

A description of the main subsurface units encountered during this geotechnical investigation (and select boreholes from previous investigations) is presented below. A summary of the depth ranges of the main subsurface units and sub-units encountered in the FSG boreholes and selected DP boreholes is presented in Table 5-1 and Table 5-2 respectively.

In this report we have generally used the term siltstone as a generic term to describe both siltstone and sandstone of the Melbourne Formation. We also note that the tables present the predominant weathering grade over the depth interval indicated and some variation in weathering may be encountered over that interval. Refer to the engineering borehole reports for further information on the extent of the different rock types encountered and detailed descriptions of the materials encountered.

Unit 1 – Fill

A layer of inferred uncontrolled fill was encountered at all borehole locations. Fill was thickest at locations nearest to the former quarry extents and ranged between about 0.1 m (the centre of the site) up to about 6.5 m (former eastern quarry). Whilst not shown on our figures, we note that several environmental boreholes drilled within the footprint of the former western quarry encountered fill to depths of up to about 9 m.

A concrete slab (120 mm to 170 mm thick) was encountered at the surface of Boreholes FSG-BH01, FSG-BH04, FSG-BH05, FSG-BH06, DP08, DP13, DP16 and DP17. Boreholes FSG-BH01 and FSG-BH06 also encountered a secondary concrete slab beneath underlying fill materials. A thin layer of asphalt between 10 mm and 50 mm thick was encountered at the surface of Boreholes FSG-BH03, FSG-BH08, FSG-BH09 and DP04.

The fill materials were variable and comprised predominately loose to dense sandy and silty gravels or firm to stiff silty, sandy or gravelly clays with lesser amounts of deleterious material. No landfill material (i.e., significant amounts of putrescible waste) was identified during borehole drilling from either the FSG or DP investigations.

A strong hydrocarbon odour was noted within the fill whilst drilling Borehole FSG-BH06.

Unit 2 – Residual siltstone – (clay, silt and sandy clay)

Inferred residual siltstone encountered predominantly as a stiff to hard clay, silt or sandy clay was encountered beneath the fill materials in a majority of boreholes. No residual siltstone was observed in Boreholes FSG-BH06, DP02B and DP08. Where encountered, the depth to the base of the residual siltstone varied between about 0.8 m and 6.3 m (greatest depth typically encountered at boreholes near to the former quarries). We note that the transition from residual siltstone to extremely weathered siltstone is somewhat subjective and the inferred depth ranges of this unit should be considered approximate only.

Unit 3 – Melbourne Formation – variably weathered siltstone

Weathered siltstone was encountered beneath either the Unit 1 or Unit 2 materials in all boreholes. The weathering of the siltstone typically reduced with increasing depth. The siltstone was initially encountered as either extremely weathered rock (consistency typical of a hard clay) or extremely to highly weathered siltstone (very low or very low to low strength rock with some clay lenses) becoming highly or highly to moderately with increasing depth. In several boreholes, particularly near to, or within the extent of the former eastern quarry, a relatively deep weathering profile was observed with zones of extremely or extremely to highly weathered siltstone observed to significant depths.

In relation to the extent of the more deeply weathered siltstone encountered we highlight the following:

- Borehole FSG-BH01 (located just within the inferred extent of the former eastern quarry) encountered predominantly extremely weathered siltstone (typically of a hard clay consistency) with some bands of extremely to highly and highly weathered siltstone to a depth of about 17.0 m. This was underlain by highly weathered siltstone grading to highly to moderately weathered siltstone to the maximum depth investigated.
- Borehole FSG-BH02 (near to the inferred extent of the former eastern quarry) encountered predominantly extremely weathered siltstone to a depth of about 11 m, before highly weathered siltstone was then encountered to a depth of about 15 m. This was in turn underlain by a layer of predominantly extremely to highly weathered siltstone to a depth of about 18.3 m before highly to moderately weathered siltstone was encountered to the maximum depth investigated.
- A zone of extremely to highly weathered siltstone was encountered in Borehole FSG-BH06 from a depth of about 14.7 m to 17.3 m. This layer of more weathered siltstone was between highly or highly to moderately weathered siltstone.
- Extremely to highly weathered siltstone was encountered to the maximum depth investigated (9 m) in Borehole DP17.
- Zones of extremely or extremely to highly weathered siltstone typically up to about 0.5 m thick were observed within the less weathered siltstone profile in several boreholes.

With respect to the strength of the weathered siltstone encountered, we note the following:

- The extremely weathered siltstone had engineering properties consistent with a hard clay.
- The extremely to highly weathered siltstone was typically encountered as a very low or very low to low strength rock.
- The highly weathered siltstone was typically encountered as a low or low to medium strength rock.
- The highly to moderately or less weathered siltstone was typically encountered as a low to medium or medium strength rock.

The bedding of the weathered siltstone, whilst indistinct in parts, was observed to be relatively steep (between about 70 degrees to 90 degrees).

Unit 4 – Weathered dyke material

Igneous intrusions or dykes are commonly encountered within Silurian age siltstone materials. We note that dyke material (weathered to material with a consistency equivalent to a very stiff to hard clay) was identified by DP in Borehole DP04 at a depth of about 3.5 m to 8.3 m. We note that whilst not identified as dyke material, it is likely that the deeply weathered zones of extremely weathered material encountered in Boreholes FSG-BH01 and FSG-BH02 may represent dyke or dyke affected material.

Given the subsurface conditions encountered, we consider it likely that dyke material or dyke affected siltstone could be encountered during construction works. Where encountered, dyke or dyke affected materials are often weaker than the host rock and the orientation, depth and lateral extent can vary with depth and distance across a site.

Table 6-1 Approximate depth ranges of subsurface units and sub-units (FSG boreholes)

Description	Depth range of subsurface units and sub-units (m)								
	FSG-BH01 (RL 48.2 m)	**FSG-BH02 (RL 49.2 m)**	**FSG-BH03 (RL 49.9 m)**	**FSG-BH04 (RL 49.4 m)**	**FSG-BH05 (RL 49.4 m)**	**FSG-BH06 (RL 49.4 m)**	**FSG-BH07 (RL 52.4 m)**	**FSG-BH08 (RL 49.2 m)**	**FSG-BH09 (RL 49.2 m)**
Unit 1 – Fill	0 – 1.5	0 – 0.4	0 – 0.2	0 – 0.2	0 – 0.1	0 – 1.1	0 – 5.4	0 – 0.8	0 – 0.8
Unit 2 – Residual siltstone	1.5 – 4.6	0.4 – 3.8	0.2 – 2.6	0.2 – 0.8	0.1 – 1.3	-	5.4 – 6.3	0.8 – 2.0	0.8 – 2.1
Unit 3 – Melbourne Formation	**4.6 – 21.4**	**3.8 – 20.4**	**2.6 – 19.0**	**0.8 – 17.9**	**1.3 – 17.8**	**1.1 – 20.7**	**6.3 – 20.3**	**2.0 – 13.2**	**2.1 – 13.0**
Unit 3a – extremely weathered siltstone (inferred hard clay)	*7.3 – 9.2 11.9 – 15.8*	*3.8 – 5.4 6.8 – 11.0*	-	*0.8 – 1.7*	*4.3 – 5.2*	*1.1 – 1.7 3.7 – 7.2*	*6.3 – 6.6*	*2.0 – 3.5 5.1 – 6.4*	*2.1 – 5.2*
Unit 3b – extremely to highly weathered siltstone (with lenses of clay)	*4.6 – 7.3 9.2 – 10.0 11.5 – 11.9 15.8 – 17.0*	*5.4 – 6.8 15.0 – 18.3*	*2.6 – 6.2 6.8 – 8.0*	*1.7 – 5.4*	*5.2 – 6.5 7.0 – 8.4 9.5 – 11.0*	*1.7 – 2.1 7.2 – 9.1 14.7 – 17.3*	*10.3 – 10.7*	*3.5 – 5.1 6.4 – 7.0*	*5.2 – 6.0 12.4 – 13.0*
Unit 3c – highly weathered siltstone	*10.0 – 11.5 17.0 – 20.3*	*11.0 – 15.0*	*6.2 – 6.8 8.0 – 8.5*	*5.4 – 7.7*	*1.3 – 4.3 6.5 – 7.0 8.4 – 9.5 11.0 – 15.7*	*2.1 – 3.7 9.1 – 12.4 14.0 – 14.7 17.3 – 19.3*	*6.6 – 6.9 10.7 – 13.3*	*7.0 – 13.2*	*6.0 – 12.4*
Unit 3d – highly to moderately or less weathered siltstone	*20.3 – 21.4*	*18.3 – 20.4*	*8.5 – 19.0*	*7.7 – 17.9*	*15.7 – 17.8*	*12.4 – 14.0 19.3 – 20.7*	*6.9 – 10.3 13.3 – 20.3*	-	-
End of Borehole	**21.4 m**	**20.4 m**	**19.0 m**	**17.9 m**	**17.8 m**	**20.7 m**	**20.3 m**	**13.2 m**	**13.0 m**

Notes: Ground surface level at the borehole location relative to Australia Height Datum (AHD)

Table 6-2 Approximate depth ranges of subsurface units and sub-units (Douglas Partners boreholes)

Description	Depth range of subsurface units and sub-units (m)						
	DP02B (RL 52.4 m)	**DP04 (RL 49.3 m)**	**DP08 (RL 49.4 m)**	**DP12 (RL 49.4 m)**	**DP13 (RL 49.3 m)**	**DP16 (RL 49.4 m)**	**DP17 (RL 49.4 m)**
Unit 1 – Fill	0 – 6.4	0 – 0.5	0 – 6.5	0 – 0.2	0 – 0.5	0 – 0.3	0 – 0.3
Unit 2 – Residual siltstone	-		-	0.2 – 1.1	0.5 – 1.5	0.3 – 1.0	0.3 – 1.0
Unit 3 – Melbourne Formation	**6.4 – 13.5**	**0.5 – 17.1 m**	**6.5 – 20.0**	**1.1 – 7.5**	**1.5 – 8.0**	**1.0 – 8.0**	**1.0 – 9.0**
Unit 3a – extremely weathered siltstone (inferred hard clay)	*6.4 – 7.0 (8.4 – 12.1) #*	*0.5 – 2.5 13.0 – 13.3*	*6.5 – 8.0 8.5 – 9.5*	*1.1 – 1.5*	*1.5 – 2.0*	*1.0 – 2.0*	*1.0 – 1.5*
Unit 3b – extremely to highly weathered siltstone (with lenses of clay)	-	-	-	*1.5 – 4.5 6.4 – 7.5*	*2.0 – 4.8*	*2.0 – 2.6*	*6.5 – 9.0*
Unit 3c – highly weathered siltstone	*7.0 – 8.4 12.1 – 13.5*	*8.3 – 13.0 2.5 – 3.5*	*8.0 – 8.5 9.5 – 15.0*	*4.5 – 6.4*	*4.8 – 8.0*	*2.6 – 8.0*	*1.5 – 6.5*
Unit 3d – highly to moderately and less weathered siltstone	-	*13.3 – 17.1*	*15.0 – 20.0*	-	-	-	-
Unit 4 – dyke	-	3.5 – 8.3	-	-	-	-	-
End of Borehole	**13.5 m**	**17.1 m**	**20.0 m**	**7.5 m**	**8.0 m**	**8.0 m**	**9.0 m**

Notes: Ground surface level at the borehole location relative to Australia Height Datum (AHD)
 # No core recovery was obtained by DP over a depth of about 8.4 m to 12.1 m.

6.4 Groundwater

Groundwater was not observed over the depths that solid flight auger drilling was undertaken and it was not practical to make observations of groundwater during drilling below these depths due to the use of rotary polymer flush drilling techniques.

Groundwater monitoring wells were installed in five of the FSG boreholes to allow the measurement of the depth to groundwater.

Following installation, the wells were developed by removing water within the well via a hand bailer. This is to remove any remnant drilling fluid from the well and allow groundwater to flow into the well and the groundwater level to stabilise and reach its equilibrium level.

A summary of groundwater measurements is presented in Table 6-3

Table 6-3 Summary of groundwater measurements

Well ID	Screen depth	Date of measurement	Depth to groundwater (m BGL)	Groundwater level (m AHD)
FSG-BH01 (RL 48.2 m)	6.0 m to 10.0 m	20 December 2021	5.6	RL 42.6
FSG-BH03 (RL 49.9 m)	12.9 m to 18.9 m	20 December 2021	7.2	RL 42.7
FSG-BH05 (RL 49.4 m)	4.0 m to 10.0 m	20 December 2021	6.6	RL 42.9
FSG-BH07 (RL 52.4 m)	5.0 m to 11.0 m	3 February 2022	5.1	RL 47.4
FSG-BH09 (RL 49.2 m)	6.5 m to 12.5 m	22 December 2021	3.3	RL 45.9
DP02B (RL 52.3 m)	12.0 m to 13.5 m	20 December 2021	5.5	RL 46.8
DP08 (RL 49.2 m)	4.5 m to 7.5 m	20 December 2021	6.7	RL 42.5

Notes: BGL – below ground level

The groundwater level measured in the wells installed as part of our investigation varies between about RL 42.5 m (eastern side of the site) and RL 47.4 m (western side of the site).

Compass Environmental Pty Ltd (Compass – the environmental consultant for the project) has prepared a groundwater contour plan inferring the level to groundwater across the site based on the installed groundwater wells. This contour plan is presented at the end of our figures. We note that this contour plan shows the location of the site footprint (as opposed to the basement footprint which is stepped in along the eastern boundary of the site).

6.5 In situ pressuremeter testing

In situ pressuremeter tests were undertaken during the drilling of boreholes at the site. For each test the initial Youngs modulus has been assessed from the initial portion of the pressure expansion curve of the test. The results of these tests are summarised in Table 6-4 and presented graphically as Figure 3.

Pressuremeter tests were undertaken between depths of about 7 m and 18 m in the weathered siltstone unit. We have the calculated initial Youngs moduli values of the weathered siltstone to assist our assessment of the load-settlement performance of potential footing and basement retention alternatives.

Table 6-4 Summary of in situ pressuremeter testing

Borehole	Material	Test depth (m)	Test elevation (m AHD)	E_i (MPa)	P_{max} (MPa)
FSG-BH01	HW siltstone	11.0	37.2	120	3.8
FSG-BH02	HW siltstone	14.1	35.1	40	2.8
	XW to HW siltstone	17.5	31.7	30	2.8
FSG-BH03	HW to MW siltstone	14.9	35.0	370	12.2
	HW to MW siltstone	12.0	37.9	1000	12.5
FSG-BH04	HW to MW siltstone	12.0	37.4	830	6.1
	HW to MW siltstone	15.0	34.4	1400	8.5
FSG-BH05	HW siltstone	12.5	36.9	410	7.7
	HW siltstone	14.0	35.4	660	9.1
	HW to MW siltstone	17.0	32.4	620	11.4
FSG-BH06	HW to MW siltstone	13.0	36.4	390	8.3
	XW to HW siltstone	16.0	33.4	120	5.5
FSG-BH07	HW to MW siltstone	14.0	38.4	1040	5.2
	HW to MW siltstone	17.0	35.4	500	5.4
FSG-BH08	HW siltstone	7.5	42.0	370	10.3
FSG-BH09	HW siltstone	7.2	41.7	160	11.9

Notes: XW – extremely weathered, HW – highly weathered, MW – moderately weathered
E_i – initial Youngs modulus, P_{max} – maximum pressure applied during the test

In summary, two pressuremeter tests were undertaken in the extremely to highly weathered siltstone with initial Youngs moduli values of 30 MPa and 120 MPa recorded. We consider that the value of 30 MPa is likely to have been influenced by either localised defects or disturbance of the borehole during drilling and is unlikely to be representative of the elastic modulus of the rock mass for this weathering grade.

The remaining pressuremeter tests were undertaken in highly or less weathered rock with test results typically between about 370 MPa and 1040 MPa recorded (nine tests). Three tests recorded lower initial Youngs moduli values of between 120 MPa and 160 MPa and one test recorded a higher initial Youngs modulus value of 1400 MPa. A further test recorded a much lower initial Youngs modulus value of 40 MPa. We expect that this test has been influenced by either localised defects or disturbance of the borehole during drilling and is unlikely to be representative of the elastic modulus of the rock mass for this weathering grade.

6.6 Laboratory testing

The reports of laboratory testing completed on samples recovered during the geotechnical investigation are presented in Appendix C.

Saturated moisture content and UCS tests were undertaken on representative samples of weathered siltstone to supplement our visual and tactile assessment of the weathering grade and strength of the rock. The samples were saturated under partial vacuum for 24 hours prior to testing. The results of the laboratory testing are summarised in Table C-1 in Appendix C and the results of the saturated moisture content and UCS tests are presented graphically against elevation in Figures 4 and 5 respectively.

Also summarised in the table and presented in Figure 4 are the results of saturated moisture content tests completed by DP (relevant boreholes only).

The results of the UCS testing indicates that the weathered siltstone is typically of very low to low strength, with one result indicating the siltstone was high strength. However, we note that a significant amount of UCS test samples failed on pre-existing defects (i.e., steeply dipping bedding) and therefore we consider these test results are likely to represent a lower bound estimate of the intact rock strength.

The results of saturated moisture content testing typically indicates that the near surface siltstone was initially either extremely weathered (between 16% and 20%) and extremely to highly weathered (about 12% to 16%) reducing to highly to moderately weathered (between 8% to 10%) with increasing depth. The results of the saturated moisture content testing supports our assessment of the deeper weathering profile observed in several boreholes (i.e., FSG-BH01 and FSG-BH02).

7. Footings

7.1 Load information

Based on information provided by Webber we understand that the proposed development incorporates a common three-level basement with a lowest basement floor slab level of about RL 39.7 m (depth of between about 11 m and 14 m below the existing ground surface level) over much of the site. The eastern parts of Towers A and D extend beyond the extent of the proposed basement. Tower E is separate to the rest of the development and does not incorporate a basement structure.

Webber has provided information on design column working loads for the proposed development; this information is summarised below in Table 7-1.

Table 7-1 Summary of design column working loads

Tower	Approximate design column working loads
Tower A	10.5 MN
Tower B	16.5 MN
Tower C1	12.5 MN
Tower C2 and Tower D	5 MN
Tower D	5 MN
Tower E	4 MN to 5 MN
Podium structure	3 MN

7.2 Footing options

We consider the Unit 1 Fill or Unit 2 residual siltstone does not represent a satisfactory founding material to support the proposed development due to the magnitude of the design loads. Based on the design column working loads presented in Table 7-1 we consider that the various buildings will need to be supported on footings that found within the Unit 3 weathered siltstone (most likely highly or less weathered).

We note that the presence of former quarries has resulted in a significant thickness of uncontrolled fill being present over the eastern and western parts of the site. Based on the information presented in the DP reports, the uncontrolled fill associated with the former western quarry (backfilled with clays) may extend to a depth of up about 9 m to 9.5 m and within part of the footprint of the proposed buildings. Based on this depth of fill we expect weathered siltstone to be present at the anticipated bulk excavation level and founding level of spread footings (although this will need to be confirmed by the proposed supplementary investigation).

Information in the DP reports (primarily the contamination investigations) indicates that uncontrolled fill associated with backfilling of the former eastern quarry may extend to a depth of about 6.5 m within the footprint of the site. There is the potential that a thicker sequence of fill may be present in other areas not investigated (and the thickness of fill is expected to deepen significantly towards the east). We consider that a sequence of probe-holes may be needed to investigate and confirm the batter slope face of the former quarry if accurate site contours of the former quarry walls and floor are not available.

With respect to the former quarries (particularly the former eastern quarry which has been used as a landfill) we consider it will be important to obtain information on the backfilling (i.e., both the extent of any landfill waste and the capping layer) as well as the expected floor and batter slopes of the former quarries (to assess likely piling lengths). We note that the buried quarry walls may impact on any footings located close to the buried walls. An assessment of the potential impact of the former quarries on nearby footings will need to be undertaken on a case-by-case basis once information on the expected floor and batter slopes are available.

We also note that there a relatively deep weathering profile was encountered over parts of the site (north east corner), which we expect to impact on the adopted footing solution. This also presents some risk with respect to adopting shallow spread footings within the basement footprint. Table 7-2 (following page) presents a summary of information from the investigation (excluding Boreholes FSG-BH08 and FSG-BH09 which are located outside the basement footprint) relating to inferred founding levels for shallow spread footings (RL 38.2 m - assumed to be 1500 mm below the lowest basement slab floor level - 300 mm thick slab and 1200 mm deep footing).

The information presented in Table 7-2 indicates that predominantly highly or less weathered siltstone is likely to be encountered above the inferred footing founding level across a majority of the basement footprint. The exception to this is likely to be the eastern (and in particular north eastern) part of the site where extremely or extremely to highly weathered siltstone is inferred to extend well below the design bulk excavation level.

Table 7-2 Summary of information from boreholes below inferred footing founding level

Description	FSG-BH01	FSG-BH02	FSG-BH03	FSG-BH04	FSG-BH05	FSG-BH06	FSG-BH07
Ground surface level	RL 48.2 m	RL 49.2 m	RL 49.9 m	RL 49.4 m	RL 49.4 m	RL 49.4 m	RL 52.4 m
Inferred footing founding level	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m
Depth to inferred footing founding level	10.0 m	11.0 m	11.7 m	11.2 m	11.2 m	11.2 m	14.2 m
Summary of ground conditions from inferred footing excavation level to a depth of about 6 m to 7 m below	0 – 1.5 m: HW **1.5 – 1.9 m: XW-HW** **1.9 – 5.8 m: XW** **5.8 – 7.0 m: XW-HW**	0 – 4.0 m: HW **4.0 – 7.0 m: XW-HW** 7.0 m +: HW-MW	0 – 7.0 m: HW-MW	0 – 7.0 m: HW-MW	0 – 4.5 m: HW 4.5 – 5.6 m*: HW-MW	0 – 1.2 m: HW 1.2 – 2.8 m: HW-MW 2.8 – 3.5 m: HW **3.5 – 6.1 m: XW-HW** 6.1 – 7.0 m: HW	0 – 6.0 m: HW-MW
HW or less weathered siltstone surface	RL 31.2 m	RL 38.2 m	RL 41.9 m	RL 44.0 m	RL 38.4 m	RL 40.3 m	RL 45.8 m
Level of HW siltstone surface relative to footing excavation level	7 m below	0 m above	3.7 m above	5.8 m above	0.2 m above	2.1 m above	7.6 m above
Description	**DP02B**	**DP04**	**DP08**	**DP12**	**DP13**	**DP16**	**DP17**
Ground surface level	RL 52.4 m	RL 49.3 m	RL 49.4 m	RL 49.4 m	RL 49.3 m	RL 49.4 m	RL 49.4 m
Inferred footing founding level	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m	RL 38.2 m
Depth to inferred footing founding level	14.2 m	11.1 m	11.2 m	11.2 m	11.1 m	11.2 m	11.2 m
Summary of ground conditions from inferred footing excavation level to a depth of about 6 m to 7 m below	Borehole did not extend below footing founding level. HW siltstone encountered in base of borehole.	0 – 1.9 m: HW **1.9 – 2.2 m: XW** 2.2 – 6.0 m*: HW-MW	0 – 3.8 m: HW 2.8 – 7.0 m: HW-MW	Borehole did not extend below footing founding level. XW-HW siltstone encountered in base of borehole.	Borehole did not extend below footing founding level. HW siltstone encountered in base of borehole.	Borehole did not extend below footing founding level. HW siltstone encountered in base of borehole.	Borehole did not extend below footing founding level. XW-HW siltstone encountered in base of borehole.
HW or less weathered siltstone surface	RL 45.4 m	RL 41.3 m	RL 39.9 m	N/A	RL 44.6 m	RL 46.8 m	N/A
Level of HW siltstone surface relative to footing excavation level	7.2 m above	2.9 m above	1.7 m above	N/A	6.2 m above	8.2 m above	N/A

Notes: XW = extremely weathered, HW = highly weathered, N/A = not applicable
**Termination depth of borehole*

On the basis of our review of the subsurface conditions, our recommendations with respect to footing systems to support the proposed development are summarised as follows:

- In areas outside the basement footprint (Tower E and the eastern parts of Tower A, Tower D and podium structure) where landfill material (i.e., putrescible waste) is **not** present: we consider continuous flight auger (CFA) piles founding in the weathered siltstone (drilled to effective refusal in the weathered siltstone using a drilling rig of sufficient size) or bored piles socketing into the weathered siltstone may provide a suitable footing solution. The advantage of the CFA pile option is that the auger provides temporary support should any unstable layers be encountered (say deep uncontrolled fill). If bored piles are to be adopted, there are two main options to mitigate the risk posed by potentially unstable layers. The first is to use a polymer slurry to provide temporary support and the second is to install a temporary casing should unstable materials be encountered.
- In areas outside the basement footprint (eastern parts of Tower A, Tower D and podium structure) where landfill material (i.e., putrescible waste) **is** present (note this would need to be confirmed): we expect that displacement piles (i.e., driven precast concrete piles or possibly driven steel tubes) driven to effective refusal on the Unit 3 weathered siltstone would be a satisfactory option. Both bored and CFA piles would produce spoil during piling works and, in the case of a CFA pile, require pressurised concrete to be pumped into the pile hole (which may result in concrete loss into voids). Driving of the piles and in particular the potential for obstructions to be encountered will need to be carefully considered.
- For Tower A inside the basement footprint – the result of the investigation indicates that there is likely to be a relatively deep weathering profile across the eastern part of the basement footprint. At this stage, we consider it prudent, given the proposed design column loads, to assume a piled solution (either CFA or bored pile) will be required for Tower A. We note that there is likely to be the potential to adopt shallow spread footings over part of the Tower A footprint, however, further investigation and probing would be required to assess the extent of areas where the different footing options would be applicable.
- For the remaining towers and podium structures – we consider it reasonable to assume that the various structures could be supported on shallow spread footings founding in predominantly highly or less weathered siltstone. We note that this is subject to the supplementary investigation being completed over the western part of the site (currently inaccessible) and confirmation of subsurface conditions at the inferred founding level of spread footings in this area.

Information on the assessment and design of shallow spread footings and piles are presented in the following sections of this report.

It is unclear whether the former eastern quarry includes a liner between the backfill material and base of the quarry. If present, installation of piles in this area would damage the liner when penetrating through and the potential environmental implications of this should be considered.

7.3 Spread footings

Based on our visual assessment of the weathered siltstone core recovered from the boreholes and the results of both in situ and laboratory testing we consider there is the potential to support much of the proposed development on spread footings (and rafts beneath the building cores) founding on the weathered siltstone. However, we note that areas outside the proposed basement as well as Tower A will likely be required to be supported on piles.

We consider it reasonable at this stage to assume that predominantly highly or less weathered siltstone is likely to be encountered at footing founding level across a majority of the basement footprint. However, we note that in Borehole FSG-BH06 a 2.6 m thick layer of more deeply weathered siltstone was encountered beneath the potential founding level of spread footings. We have assessed the impact of this layer on settlements of spread footings in this area but also note that if extremely to highly weathered siltstone is encountered at design excavation level the footing would need to be deepened and potentially increased in size based on a reduced design allowable bearing pressure.

We recommend that pad and strip footings founding on predominantly highly or less weathered siltstone beneath the proposed lowest basement level. are proportioned based on a design allowable bearing pressure of 3000 kPa and 2500 kPa respectively.

A summary of calculated ranges of settlement for various design loads is presented in Table 7-3. Also presented in Table 7-3 is a calculated settlement for a 16.5 MN working load should the subsurface conditions in Borehole FSG-BH06 be present, i.e., a 2.6 m thick layer of extremely to highly weathered siltstone at about 3.5 m below the footing founding level.

The differential settlement between adjacent footings can be taken as half the settlement of an individual footing.

Table 7-3 Recommended design allowable bearing pressures for spread footings

Working load	Design allowable bearing pressure	Footing dimensions	Calculated range of settlements
5 MN	3000 kPa	1.3 m by 1.3 m	5 mm
10 MN	3000 kPa	1.9 m by 1.9 m	5 mm to 10 mm
16.5 MN	3000 kPa	2.4 m by 2.4 m	10 mm to 15 mm
16.5 MN#	3000 kPa	2.4 m by 2.4 m	20 mm to 25 mm

Notes: # assumes a layer of extremely to highly weathered siltstone at about 3.5 m below the footing founding level.

We recommend that all footings found a minimum of 1 m below the adjacent bulk excavation level and that all footing excavations, including raft/core excavations, are assessed by a geotechnical engineer from FSG prior to the placement of the reinforcing cage or any blinding concrete. The assessment of the footing excavation is to confirm that the exposed founding conditions are consistent with design assumptions and that a satisfactory level of base cleaning has been achieved. We have assumed that all debris, loose or softened material will be removed from the base of the footing excavation prior to the footing being poured. We consider the above recommendation to be critical with respect to footing performance.

We expect the spread footings will be constructed below the groundwater level at this site. Notwithstanding this, the rate of inflow is expected to be such that sumps and pumps should be satisfactory to control any inflow of groundwater into excavations for either spread footings or the building cores.

We note that raft footings beneath the core should not be proportioned based on the same design allowable bearing pressures as spread footings. The increase area of the building core would likely result in significant settlements. Notwithstanding this, it is our experience (for the height of the proposed buildings) that the average imposed pressure due to static loads (dead load plus live load) on a core raft is significantly less than the pressure imposed on a pad footing supporting a column. On this basis, we expect a raft founding on highly weathered siltstone (without the requirement for piles) is likely to be a satisfactory footing system for the building cores, we note this may not be the case for Tower A.

7.4 Design of piles

We expect the design and construction of piles will be performed by others (i.e., a piling contractor under a design and construct program). We recommend that piles are design in accordance with Australian Standard AS 2159 – 2009 Piing – design and installation.

AS 2159 – 2009 requires a pile to be designed such that the design geotechnical strength ($R_{d,g}$) is not less than the design action effect (E_d). The design geotechnical strength is calculated as the design ultimate geotechnical strength ($R_{d,ug}$) multiplied by a geotechnical strength reduction factor (ϕ_g).

The value of the geotechnical strength reduction factor is influenced by the following factors:

- ϕgb – basic geotechnical strength reduction factor, which is in turn influenced by an assessment of various individual risk factors relating to the site, design methodology and the method of pile installation.
- ϕtf – intrinsic test factor, based on the type of pile testing to be undertaken.
- K – testing benefit factor, dependent on the percentage of piles to be tested.

The assessment of individual risk ratings for risk factors as set out in Table 4.3.2 (A) of AS 2159 – 2009 will need to be undertaken by the designer of the piles. However, to assist in a preliminary assessment of piles for documentation purposes, we have assessed the average risk rating based on the following factors and assumptions:

- We have assumed the piles will either be CFA piles socketed into, and drilled to effective refusal in, highly or less weathered siltstone or bored piles socketed into highly or less weathered siltstone.
- The level and quality of the geotechnical investigation undertaken to date (including laboratory strength testing and in situ pressuremeter testing of potential founding strata).
- Our experience in the design of CFA piles drilled to refusal on weathered siltstone or bored piles socketing into weathered siltstone in Melbourne.
- A competent and experienced piling contractor installs the piles using best practice construction methods and to a high level of quality.
- The level of construction control is high with professional engineers reviewing CFA drilling and concrete supply records or the bored pile sockets logged by a professional engiener.
- The pile footing scheme is low redundancy with small groups of contiguous piles (cluster) or a single bored pile beneath each column. We note that irrespective of the number of CFA piles in a cluster we consider the footing should be treated as low redundancy. In the situation where an unknown geological feature, such as a dyke, is present beneath the base of a pile within a cluster of piles, we consider the cluster would behave in a similar manner to a larger diameter individual pile.

Based on our assessment of the individual risk factors and the assumptions listed above, we have assessed the average risk rating for the design of CFA or bored piles founding in the weathered siltstone to be between 1.5 and 2.0.

In Table 4.3.2 (C) of AS 2159 – 2009 an average risk rating of between 1.5 and 2.0 is defined as very low to risk. The resultant basic geotechnical strength reduction factor for bored piles socketing into weathered siltstone or CFA piles drilled to refusal in weathered siltstone is 0.61 for low redundancy systems.

The piling code allows an increase in the basic geotechnical strength reduction factor depending on the type and extent of pile testing to be undertaken. We consider dynamic load testing of individual CFA piles is an important factor in the design and construction of CFA piles and should be included in construction planning for this site. This testing could also be undertaken for bored piles, however, we note that this testing may not be practical for larger diameter bored piles.

The dynamic load testing (and subsequent CAPWAP analysis) of 3% of piles allows an increase in the basic geotechnical strength reduction factor to a geotechnical strength reduction factor of 0.69 for low redundancy piles.

AS 2159 requires integrity testing to be undertaken on piles where the adopted basic geotechnical strength reduction factor is greater than 0.4. Table 8.2.4b of AS 2159 - 2009 provides advice on the percentage of piles to be the subject of integrity testing and suggests integrity testing of between 5% to 25% of piles where the design loads are governed by the structural capacity of the pile shaft. We recommend pile integrity testing is undertaken on a reasonable proportion of the piles.

Depending on the thickness and composition of the potential landfill materials (former eastern quarry), negative friction (downdrag) may be induced due to ongoing consolidation / settlement of the landfill over time. However, further information on the extent and composition of the landfill will be required to assess this. We recommend any piling contractor consider the potential for downdrag in these areas.

7.5 CFA piles

The load carrying capacity of CFA piles at the site will depend on the depth of penetration that can be achieved into the siltstone. Rather than the drilling of CFA piles to designated depths of penetration or toe levels, we recommend that CFA piles are drilled to effective refusal (using a rig of sufficient size to penetrate into highly weathered siltstone - typically 1 m to 3 m depending on the nature of the siltstone) and design loads are confirmed by dynamic load testing and subsequent CAPWAP analysis.

As noted above, we recommend piles are drilled to achieve effective refusal. We strongly recommend against assessing a design socket length and drilling to obtain this inferred socket length based on rates of penetration, torque or some other measure. Our experience is that it is very difficult to assess socket length and performance using this approach and there is a potential for a significant reduction in the geotechnical design strength achieved and resultant increase in settlement where piles only socket a nominal distance into weathered siltstone rather than refusing in highly or less weather siltstone. In order to mitigate the potential for increased settlement at serviceability loading we recommend that all CFA piles are drilled to refusal with piles installed using equipment of sufficient size to achieve sufficient penetration and required load carrying capacity.

We consider that rather than assess a potential theoretical design value for such piles there is benefit in reviewing test data with respect to the pile resistances that have been mobilised on piles founding in similar materials.

Our experience is that dynamic testing of CFA piles drilled to refusal in weathered siltstone has demonstrated typical pile resistances summarised in Table 7-4. Also presented in the table are (for preliminary design purposes only) a range of indicative design geotechnical strength values and equivalent working loads for an individual pile.

The information presented in Table 7-4 should be used as a guide for initial sizing at this early stage. Design capacities will need to be verified by site specific dynamic load testing and CAPWAP analysis. Whilst higher loads may be achievable, they would need to be demonstrated by a rigorous testing program.

Table 7-4 CFA Piles – demonstrated pile resistances and recommended R_{dg} values

CFA pile diameter	Previously demonstrated resistance*	Recommended R_{dg} and equivalent working load	
		R_{dg}^	Indicative working load
600 mm	10.0 MN	6.0 MN	4.0 MN to 4.5 MN
750 mm	13.0 MN	9.5 MN	6.5 MN to 7.0 MN
900 mm	20.0 MN	14.0 MN	10 MN to 10.5 MN

Notes: ** these are approximate / typical values not absolute maximum values.*

^ these values are subject to confirmation by dynamic load testing and assessment of pile structural capacity. The conversion from R_{dg} to working load is based on a load factor of 1.32.

We consider the mobilised pile resistances described above should be used as a guide only and the design loads adopted for this development are confirmed by dynamic load testing and CAPWAP analysis. The number of piles to be tested will be dependent on the final design parameters adopted and the level of demonstratable experience of the piling contractor installing similar piles in similar ground conditions. However, we recommend between 3% and 5% of piles are subject to dynamic load testing (PDA) and CAPWAP analysis. We strongly recommend loads should not be assumed in design that cannot be satisfactorily demonstrated during dynamic testing and CAPWAP analysis.

For the various buildings and inferred design loads we would expect an individual or pair of closely spaced 600 mm to 900 mm diameter piles to be satisfactory. Based on the range of design loads previously discussed we consider an initial pile layout could comprise the following:

- 5 MN – single 750 mm diameter CFA pile.
- 10 MN – two 750 mm diameter CFA piles or one 900 mm diameter CFA pile.
- 16.5 MN – two 900 mm diameter CFA piles.

Settlement at the pile head will be made up of elastic shortening of the pile and settlement of the pile length embedded in the siltstone at the designated serviceability load. The latter is expected to be up less than 1% of the pile diameter. For multiple piles beneath a column, group effects will cause increased settlements. Group settlements can only be assessed after the final piling arrangement is known. The differential settlement between adjacent pile groups may be taken to be about half the settlement of a pile group. Notwithstanding these comments, our experience is that CFA piles drilled to refusal on highly or less weathered siltstone and designed in general accordance with the recommendations presented in this report are likely to perform satisfactorily in terms of load settlement under serviceability conditions.

We consider it is good practice to install CFA piles from a level of at least 1 m above the ground water level. This is to mitigate the risk of water pressures impacting the integrity of the concrete before it sets (i.e., washing out of the fines within the concrete). Any proposal to install CFA piles from below the groundwater level should address this risk.

We recommend the contractor provide a method statement for the construction of the piles including the installation of reinforcement and the depths to which reinforcement can be successfully installed, particularly for piles required to resist tension loads. We also recommend that piling contractors provide evidence of having successfully installed and tested piles in similar conditions and achieved load settlement results consistent with their proposed design.

CFA piles can be constructed as either individual piles within a group (say 2.5D spacing) or as a cluster of piles with a nominal clearance between piles. The actual spacing of piles is generally a construction issue.

It may be possible that obstructions such as concrete footings or other anthropogenic materials are encountered within the fill material, and it may be necessary to pre-drill to the base of the fill prior to installing CFA piles.

Our experience during CFA piling works indicates that the construction of CFA piles has the potential to induce lateral displacements due to the oversupply concrete pressure in weak materials such as uncontrolled fill. This should be considered during the installation of piles near open excavations such as pits or movement sensitive services. We recommend that the piling program allow a minimum time between the construction of adjacent piles to allow the concrete to set and not be affected by the installation of an adjacent pile. This is potentially issue for piles near / within the former quarries

7.6 Driven piles

Driven piles have been used to support developments over former landfill sites across Melbourne and the following will need to be considered with respect to the design and installation of driven piles within areas of the former quarries (landfill):

- The potential to encounter obstructions that lead to difficulties (or refusal) when installing piles. We expect that driven precast concrete piles would need to be fitted with a driving shoe to assist with penetrating potential obstructions within the landfill materials. Predrilling to remove obstructions could be adopted. An allowance should be made for some pile breakage during installation and hence redriving of additional piles.
- The aggressivity of the landfill materials to concrete or steel piles.
- Variability in the depth and batter slopes of the quarry pit. Driving piles onto a sloping surface can result in the toe of the piles ‘kicking out’ / sliding down batter slopes.
- The potential for noise and vibration associated with the installation of driven piles, particularly if parts of the shopping centre remain active.

Based on our experience, we expect typical design geotechnical strengths for 350 mm and 400 mm square pre-cast piles driven to a satisfactory set (or effective refusal) on the Unit 3 weathered siltstones of about

2400 kN and 2900 kN respectively, which corresponds to working loads of about 1800 kN and 2200 kN respectively.

Based on the magnitude of design column working loads for buildings outside the basement footprint (in the order of about 5 MN to 10.5 MN), we expect groups of three to six piles are likely to be required beneath each column depending on the magnitude of the design load and the size of the pile adopted.

Settlement of a driven pre-cast concrete pile will be made up of both elastic shortening of the pile shaft and settlement at the base. We would expect that a pile driven to refusal on the Unit 3 weathered siltstone and supporting working loads of between about 1800 kN and 2200 kN would be less than about 10 mm. The settlement of a group of multiple piles will be greater than an individual pile due to group effects and can only be assessed when the final piling arrangement is available. We note that the settlement behaviour of driven pre-cast piles will need to be confirmed through pile driving records and the results of dynamic testing of selected representative piles (refer to Section 7.9 for further information).

If driven piles are adopted, we consider it prudent to install non-contract test piles initially to confirm that piles can be driven to the required founding depth through the landfill materials (if present) and perform satisfactorily with respect to load / settlement performance. We also recommend that piling contractors provide evidence of having successfully installed and tested piles in similar conditions and achieved load settlement results consistent with their proposed design.

7.7 Bored piles

We expect bored piles are potential method of installing soldier piles for the basement retention system. They could also potentially be adopted to support parts of some buildings. The following section provides information on the design and construction of bored soldier piles, including maximum recommended allowable unit stresses for bored piles.

Bored piles socketing into the weathered siltstone will derive their geotechnical design strength from a combination of shaft friction and base resistance. We consider that assessment of indicative pile sizes and lengths can be based on the unit stresses provided in Table 7-5. We note for piles to adopt these stresses, a minimum pile socket of two times the pile diameter and a total pile length of at least six times the pile diameter is required.

We recommend all load bearing pile sockets commence in at least extremely to highly weathered siltstone. We recommend the load carrying socket is assumed to start at 0.5 m below the adjacent maximum excavation level and that shaft friction over the rear of the soldier pile over the depth of the basement excavation is ignored in assessing the required socket length of the piles.

Table 7-5 Bored pile ultimate shaft and end bearing resistance values

Material	Ultimate shaft friction	Ultimate base stress
Extremely to highly weathered siltstone	300 kPa	5000 kPa
Highly weathered siltstone	550 kPa	10 000 kPa
Highly to moderately or less weathered siltstone	750 kPa	20 000 kPa

The values presented in Table 7-5 are ultimate values, and hence, should be used to assess the ultimate design geotechnical strength ($R_{d,ug}$) of the piles which is then required to be factored using the adopted geotechnical strength reduction factor (φ_g) for comparison with the design action effect for the pile (E_d). We recommend that the socket is proportioned such that at least 60% of the design action effect is resisted in shaft friction.

The stability of pile holes drilled in fill will need to be considered and casing may be required to support bored pile excavations through some fill materials.

We expect groundwater to be encountered over the depth that the bored soldier piles are drilled. Whilst we expect the rate of inflows to be relatively minor, we note that there is potential for significant variations in the rates of inflow. Should much higher than expected inflows be encountered and dewatering is not practical, concrete for the piles may need to be placed via a tremie pipe.

We expect that the piles should be able to be drilled using predominantly an auger and if required a drilling bucket.

There is always potential to encounter dyke materials during construction of piles in weathered siltstone. If dyke materials are encountered this would likely impact the length and founding level of the piles. Pre-drilling or localised excavation may be required for piles to penetrate through any fill material or concrete footings as part of the existing structure.

We recommend that the sockets of all load bearing piles are roughened and that the bases of all piles are cleaned such that negligible debris remains on the bases of the piles prior to the pile being cast. We also recommend that the socket materials of load bearing piles are observed by a geotechnical engineer during drilling to confirm that they are consistent with design assumptions.

7.8 Tension loads

Piles socketed into the weathered siltstone can be used to resist tension loads, assuming the structural design of the pile allows tension loads to be transferred to the pile socket. We expect this will require full depth reinforcement cages, or as a minimum, placement of a full depth central bar for CFA piles.

The resistance of an individual bored pile to tension loads can be taken as the lesser of the following:

- The weight of soil and rock in a 45° cone through the weathered rock from the base of the pile to the surface of the highly weathered rock, and then a vertical cylinder from the surface of the weathered rock to the surface. A reduction factor of 0.9 should be applied to the weight of the rock and soil in the cone described above.
- Shaft friction over the length of pile embedded in weathered siltstone (rock socket) and 80% of the shaft friction of the pile in compression in soils above the rock with the total shaft friction multiplied by the appropriate geotechnical strength reduction factor.

7.9 Testing of piles

For piles tested dynamically using PDA and associated CAPWAP signal-matching analysis, the acceptance criteria set out in Table 8.5.2 of AS 2159-2009 should be adopted unless other project specific criteria are noted.

For driven piles, once the required set and temporary compression for the nominated capacity have been established by PDA and associated CAPWAP signal-matching analysis means, pile driving records alone will usually provide sufficient confirmation of the achieved capacity. However, further checks using PDA equipment and CAPWAP analyses are recommended.

During dynamic testing it is important that the permanent deflection (set) generated by each blow delivered to the pile under test is accurately recorded. Test blows should be arranged so that the serviceability test load is mobilised early in the testing. Later blows with increased energy can then be used to check acceptance criteria for the ultimate pile capacity. The total displacement with respect to reported CAPWAP resistance should consider the cumulative set prior to the CAPWAP blow plus the recorded DMX for the CAPWAP blow.

Where CFA piles are installed in closely spaced groups or clusters it is only practical to undertake testing of an individual pile. The assessment of the results of any pile testing should take into account group effects, if the pile is to form part of a cluster. We recommend any design submission from a piling contractor clearly states how the results of testing of an individual pile will be applied to a cluster of piles.

For testing of CFA piles to be considered representative of all piles installed on a site, the method of pile installation must be consistent across the site, especially with regards to achieving refusal in the weathered siltstone.

7.10 Working platform - piling works

Our recent experience with large piling rigs indicates that the maximum pressure applied beneath the tracks during piling works can be around 350 kPa. We consider that, dependent on the construction staging and level of the working platform, that the exposed subgrade materials are likely to comprise fill materials, residual siltstone, or weathered siltstone/sandstone. Hence, given the variable subsurface conditions, an assessment of working platform requirements is beyond the scope of this report but can be undertaken once piling rig details and construction methodologies are available. We expect the re-use of site-won granular working platform materials, if required, could be considered in this assessment.

8. Basement design and construction

8.1 General considerations

We understand that the proposed development includes a three-level basement. We understand that the bulk excavation level (about RL 39.2 m) is up to about 10 m to 13 m below the existing ground surface level.

Based on the subsurface conditions encountered during the preliminary investigation, we expect that the basement excavation will encounter a layer of fill overlying predominately very stiff to hard residual siltstone overlying variably weathered siltstone of the Melbourne formation.

The groundwater was measured between 3.3 m and 7.1 m below the existing ground surface. Based on these observations the proposed basement will extend below the groundwater level at the site. There is now a very strong reluctance from statutory authorities to accept any intercepted water in the permanent condition from basements into either local stormwater or sewer systems and we note that there may also be environmental considerations associated with the previous backfilling of the former quarries. On this basis we expect that the basement will need to be designed as a sealed structure in the permanent condition.

We expect that a soldier pile wall (typically restrained by post tensioned anchors in the temporary condition) with shotcrete infill panels will provide a satisfactory method of temporary basement retaining wall construction. We note that it may be relatively problematic to install anchors through the deep fill in the eastern and western parts of the site. This may require the anchors to be steeply inclined (particularly the upper rows) and depending on the base of the quarry may be impractical to install. If anchors cannot be adopted then we expect internal propping will need to be considered (we consider it unlikely that a retaining wall constructed using a cantilevered method will be suitable given the materials being retained and the high likelihood of significant and hence excessive movements of the wall when excavating for basement construction).

The walls of the basement levels that are partially, or completely, below the groundwater level will need to be designed to resist the hydrostatic pressure. We anticipate that this will include a highly water-resistant structural wall (with a waterproofing membrane) cast immediately in front of the soldier pile and shotcrete infill panel wall that will form the temporary retaining wall.

The following section presents design earth pressures for simplified design of retaining walls in the absence of analysis / soil structure interaction modelling.

8.2 Design earth pressures

We expect in the temporary condition that any retaining walls constructed are likely to comprise a drained wall system (that is positive drainage will be located behind the walls – this is typically provided as a series of strip drains placed behind the concrete infill panels that discharge into the lowest basement level). In this case, we recommend the following wall design pressures for a drained wall system that is propped or anchored in the temporary condition:

- The zone of influence of the proposed excavation is taken as a zone lying above a plane sloping at 40 degrees above the horizontal, from the base of the proposed excavation.
- For areas where adjacent buildings and movement sensitive services are not located within the zone of influence (where H is the total retained height in metres) – a uniform pressure of 4H kPa.
- For areas where adjacent buildings and movement sensitive services are located within the zone of influence - a uniform pressure of 6H kPa.

In the permanent condition, we consider the above wall design pressures can also be adopted for the section of a sealed basement above the design groundwater level. For sections of a sealed basement below the design groundwater level we recommend the following wall design pressures are adopted:

- The zone of influence is as previously outlined.
- For areas where adjacent buildings and movement sensitive services are not located within the zone of influence (where H is the total retained height in metres) – the greater of a uniform pressure of 4H kPa and a uniform pressure of 2H kPa plus hydrostatic pressures.
- For areas where adjacent buildings and movement sensitive services are located within the zone of influence – the greater of a uniform pressure of 6H kPa and a uniform pressure of 3H kPa plus hydrostatic pressures.

We note that for the sealed system there will be a transitional zone at the design groundwater level where interpolation of the above pressures will be required to facilitate design. We note that if drainage is not provided the retaining wall design would need to allow for a potential build-up of hydrostatic pressures as described above.

The effect of surcharge pressures should be added to the lateral earth pressures outlined above. Where adjacent building footings or movement sensitive services are not within the zone of influence, an earth pressure coefficient of 0.4 should be adopted. Where adjacent building footings and/or movement sensitive services are within the zone of influence, an earth pressure coefficient of 0.6 should be adopted.

The main retaining elements (anchored soldier piles) can be designed for the pressures recommended above. The infill panels between soldier piles may be designed for a lower pressure due to arching of the soil / rock between individual soldier piles. We recommend infill panels are designed for 50% of the previously recommended pressures.

Should the design pressures presented above be problematic with respect to structural design (e.g., requires a larger pile diameter) we recommend two-dimensional analysis / modelling using PLAXIS 2D to provide a less conservative assessment of design actions in the piles.

8.3 Lateral displacements, instrumentation, and monitoring

Based on our experience with deep basements and the proposed method of retention (as previously described) we consider that it is prudent to allow for lateral movements of about 0.1% (and possibly 0.15%) of the retained height.

Given the proposed depth of excavation for the basement is up to about 13 m we consider lateral movements of around 15 mm to 20 mm could be observed. This would not necessarily be cause for concern (subject to assessment of sensitivity of and impacts on nearby infrastructure).

We recommend that the appointed builder develop an instrumentation and monitoring plan to assess the performance of the wall in terms of lateral deflections during the construction of the basement. We consider instrumentation as a minimum should include survey monitoring of targets (at say, grid locations)

located on the capping beam, on piles at about the mid-height of the excavation and, where applicable, on adjacent buildings. Monitoring should be performed at regular time intervals and progressively during basement excavation.

FSG has experience in the development of instrumentation and monitoring plans for deep basements, particularly where movement sensitive infrastructure is located in the proximity of basement retaining walls. If required, we can liaise with the appointed builder with respect to a prudent instrumentation and monitoring plan.

8.4 Ground anchors and rock bolts

We recommend the following as a general guide to assessing requirements for ground anchors.

- Ground anchors are to be installed under a design and construct contract with contractors required to achieve stated loads via proving tests.
- The fixed or bonded length of anchors should be no less than 3 m and no greater than 9 m and the free length of any anchors needs to consider the nature of the materials to be retained.
- Excavation does not proceed more than 0.5 m below the level of any post-tensioned anchors prior to their installation and tensioning.
- All post-tensioned anchors are secondary grouted and that the minimum free length is maintained to allow post tensioning of the anchors. This may require some grout from the initial grouting stage to be washed out prior to tensioning and then a secondary grouting stage. We consider sheathed anchors grouted over the full length are not satisfactory for post tensioning.

We expect that anchors that extend through fill may experience some instability and require casing for wall support during installation. Alternatively, anchors that are installed using a proprietary system that facilitates drilling, anchor installation and grouting in a single operation without the need to use caing could be adopted.

Based on information obtained during the geotechnical investigation and assuming that all ground anchors will be drilled using air flush drilling techniques for preliminary anchor assessment we consider the allowable grout / ground unit stresses presented in Table 8-1 (following page) should be achievable.

Irrespective of the design parameters adopted, we recommend that the anchors or bolts are proof loaded to confirm that the design assumptions so that the stated loads are achieved. We recommend reference to AS 4678 Earth Retaining Structures with respect to the requirements for load testing of reinforcements. As a minimum, we would expect all anchors to be proof loaded to 125% of the design working load and held for 15 minutes with records of the applied load and anchor elongation made at specific stages of the proof loading.

Table 8-1 Summary of allowable grout / ground unit stresses for anchor design

Subsurface material	Design allowable grout / ground unit stress
Residual Siltstone / extremely weathered siltstone	100 kPa
Highly weathered siltstone	200 kPa
Highly to moderately or less weathered siltstone	250 – 400 kPa

8.5 Core / lift overrun excavation

It is unclear as to the depth of excavation for the various building core / lift overrun structures. However, we expect that any core / lift overrun structures may extend below the proposed bulk excavation level potentially by about 3 m to 4 m (details to be confirmed by the project structural engineer).

We note that retention of core / lift overrun excavations is typically the responsibility of the builder and comes under temporary works. The method of retention adopted for the core / lift overrun structures will be dependent on a number of factors, including:

- The proposed depth of localised excavation.
- The location of the core / lift overrun structures and surrounding space available.
- The level of dewatering undertaken.
- The material present over the retained height of the core / lift overrun structures, including unfavourable bedding and the potential presence of dykes or fault affected siltstone.

The results of the investigation indicate that predominantly highly or less weathered siltstone is likely to be present over the retained height of the core / lift overrun structures. The weathered siltstone is typically steeply bedded and we note that fault and dyke affected siltstone was encountered in a number of boreholes.

If sufficient space is available, we consider that temporary batter slopes (constructed either as a series of benches of a constant slope) could be adopted. The temporary batter slopes that could be adopted will need to be undertaken on a case-by-case basis by a suitably qualified geotechnical engineer during excavation. Notwithstanding this, we typically expect that temporary batter slopes for the various core / lift overrun structures in the weathered siltstone are likely to be in the order of about 0.5H:1V to 1H:1V depending on the factors previously discussed.

Alternatively, we consider that excavations for the core / lift overrun structures could be supported in the temporary condition by say a row of cantilevered soldier piles (where unfavourable bedding conditions are present) or potentially a pattern of passive rock bolts and shotcrete facing (where favourable bedding conditions are present). If displacements of the cantilever wall are too high, a single row of post tensioned anchors could be used to reduce displacements at the top of the wall.

We can provide further assessment and advice following engagement of a builder and finalisation of design works. We recommend that a geotechnical engineer from FSG visits the site regularly during construction and observe the basement excavation at various levels in the weathered siltstone to assess the orientation of bedding, potential presence of dykes or fault affected siltstone and review that the adopted wall support approach remains applicable or whether changes to the requirements for the temporary retention of the cores / lift overrun structures are required.

8.6 Groundwater management

We expect the basement excavation will be drained in the temporary condition with inflows collected in sumps and pumped off-site under a temporary trade waste agreement. Any application for disposal of groundwater off-site will require information on the groundwater quality from the sampling and laboratory testing of groundwater wells. An assessment of likely ranges of expected groundwater inflows may also be required. It is our experience that temporary dewatering and drainage measures, such as pumps and sumps are typically able to accommodate inflows for basement structures extending several metres below the groundwater level in weathered siltstone.

To facilitate the construction of the basement floor slab, temporary dewatering of the site will be required. One approach is to use a temporary drainage layer beneath a blinding layer and then basement floor slab so as to allow groundwater to be drained until the basement floor slab is constructed, sealed, and attained satisfactory strength to resist the hydrostatic pressures.

In the permanent condition we anticipate the basement will be sealed with the walls of any basement levels either partly or completely below the design groundwater level designed to resist hydrostatic pressures.

We note that the depth to groundwater varies across the site. For preliminary purposes we recommend that the design groundwater level adopted can be assumed to be a minimum of 1 m above the design contour plan levels indicated by Compass. We note that there may be other council or regulatory authority requirements that may require a higher design groundwater level to be adopted.

We recommend the hydrostatic uplift pressure (kPa) be taken as ten times the difference (m) between the level of the underside of the slab / raft and the recommended design groundwater level. We note that in the centre of the site where there is a transitional zone in the design groundwater level, the interpolation of the above pressures will be required to facilitate design.

For basement levels above the groundwater level, it is common to provide strip drains that discharge onto the basement floor (volume of water is negligible and flows intermittent to completely absent) as a means of mitigating against the build-up of hydrostatic pressures due to climatic events or a leaking service etc. We consider this water to be stormwater (or potable water) and therefore should be able to be discharged to stormwater via the site legal point of discharge (or the anticipated minor amount of water may evaporate in the internal spoon drains), subject to council approval. We consider it may be worth discussing this approach with the local council and seeking approval given any drainage would remain above the groundwater level. We also note that this approach will require comment from the project environmental consultant as a different approach may be required over areas within or near the former backfill quarries due to environmental considerations.

For the basement levels below the design groundwater level, a waterproof membrane and structural wall constructed in front of the soldier pile wall will be required. It is typical to have infill panels near the front face of the piles to facilitate placement of the waterproof membrane

8.7 Excavation conditions

We expect excavation of any surficial fill, residual siltstone (soils) and Melbourne Formation siltstone will be able to be readily undertaken with conventional excavation equipment. Remnant concrete slabs and footings are likely to require the use of a hydraulic breaker.

Excavation conditions within highly or less weathered siltstone is typically dependent on the frequency of discontinuities, such as jointing and fractures within the rock mass. Based on information presented in the engineering borehole reports we consider the siltstone is likely to be relatively highly fractured and hence, is likely to be excavated using a large excavator assisted by ripping with a single tyne.

Plate 8-1 (following page) is provided to give an indication of the potential techniques that are likely to be required to undertake basement excavation. The indicative excavation envelope shown in Plate 8-1 is based on the following parameters:

- Rock quality designation (RQD) – range 0% to 90%
- UCS and point load strength index test results – One UCS of 17 MPa but typically less than 6 MPa.
- Defect spacing – typically 30 mm to 100 mm but up to 300 mm

Plate 8-1 indicates that basement excavation should be able to be undertaken by a combination of digging (conventional excavation using large excavators) and ripping of the rock mass using a large tyne.

We recommend that excavation contractors make their own assessment as to requirements to excavate the weathered siltstone at the site.

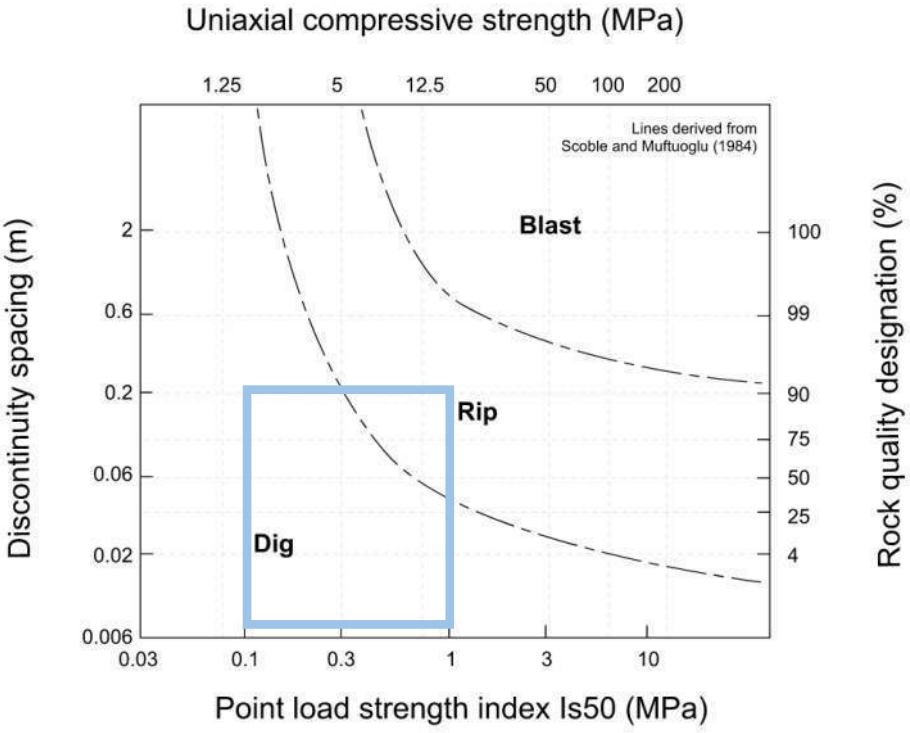


Plate 8-1 Indicative rock excavatability chart of weathered rock in basement excavation – blue envelope (after Walton and Wang, 1993)

8.8 Basement floor slab – subgrade preparation procedures

Based on the results of the geotechnical investigation we expect the subgrade beneath the basement floor and the core / lift overrun pits slab to comprise predominantly weathered siltstone / sandstone with the possibility of clay exposures.

The weathered siltstone is considered satisfactory as a subgrade material and the only preparation required would be excavation to design level and trimming / removal of any loose / soft debris followed by a visual assessment to confirm the exposed subgrade is consistent with design assumptions.

9. Earthquake classification

The methods of assessing earthquake risk classification and consequential design implications are outlined in Australia Standards AS 1170.4 – 2007, 'Structural design actions – Part 4: Earthquake actions in Australia'. The standard uses a number of factors in assessing an earthquake design category for a particular structure at a given site.

The stratigraphy used to assess earthquake risk classification is taken from the ground surface unless there is a basement structure that is isolated (batter slopes and voids behind the walls) from the adjacent ground.

Based on the results of the geotechnical investigation the thickness of the fill and natural soil overlying weathered rock is greater than 3 m. On this basis we consider that a site Sub-Soil Class of C_e – shallow soil site should be adopted.

The hazard factor (Z) depends on the geographic location of the site. The hazard factor (Z) for Melbourne as outlined in AS 1170.4 – 2007 is 0.08.

10. Additional investigation

Given the complexities associated with the ground conditions, we recommend the following additional investigation:

- A supplementary stage of investigation over the western half of the site, as outlined in our proposal, will need to be completed following demolition and the recommendations presented in this report updated. We consider this stage of investigation to be important to confirm the extent and base of the western quarry, and in particular confirm that the base of the quarry is above the basement founding level.
- Information in the DP reports (primarily the contamination investigations) indicates that uncontrolled fill associated with backfilling of the eastern quarry may extend to a depth of about 6.5 m within the footprint of the site, although we note that thicker sequences of fill may be present in other areas not investigated (and the thickness of fill is expected to deepen significantly to the east). We consider that a sequence of probe-holes may be needed to delineate the surface of the quarry batter slope face if accurate site contours of the quarry surface are not available to assist with assessing likely founding levels for piles in this area and also the potential presence of landfill (i.e., putrescible waste) material.
- We note that there is likely to be the potential to adopt shallow spread footings over part of the Tower A footprint within the basement, however, this would be subject to further probing to assess the extent of any weathered areas.

11. Important information

Your attention is drawn to the document – Important information about your FSG report which is included in Appendix D of this report. The statements presented in this document are intended to advise you of what your realistic expectations of this report should be. The document is not to reduce the level of responsibility accepted by FSG, but rather ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.

We would be pleased to answer any questions the reader may have regarding this important information

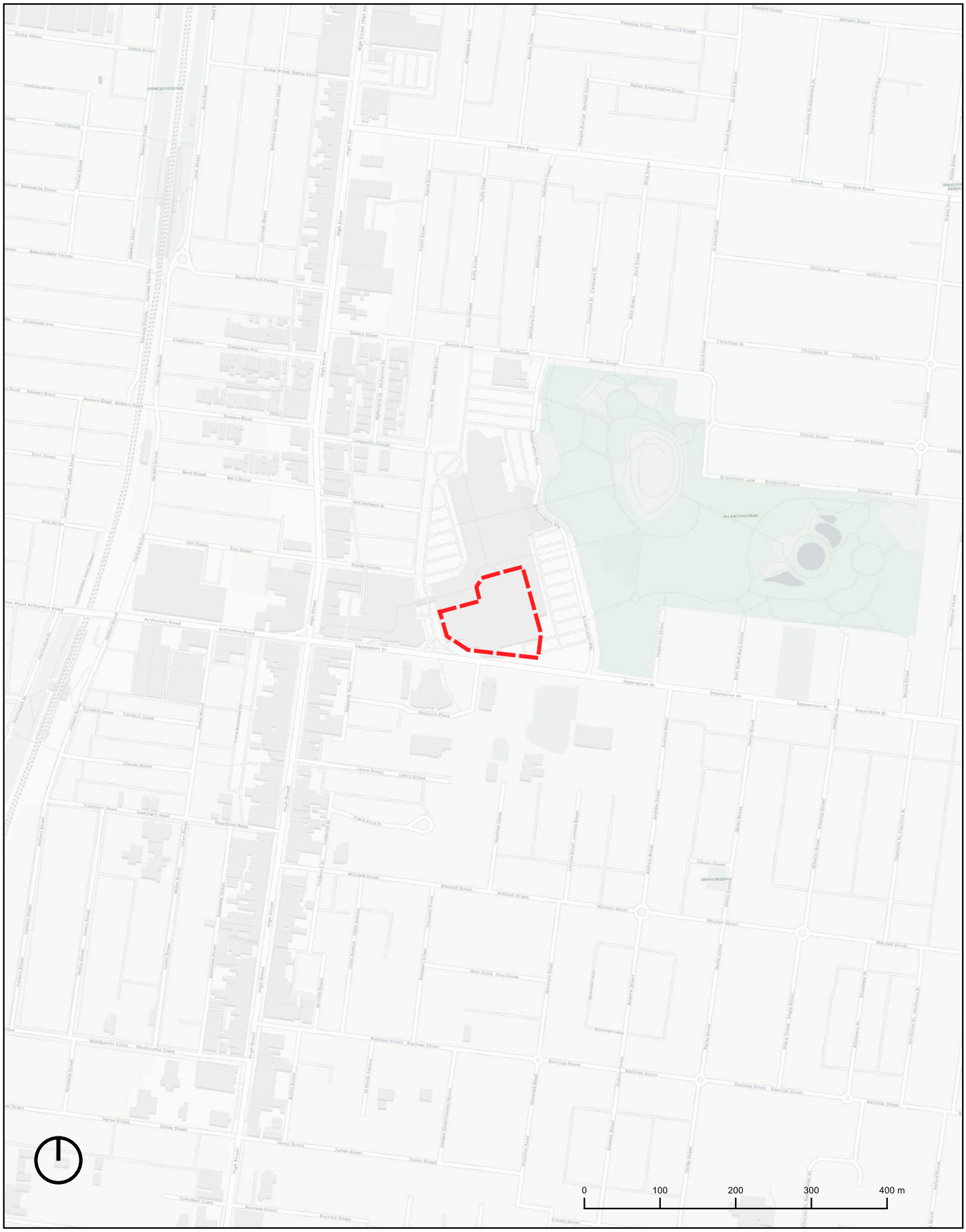
FSG Geotechnics & Foundations





Alex Henderson
Senior Geotechnical Engineer

Jim Finlayson
Director



TITLE

Figure 1 - Site locality plan

NOTES

CartoDB, under CC BY 3.0. Data by OpenStreetMap, under ODbL.

CLIENT

Northcote Devco Pty Ltd

PROJECT

Northcote Plaza, 25 Separation Street, Northcote

DATE

1/3/2022

DRAWN

ALH

DOCUMENT REFERENCE

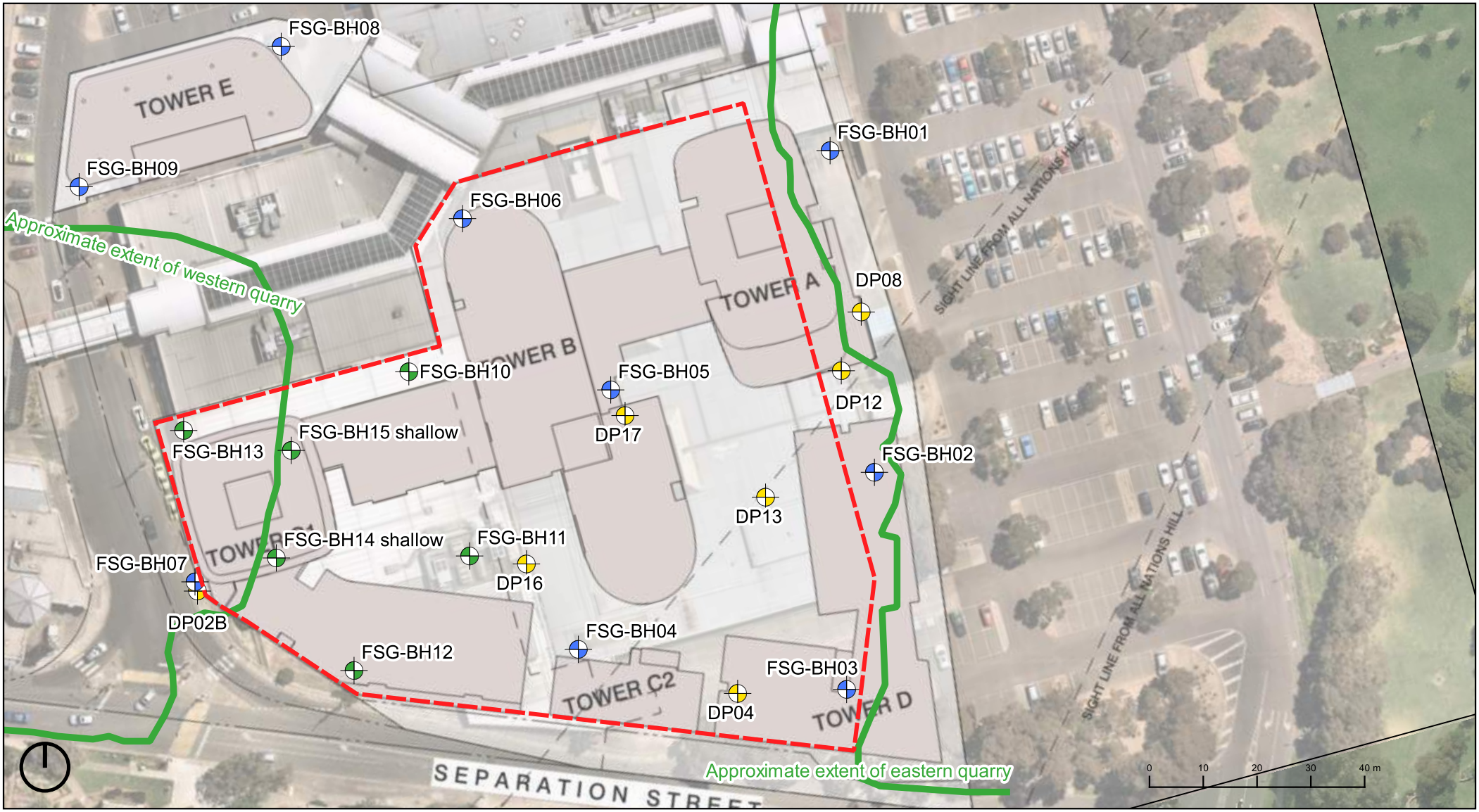
4067

APPROVED

JEF

FSG GEOTECHNICS +FOUNDATIONS

Figure 1 - Site locality plan



TITLE

Borehole Location Plan

LEGEND

- Proposed basement extent
- Proposed post-demolition investigation boreholes
- Approx. extent of eastern quarry
- FSG boreholes
- Douglas Partners historical boreholes
- Approx. extent of western quarry

NOTES

CartoDB, under CC BY 3.0. Data by OpenStreetMap, under ODbL.
Approximate extent of quarries based on Douglas Partners Pty Ltd assessment as outlined in Report Ref. 95409.01

CLIENT: Northcote Devco Pty Ltd

PROJECT: Northcote Plaza
25 Separation Street, Northcote

DATE: 1/3/2022

DRAWN: LJL

DOCUMENT REFERENCE: Figure 2

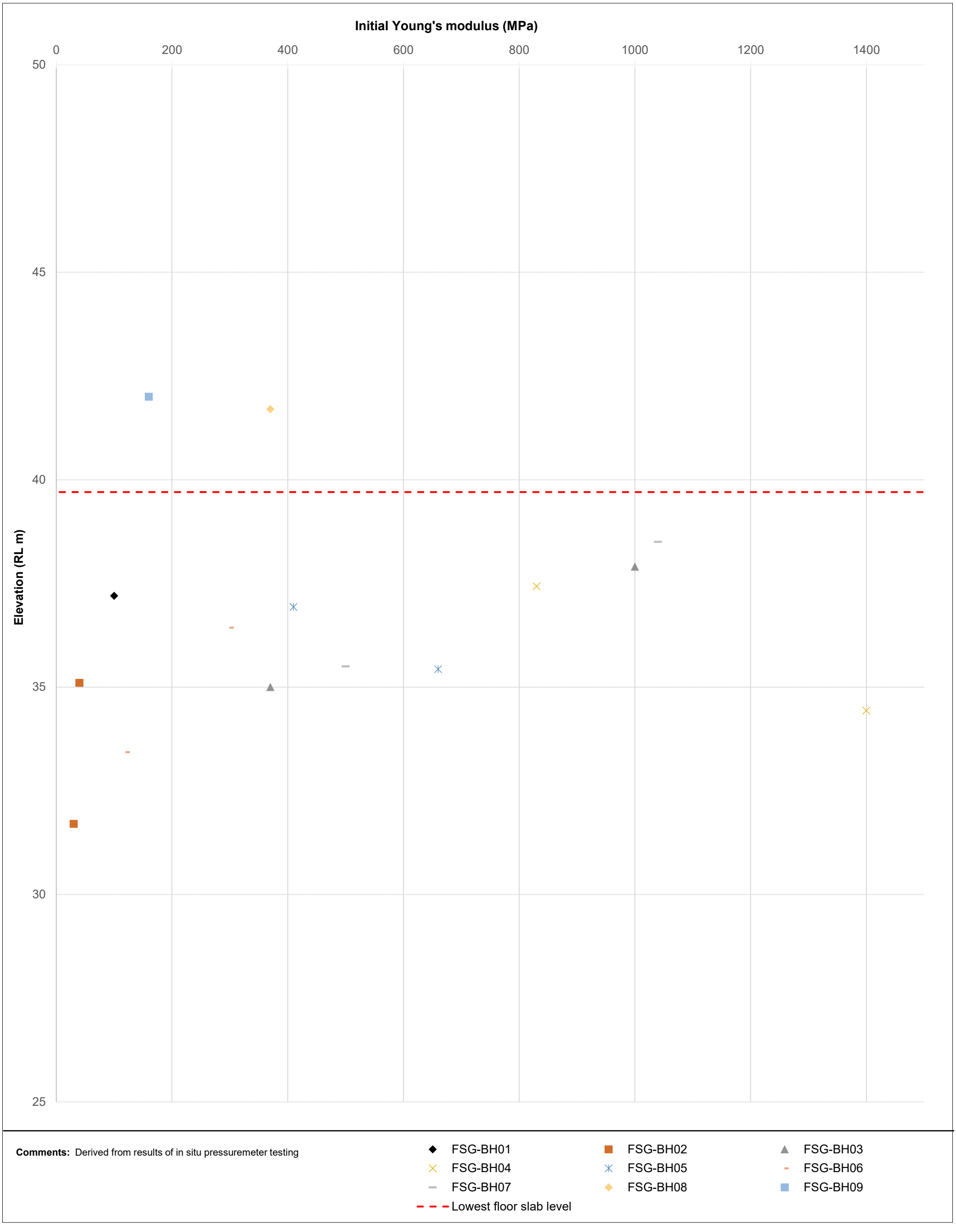
APPROVED: ALH

FSG GEOTECHNICS +FOUNDATIONS

3.14.15-P1 | Alex Henderson | 71.7.40/7 - Separation Street

Figure 3
Initial Youngs Modulus vs elevation

Date:	02/03/2022	**Project No.:**	4067	**Client:**	Northcote DevCo Pty Ltd
Prepared by:	SYL	**Document:**	02	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



Comments: Derived from results of in situ pressuremeter testing

Figure 4
Saturated moisture content of siltstone vs elevation

Date:	02/03/2022	**Project No.:**	4067	**Client:**	Northcote DevCo Pty Ltd
Prepared by:	SYL	**Document:**	02	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote

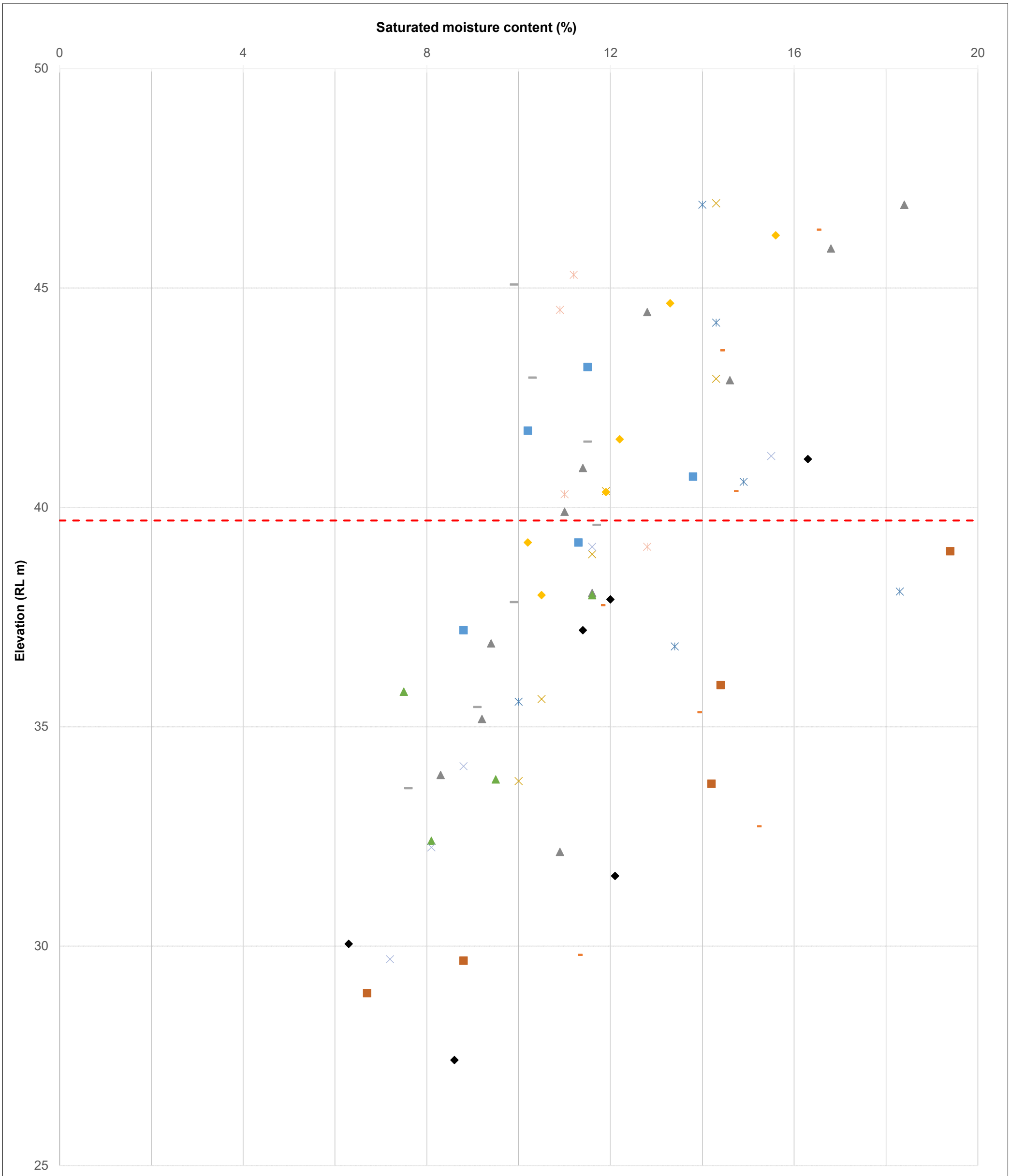
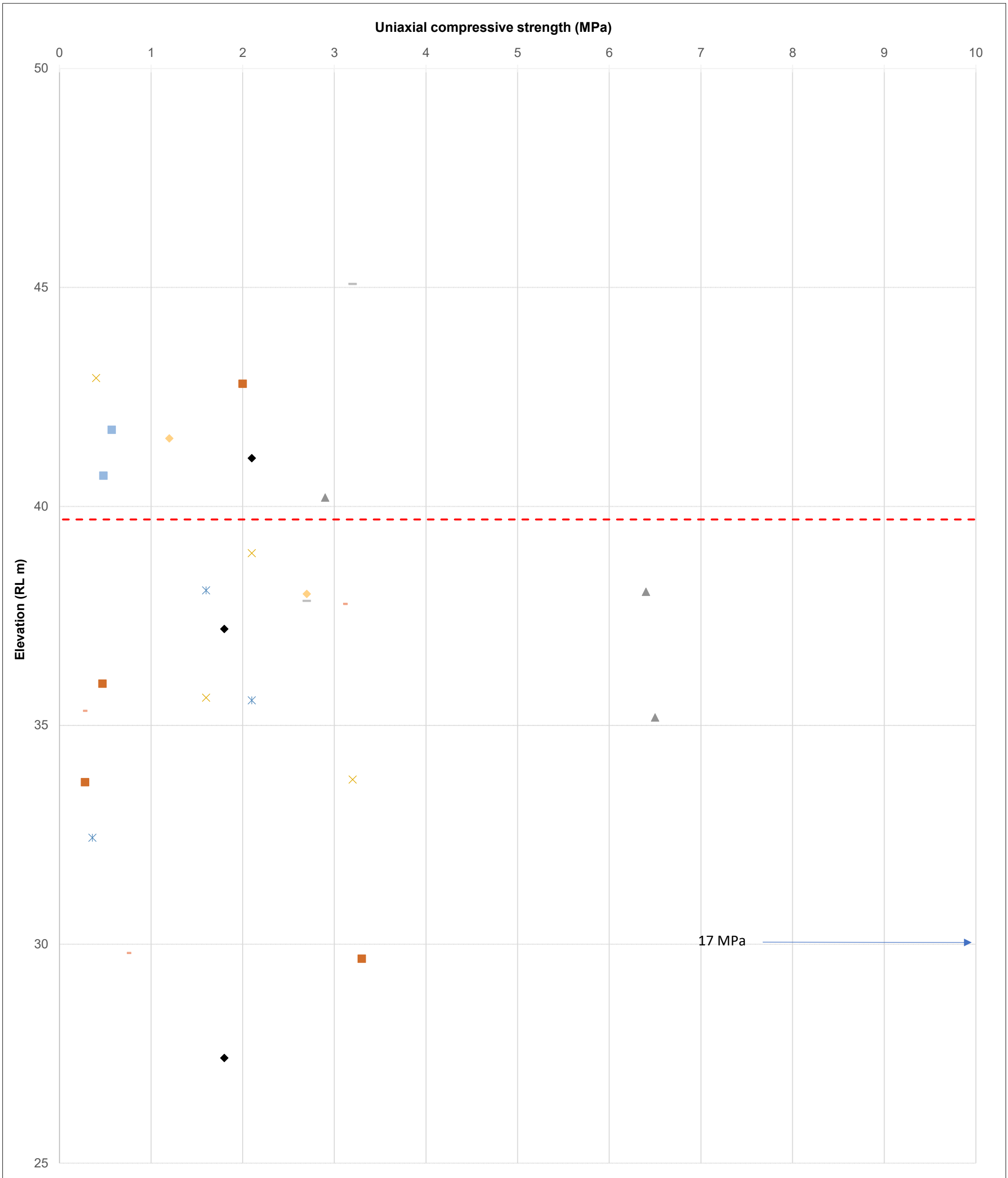


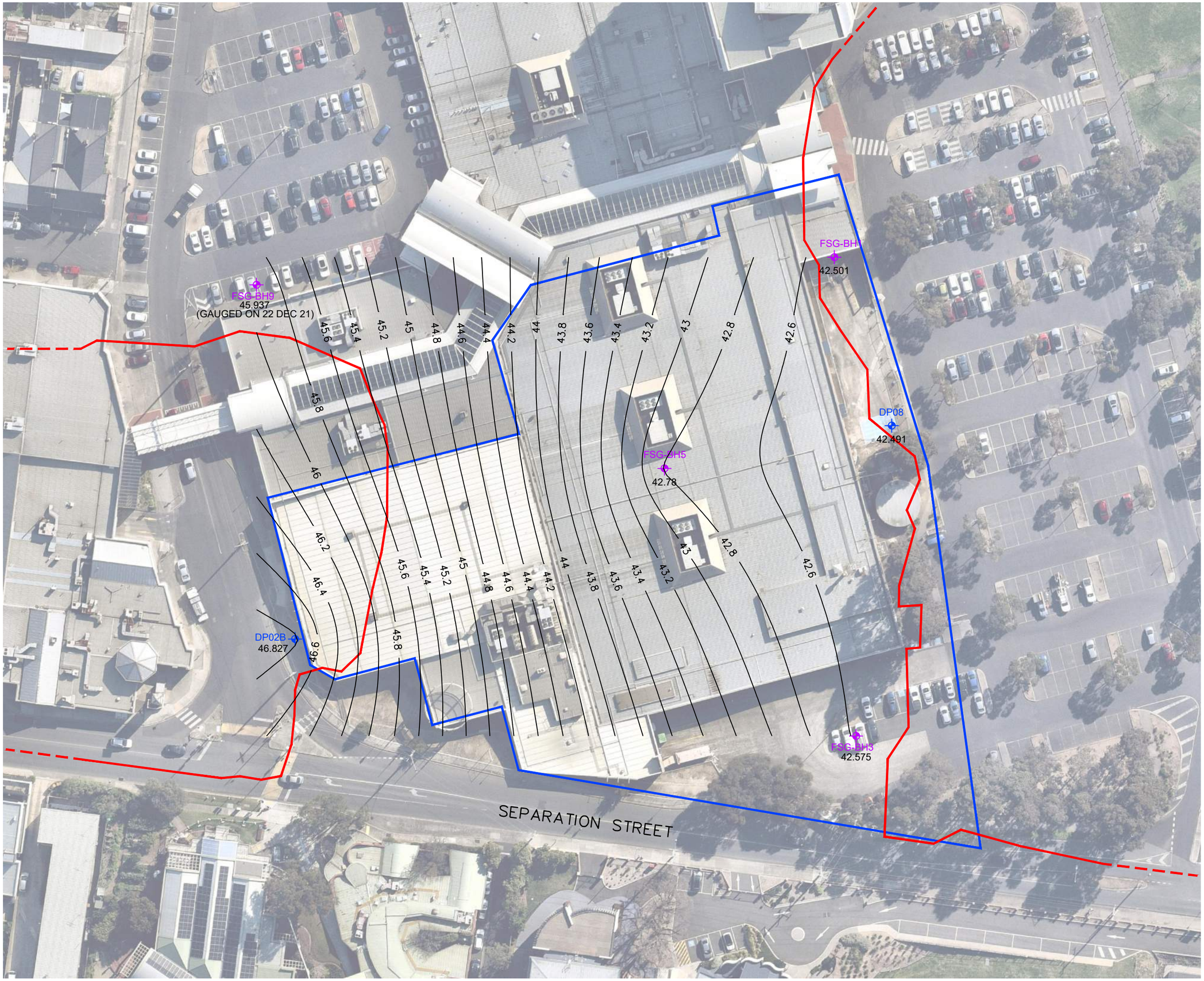
Figure 5
Uniaxial compressive strength of siltstone vs elevation

Date:	02/03/2022	**Project No.:**	4067	**Client:**	Northcote DevCo Pty Ltd
Prepared by:	SYL	**Document:**	02	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



Comments:

FSG-BH01 FSG-BH02 FSG-BH03
FSG-BH04 FSG-BH05 FSG-BH06
FSG-BH07 FSG-BH08 FSG-BH09
Lowest floor slab level



INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

MONITORING WELL:

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL (FSG 2021):

GROUNDWATER ELEVATION CONTOUR (mAHD): 20

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**GROUNDWATER ELEVATION CONTOURS - 20 DECEMBER 2021**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	9 February 2022
FILE REFERENCE:	21135_DRW02V01.DWG
FIGURE NUMBER:	**1**

compassenvironmental

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Appendix A
Engineering Borehole Reports FSG-BH01 to FSG-BH09
Standpipe Installation Reports FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH07 & FSG-BH09
Information sheets

Engineering Borehole Report

FSG-BH01
Sheet 1 of 4

Commenced: 2/12/2021
Completed: 6/12/2021
Logged By: SYL
Checked By: ALH
Final Depth: 21.40 m

Surface RL: 48.20 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed			48	0			FILL CONCRETE: 170 mm thick, reinforced			FILL
							GM	FILL Sandy Silty GRAVEL with cobbles: medium to coarse grained, angular, dark brown; silt low plasticity; sand coarse grained; cobbles less than 20 mm in diameter, angular; trace brick fragments	M-W	D	
				47	1			Continued as Cored Borehole			
				46	2						
				45	3						
				44	4						
				43	5						
				42	6						
				41	7						
				40	8						
				39	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH01
Sheet 2 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING *GROUP SYMB*	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
				48	0		Continuation from non-cored borehole				
NMLC		0 *0*		47	1		FILL CONCRETE				FILL 0.90: inferred solid slab from auger refusal
		0 *0*	**SPT** 1.50-1.95 m 4,4,10 N=14		2		CI-CH CLAY: medium to high plasticity, pale red and orange brown; stiff to very stiff; moist, dry of plastic limit	*CI-CH*			RESIDUAL SOIL: Anderson Creek Formation
		0 *0*		46			Becoming orange brown mottled grey				
		20 *0*	**SPT** 2.50-2.95 m 5,4,6 N=10	45	3						
		50 *0*					ML Sandy SILT: low plasticity, orange brown mottled grey; sand fine grained; hard; moist, dry of plastic limit	*ML*			
		40 *0*	**SPT** 4.00-4.45 m 8,15,18 N=33	44	4						
		45 *0*		43	5		SILTSTONE: orange brown, bedding indiscernable, highly fractured	XW-HW			4.63-5.00 JTx 2 80-90° Un Ro cn <5mm intersecting multiple sub-horizontal joints 4.95-5.00 XS 10-20° recovered as clay 5.00-5.32 SZ 10-20° Ir Sm cg clay 5.33-5.39 CS Ir Ro cg clay 5.40-5.51 JTx 2 80-0° Un Sm vn clay <3mm 5.55-5.71 XS >200mm recovered as clay
				42	6		NO CORE: 5.71-7.00 m				
		60 *10*	7.10 m UCS=2.10 MPa SMC=16.3%	41	7		SILTSTONE: orange brown, beddng indiscernable	XW-HW			7.06-7.13 JTx 2 10-20° Pl Sm cg clay <10mm 7.25-8.30 XS recovered as clay
							Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey, hard	XW			
		35 *0*		40	8		NO CORE: 8.30-9.20 m				
		45 *15*		39	9		SILTSTONE: pale grey and pale brown, bedding indiscernable	XW-HW			9.20-9.30 JT 80-90° Pl Sm cg clay intersecting multiple sub-horizontal joints 9.35-9.42 XS 70-80° Ir Sm cg clay >50mm 9.42-9.43 JT 20-30° Pl Sm cg clay <5mm
					10		NO CORE: 9.54-10.00 m				

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH01
Sheet 3 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING *GROUP SYMB*	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
											PARTICULAR / GENERAL
NMLC		90 *75*	10.30 m SMC=12%	38	10		SILTSTONE: pale grey and pale brown, bedding at about 75 degrees	HW			10.07-10.09 BP 70-80° Pl Ro cg clay <10mm
							NO CORE: 10.46-10.50 m				10.50-10.62 BP 70-80° Pl Sm cg clay >20mm
		100 *25*					SILTSTONE: orange brown and grey, bedding at about 75 degrees	HW			10.74-10.84 JT 20-30° Pl Ro vn clay
											10.85-11.23 SZx 2 20-70° Pl Sm cg clay
		100 *35*	11.00 m UCS=1.80 MPa SMC=11.4%	37	11						11.07-11.08 JT 10-20° Cu Ro cn
											11.44-11.45 JT 10-20° Ir Vr cg clay <5mm
		70 *0*					Becoming pale grey	XW-HW			11.54-11.93 XS 10-20° Pl Sm cg clay <10mm recovered as very low to low strength rock
					12		NO CORE: 11.93-12.10 m				12.10-12.82 XS recovered as clay
		100 *0*		36			Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
		100 *0*	**PP** 12.50 m =250 kPa **PP** 12.70 m =180 kPa								12.83-12.92 JTx 2 10-20° Ir Sm cg clay
					13		SILTSTONE: pale grey and pale brown, bedding indiscernable	XW-HW			13.00-13.45 SZ 20-50° Pl Sm cg clay >450mm
		100 *0*	**PP** 13.10 m =110 kPa	35							
		55 *0*					Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
							NO CORE: 13.77-14.00 m				14.00-14.30 XS recovered as clay
		100 *0*		34	14		Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
		0 *0*					NO CORE: 14.50-15.50 m				
NMLC SPT		0 *0*	**SPT** 15.00-15.18 m 27,8/30mm N=8/30mm practical refusal	33	15						15.00: practical refusal
		100 *0*	**PP** 15.55 m =200 - 230 kPa **PP** 15.75 m =300 - 360 kPa				Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			15.50-15.80 XS recovered as clay
		100 *0*	**PP** 16.10 m =480 kPa	32	16		SANDSTONE: fine grained, pale grey and red-brown, bedding indiscernable, iron oxide staining	XW-HW			16.00-16.22 XS recovered as clay
								XW			16.23-16.45 SZ 10-25° Pl Ro sn FeO
							Extremely weathered zone up to 16.22 m, recovered as silty clay	XW-HW			16.47-16.57 JTx 3 10-20° Pl Ro cg FeO
		100 *75*	16.60 m SMC=12.1%								16.71-16.94 IS 75-85° Pl Sm cg clay iron oxide staining
											16.74-16.75 JT 20-30° Pl Ro sn FeO
		100 *0*		31	17			HW			17.00-17.27 CSx 3 10-20° Un Ro sn FeO >90mm
											17.30-17.61 CSx 2 10-20° Ir Ro sn FeO >100mm
		75 *15*									17.71-17.78 JTx 3 20-50° Pl Ro cg FeO intersecting multiple healed iron oxide joints
							NO CORE: 17.84-18.00 m				18.00-18.02 JT 10-20° Un Ro cg FeO
		100 *30*	18.15 m UCS=17.00 MPa SMC=6.3%	30	18		SANDSTONE: fine grained, pale brown and brown, bedding indiscernable, iron oxide coated joints	MW			18.07-18.11 JT 60-70° Pl Ro cg FeO
											18.17-18.18 JT 10-20° Pl Ro cg FeO
											18.33-18.45 JTx 4 30-50° Ir Ro cg FeO
							Becoming highly fractured, iron oxide stained and coated joints	HW			18.50-19.28 JTx multiple 50-70° Pl Ro cg FeO multiple intersecting joints, iron oxide stained
		100 *0*			19						
				29							19.30-19.60 SZ 10-40° Pl Ro cg FeO
		100 *0*									19.66-19.80 JTx 3 10-30° Pl Ro sn FeO
											19.75-19.84 BP 75-85° Pl Ro sn FeO
					20		Extremely weathered siltstone seam up to 20.15	XW			19.86-20.15 XS 75-85° Pl Sm cg clay

Comments

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Engineering Borehole Report

FSG-BH01
Sheet 4 of 4

Commenced: 2/12/2021
Completed: 6/12/2021
Logged By: SYL
Checked By: ALH
Final Depth: 21.40 m

Surface RL: 48.20 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING *GROUP SYMB*	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
NMLC		100 *0*		*28*	20		m, recovered as clay SANDSTONE: fine grained, pale brown and brown, bedding indiscernable, iron oxide coated joints *(continued)*	HW HW-MW			20.17-20.18 JT 10-20° Pl Vr vn FeO 20.30-20.35 JT 10-30° Ir Vr cg FeO 20.33-20.34 JT healed
		75 *60*	20.80 m UCS=1.80 MPa SMC=8.6%		21		SILTSTONE: grey and pale brown, interbedded with sandstone (30%), bedding at about 75 degrees				
				27			NO CORE: 21.10-21.40 m				
							Hole Terminated at 21.40 m Groundwater well installed				
				26	22						
				25	23						
				24	24						
				23	25						
				22	26						
				21	27						
				20	28						
				19	29						
					30						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH02
Sheet 1 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 10,16,20 N=36		49	0		ML	FILL Sandy Clayey SILT trace gravel: low plasticity, pale brown; sand fine grained; gravel fine to medium grained, sub-angular	w<PL	F-St	FILL
				48	1		CL-Cl	Silty CLAY: low to medium plasticity, pale grey		VSt-H	RESIDUAL SOIL: Anderson Creek Formation
		SPT 2.50-2.86 m 19,22,9/60mm HB N=31/210mm practical refusal		47	2					H	2.50: practical refusal
				46	3			Pale grey and brown			
				45	4			Continued as Cored Borehole			
				44	5						
				43	6						
				42	7						
				41	8						
				40	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH02
Sheet 2 of 4

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
				49	0						
				48	1						
				47	2						
				46	3		Continuation from non-cored borehole				
NMLC		100 *0*	**PP** 4.35 m =110 kPa **PP** 4.45 m =130 kPa 4.50 m SMC=20.6%	45	4		Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			Anderson Creek Formation
		80 *0*			5		NO CORE: 4.90-5.00 m				
		100 *30*	**PP** 5.27 m =270 - 335 kPa	44			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		100 *0*			6		SILTSTONE: pale brown and pale red, bedding indiscernable	XW-HW			5.42-5.45 JT Cu Sm cn probable drilling induced 5.46-5.55 BP 60-70° Pl Sm cg clay <5mm intersecting diagonal joint 5.55 JT 0-10° Pl Sm cn <5mm 5.60-5.80 XS cg recovered as clay 5.81-6.18 JTx multiple 80-90° Pl Sm cg clay multiple intersecting sub-horizontal joints 6.22-6.60 JT 60-70° Pl Sm cg black cemented material
		80 *15*	6.40 m UCS=2.00 MPa SMC=21.6% **PP** 6.70 m =200 - 250 kPa	43							
					7		NO CORE: 6.82-7.00 m				
		75 *0*	**PP** 7.25 m =250 - 260 kPa	42			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		35 *0*			8		NO CORE: 7.47-8.32 m				
				41			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		0 *0*			9		NO CORE: 8.70-9.30 m				
		100 *15*	**PP** 9.40 m =350 kPa **PP** 9.80 m =250 kPa	40			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
					10						

Comments

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Engineering Borehole Report

FSG-BH02
Sheet 3 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR / RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
NMLC		70 / 0	10.20 m SMC=19.4%	39	10		NO CORE: 10.00-10.16 m				
							Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			10.31-10.62 JTx multiple 0-10° Pl Sm cg clay
		55 / 0					NO CORE: 10.77-11.00 m				
		100 / 35		38	11		SILTSTONE: pale grey and brown, bedding at about 80 degrees	HW			11.34-11.39 SS 10-30° Pl Sm cn
		55 / 0					NO CORE: 11.40-11.89 m				
				37	12		SILTSTONE: orange brown and pale grey, bedding at about 80 degrees, interbedded with sandstone (30%)	HW			12.04-12.15 JTx 3 10-20° Pl Sm cn 12.15-12.40 CS crushed rock >350mm
							Becoming higly fractured				
		85 / 0					NO CORE: 12.50-12.63 m				
			13.25 m UCS=0.47 MPa SMC=14.4%	36	13		SILTSTONE: pale grey and orange-brown, bedding at about 80 degrees, interbedded with sandstone (40%)	HW			12.78-13.57 JTx 12 0-15° Pl Sm vn clay
		100 / 0									13.60-13.95 JTx 4 20-30° Pl Sm cg FeO 13.68-13.77 CS 20-30° Pl Ro cg crushed rock
					14			XW-HW			13.95-14.20 XS recovered as clay
		100 / 50		35				HW			14.20-14.22 BP 70-80° Pl Ro cn 14.40-14.52 JTx multiple 10-30° Ir Ro sn FeO intersecting multiple healed iron oxide joints 14.52-14.60 BP 70-80° Pl Ro sn FeO 14.67-14.70 CS 10-20° Cu Ro cg crushed rock <30mm probable drilling induced 14.77-14.83 JT 10-30° Pl Ro sn FeO <10mm
					15		Pale grey and red-brown, bedding indiscernable, interbedded with sandstone (20%) clay seam up to 15.31 m	XW			
		100 / 40		34				XW-HW			15.68-15.69 JT 0-10° Pl Sm vn clay <3mm
			15.50 m UCS=0.28 MPa SMC=14.2%		16						15.95-15.97 XS recovered as clay 15.97-16.09 SZ 30-40° Pl Ro cg FeO 16.13-16.42 XS recovered as clay and low strength rock
		100 / 35		33				XW			16.40-16.60 JT 60-70° Pl Ro sn FeO
							SANDSTONE: fine grained, orange-brown and pale grey, interbedded with siltstone (20%)	HW			16.60-16.72 SZ 20-30° Ir Ro sn FeO 16.74 JT 10-20° Pl Sm sn FeO 16.85-16.90 XS probable drilling induced
					17		NO CORE: 16.90-17.24 m				
		70 / 0		32			SANDSTONE: fine grained, orange-brown and pale grey, highly fractured up to 17.7 m	XW-HW			17.75-17.90 JTx 3 10-20° Ir Ro cn intersecting sub-vertical joint 17.91-17.95 CS 10-20° Cu Ro cg crushed rock <30mm
					18		NO CORE: 18.00-18.10 m				
		90 / 75		31			SANDSTONE: fine grained	XW			18.33-19.10 JTx 4 20-30° Pl Ro cg FeO
							Healed iron oxide joints	HW-MW			18.43-18.67 JT 70-80° Pl Ro cg FeO healed, intersecting multiple healed sub-horizontal joints
							SILTSTONE: brown-grey, bedding at about 80 degrees, intermittent healed iron oxide joints				18.81-18.82 JT 10-20° Pl Sm cg FeO
					19						19.00-20.27 JTx 7 10-20° Pl Ro vn clay
				30							
		100 / 0	19.53 m UCS=3.30 MPa SMC=8.8%		20						

Comments

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Engineering Borehole Report

FSG-BH02
Sheet 4 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION		
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS	
											PARTICULAR	GENERAL
NMLC		100 *0*	20.27 m SMC=6.7%	29	20	× × × × × × × × × × × × × × × ×	SILTSTONE: brown-grey, bedding at about 80 degrees, intermittent healed iron oxide joints *(continued)*	HW-MW				
				28	21		Hole Terminated at 20.40 m Backfilled					
				27	22							
				26	23							
				25	24							
				24	25							
				23	26							
				22	27							
				21	28							
				20	29							
					30							

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH03
Sheet 1 of 3

Commenced: 18/11/2021
Completed: 18/11/2021
Logged By: CW
Checked By: ALH
Final Depth: 18.95 m

Surface RL: 49.90 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: APEX Drilling; Fraste ML
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION						
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 7,16,20 N=36		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10		GP	FILL ASPHALT	D	MD	FILL
							CI-CH	FILL Sandy GRAVEL: fine to medium grained, poorly graded, sub-rounded to sub-angular, grey; sand fine to coarse grained	w<PL	H	RESIDUAL SOIL: Anderson Creek Formation
								CLAY: medium to high plasticity, pale grey mottled red and orange			
								Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH03
Sheet 2 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
				49	0						
					1						
				48	2		Continuation from non-cored borehole				
NMLC		100 *70*	**SPT** 2.50-2.65 m 45 HB 45,0/150mmHB 3.00 m SMC=18.4%				SILTSTONE: pale grey mottled pale red, bedding dipping 55 to 70 degrees	XW-HW			2.50-2.65 Jox2 55-65° Pl Vr clay <3mm Fe stain 2.50: 45,0/150mmHB 2.50-2.65 Jox2 55-65° Pl Vr clay <3mm Fe stain 2.85-2.94 Jo 60-70° Pl Ro clay <3mm Fe stain 3.17-3.18 Jo 10-15° Pl Ro clay <5mm 3.18-3.35 Jo 75-85° Pl Ro vn clay truncating joints 3.57-3.60 XS 0-40° Ir Ro clay <15mm 3.80-4.08 Jox5 5-10° Pl Ro possibly drilling induced
				47	3						
		100 *50*	4.00 m SMC=16.8%	46	4			XW XW-HW			4.38-4.44 Jo 25-35° Pl Sm cg clay 4.45-4.55 SS 35-50° Pl Ro cg clay multiple intersecting joints
				45	5						4.86-4.93 Jo 65-70° Pl Sm cg clay 5.09-5.23 CS 65-75° Pl Ro crushed rock 15mm 5.25-5.65 Jox3 65-70° Pl Ro vn clay
		100 *55*	5.45 m SMC=12.8%	44	6						5.70-5.77 SS 60-75° Pl Vr cg clay
							Pale grey with red	HW			6.14-6.25 Jo 60-70° Pl Ro vn clay healed 6.27-6.47 IS Ir Ro Fe disturbed bedding, 10% Fe 6.62-6.68 Jo 60-70° Pl Ro vn clay truncating joints
				43	7		NO CORE: 6.80-7.00 m				7.00-8.00 SS 35-50° Pl Ro vn clay multiple intersecting joints, recovered as gravelly siltstone
		80 *0*	7.00 m SMC=14.6%				SILTSTONE: pale grey mottled pink, red, orange, bedding dipping 55 to 70 degrees, iron stained 7.1-8.0 m: SHEARED ZONE	XW-HW			
		100 *15*		42	8			HW			8.00-8.25 Jox3 30-50° Pl Ro sn 8.25-8.35 CS 50-70° Pl Vr vn clay multiple intersecting joints 8.47-8.63 SS 10-30° Pl Ro vn clay multiple intersecting joints
		100 *90*	9.00 m SMC=11.4% 9.70 m UCS=2.90 MPa	41	9		SILTSTONE: purple grey, bedding dipping 60 to 75 degrees, disturbed, iron stained	HW-MW			8.83-8.84 Jo 10-20° Pl Ro sn 8.84-11.20 Jox10 10-30° Pl Ro cn
				40	10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH03
Sheet 3 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
NMLC		100 *90*	10.00 m SMC=11%	39	10		SILTSTONE: purple grey, bedding dipping 60 to 75 degrees, disturbed, iron stained *(continued)*	HW-MW			10.44-10.73 Jo 80-90° Pl Ro sn Fe healed
					11						11.20-11.26 Jo 10-30° Pl Ro sn multiple intersecting joints 11.26-13.56 Jox11 10-40° Pl Ro sn
		100 *90*	11.85 m UCS=6.40 MPa SMC=11.6%	38	12						
				37	13						13.56-13.68 BP 50-70° Pl Ro Fe
		100 *90*	13.00 m SMC=9.4%	36	14						13.90-15.86 Jox9 10-30° Pl Ro sn
		100 *60*	14.72 m UCS=6.50 MPa SMC=9.2%	35	15						
				34	16						15.89-15.95 XS 10-30° Pl Ro clay <20mm 15.95-16.93 Jox7 20-70° Pl Ro sn
		100 *75*	16.00 m SMC=8.3%	33	17						16.93-16.97 Jo 20-40° Pl Ro Fe healed 16.97-18.30 Jox6 10-30° Pl Ro sn
											17.25-17.55 IS 75-85° Pl Ro sn Fe
		100 *55*	17.75 m SMC=10.9%	32	18						18.30-18.55 XS 20-60° Pl Ro sn clay <25mm
											18.55-18.95 Jox3 10-30° Pl Ro sn
				31	19		Hole Terminated at 18.95 m Groundwater well installed				
				30	20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH04
Sheet 1 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	9/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	10/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.90 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION						
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.15 m 33 HB practical refusal		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10			CONCRETE: 140 mm thick, reinforced, rebar about 8 mm thick			Fill
							CL-CI	Silty CLAY: low to medium plasticity, white and pale red	w<PL	St	RESIDUAL SOIL: Anderson Creek Formation
							CI	Extremely Weathered siltstone; Sandy CLAY: orange-brown mottled grey, sand is fine grained		H	1.00: practical refusal
								Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH04
Sheet 2 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	9/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	10/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.90 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
				49	0						
				48	1		Continuation from non-cored borehole				
NMLC		100 *55*		47	2		SANDSTONE: fine grained, pale grey and orange-brown, bedding indiscernable, fractured	XW-HW			1.78-1.90 JTx 6 10-20° Pl Ro cg clay intersecting sub-vertical joint 2.00-2.01 JT 0-10° Pl Sm cg clay probable drilling induced 2.05-2.15 JT 70-80° Un Ro cg clay 2.27-2.29 JT 20-30° Pl Ro vn clay
		30 *0*	2.50 m SMC=14.3%				Becoming orange-brown and pale red				2.45-2.62 JTx 5 10-20° Pl Ro cn 2.62-2.67 CS 10-20° Pl Ro crushed rock
					3		NO CORE: 2.67-3.35 m				
		65 *0*		46	4		SILTSTONE: pale brown, bedding indiscernable	XW-HW			3.37-3.46 JT 70-80° Pl Sm vn clay 3.50-4.41 XS recovered as clay
				45	5		NO CORE: 4.41-5.40 m				
		60 *0*		44	6		SANDSTONE: fine grained, orange-brown and pale red, bedding at about 75 degrees, fractured up to 6.5 m	HW			5.40-6.34 JTx multiple 10-20° Pl Ro cn 5.60-5.64 JT 70-80° Pl Ro cg clay
		100 *30*									
		100 *100*	6.50 m UCS=0.40 MPa SMC=14.3%	43	7						6.50-6.75 JTx 2 0-10° Pl Ro sn FeO
		100 *60*		42	8		SILTSTONE: pale red and orange-brown, bedding at about 75 degrees, interbedded with sandstone (20%)	HW-MW			7.20-7.51 JTx 4 0-15° Pl Ro cn >5mm 7.60-7.64 CS 0-10° Pl Ro cg crushed rock <40mm 7.81-7.89 JTx 2 0-10° Pl Ro cn <3mm 8.05-8.18 JTx multiple 10-20° Pl Ro sn FeO 8.32-9.61 JTx multiple 10-20° Pl Ro sn FeO
		100 *45*		41	9		Red and orange-brown, bedding at about 85 degrees, interbedded with sandstone (15%)				
			9.06 m SMC=11.9%	40							
		100 *75*			10						9.73-10.00 BP 70-80° Pl Vr cg FeO

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH04
Sheet 3 of 3

Commenced:	9/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	10/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.90 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
											PARTICULAR / GENERAL
NMLC		100 *75*	10.50 m UCS=2.10 MPa SMC=11.6%	39	10		SILTSTONE: red and orange-brown, bedding at about 85 degrees, interbedded with sandstone (15%)	HW-MW			10.10-10.11 JT 30-40° Ir Ro cn
											10.48-10.49 JT 20-30° Pl Ro sn FeO
		100 *65*		38	11						11.50-11.90 JTx10 10-20° Pl Sm cn
					12						12.00-12.40 SZx multiple 0-30° Pl Sm sn FeO
		100 *70*		37							12.43-13.53 JTx13 10-20° Pl Sm sn FeO
				36	13						13.60 JT 70° Pl Sm cg clay 10mm healed
			13.80 m UCS=1.60 MPa SMC=10.5%		14						14.25 JT 45-90° Un Sm cg Feo >20mm healed
		100 *100*		35							14.30 JT 15° Pl Sm vn FeO >3mm
					15						
				34							15.50-15.67 JTx3 0° Pl Sm cn
		100 *90*	15.67 m UCS=3.20 MPa SMC=10%		16						
				33							16.40 JT 60° Cu Ro vn clay
					17						
		100 *80*		32							17.25 XS 0-10° Pl Sm cg clay healed
											17.60-17.83 JTx4 0-10° Pl Sm cn
				31	18		Hole Terminated at 17.90 m Grouted				
					19						
				30							
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH05
Sheet 1 of 3

Commenced: 13/12/2021
Completed: 14/12/2021
Logged By: SYL/MJF
Checked By: ALH
Final Depth: 17.77 m

Surface RL: 49.43 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**D** 1.00-1.15 m **SPT** 1.00-1.15 m 25/145mm		49 48	0 1		CI	FILL CONCRETE: 130 mm thick, reinforced CLAY trace sand: medium plasticity, pale brown and red brown; sand fine grained	w<PL	VSt-H	FILL RESIDUAL SOIL: Anderson Creek Formation
				47 46 45 44 43 42 41 40	2 3 4 5 6 7 8 9 10			Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH05
Sheet 2 of 3

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
					0						PARTICULAR / GENERAL
				49							
					1						
				48			Continuation from non-cored borehole				
NMLC		100 *30*			2		SILTSTONE: pale grey and orange brown, massive, trace fine grained sand and trace iron staining	HW			1.70-4.30 JTmultiple defects 0-10° Pl Sm sn FeO
				47							2.22-4.16 JTx7 40-50° Pl Sm sn FeO
		100 *25*	2.53 m SMC=14%		3						
				46							
		70 *0*			4			HW-MW			
				45				XW			
					5		NO CORE: 4.48-5.22 m				
		75 *25*	5.22 m SMC=14.3%	44			SILTSTONE: red-brown and orange-brown, bedding indiscernable, iron oxide staining	XW-HW			5.36-5.80 BP 60-70° Pl Ro cg clay
					6						5.55 JT 10-20° Pl Ro sn FeO >5mm
											5.65-5.68 CS 10-20° Pl Sm vn crushed rock
											5.86-5.91 JT 10-20° Ir Sm cn <3mm
											6.00-6.30 CS 50-60° Ir Ro cn crushed rock
				43							6.37-6.79 JTx 5 10-30° Pl Sm cn
		100 *50*	6.80 m UCS=0.36 MPa		7		Bedding at about 75 degrees	HW			
								XW-HW			7.22-7.35 JT 10-20° Pl Ro sn FeO
				42			SANDSTONE: fine grained, orange-brown and pale grey, highly fractured				7.37-7.84 SZ 50-60° Pl Ro cg clay
		65 *0*									7.50-7.63 XS 70-80° Pl Ro cg clay >50mm recovered as clay
					8		NO CORE: 7.84-8.40 m				
				41			SANDSTONE: fine to medium grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (20%), occasional fractured zones	HW			8.60-8.72 JT 20-30° Cu Ro vn clay
		85 *60*	8.85 m SMC=14.9%		9						9.00-9.12 BP 70-80° Pl Sm cg clay <10mm
											9.19-9.24 JT 70-80° Un Sm cn <3mm
											9.33 JT 10-20° Pl Sm cn <3mm
				40							9.47-9.63 SZ 50-60° Ir Ro sn crushed rock iron oxide staining
								XW-HW			9.67-10.00 SZ sn crushed rock iron oxide staining
		100 *45*			10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH05
Sheet 3 of 3

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
NMLC		100 *45*		39	10		SANDSTONE: fine to medium grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (20%), occasional fractured zones *(continued)*	HW			10.34-10.50 JTx multiple 20-35° Pl Ro cg grey gravel <5mm healed
							Becoming pale grey-red and orange-brown	XW-HW			10.61-10.70 CS Ro cg 70% crushed rock, 30% clay <100mm
											10.75-10.89 JT 80-90° Un Ro sn FeO
											10.92-11.00 CS 80% crushed rock, 20% clay
		100 *85*			11			HW			
			11.35 m SMC=18.3%	38							
		100 *80*					Becoming orange-brown and pale red				
					12						12.04-12.18 JTx 3 10-20° Pl Ro sn FeO
		100 *30*		37							12.30-12.63 BPx 2 70-80° Pl Sm cg white clay <5mm intersecting multiple sub-horizontal joints
			12.60 m UCS=1.60 MPa SMC=13.4%		13						12.78-12.95 XS 70-80° Ir Ro cg 80% clay, 20% crushed rock intersecting multiple joints
											13.00-13.02 JT 10-30° Un Sm cn
		90 *45*		36							13.44-13.54 BP 70-80° Pl Sm cg clay iron oxide staining
											13.55-13.56 JT 10-20° Cu Sm cn <5mm
											13.74-13.79 JTx 2 30-40° Pl Sm vn white clay intersecting sub-vertical joint
			13.86 m SMC=10%		14						13.80-13.92 SZ Pl Sm cg clay
											14.06-14.18 JTx multiple 10-20° Pl Sm sn FeO
											14.30-14.35 CS probable drilling induced
				35			NO CORE: 14.35-14.50 m				14.50-15.15 JTx multiple 80-90° Pl Ro sn FeO intersecting multiple sub-horizontal joints
		60 *0*			15		SANDSTONE: fine grained, orange-brown, bedding indiscernable	HW			15.15-15.24 JTx multiple 10-20° Pl Ro sn FeO
				34			NO CORE: 15.24-15.70 m				
		100 *60*			16		SANDSTONE: fine to medium grained, orange-brown, bedding indiscernable, healed iron oxide joints	HW-MW			15.76-15.87 JTx 4 10-30° Un Ro sn FeO clay veneer
											15.88-16.49 JTx multiple 10-70° Pl Ro cg FeO healed
											16.14 JT 20-30° Pl Ro sn FeO
				33							16.32-16.34 JT 10-20° Ir Ro cn
							SILTSTONE: pale grey-brown, bedding at about 75 degrees, interbedded with sandstone (10%)	XW			16.56-16.70 XS 70-80° Pl Ro cg >50mm recovered as clay
								HW-MW			16.75-16.80 JT 10-20° Ir Ro cg FeO healed
		100 *85*	17.00 m UCS=2.10 MPa		17						16.90-16.95 JT 10-70° Ir Sm cn <3mm
				32							17.00 JT 10-20° Ir handling induced
		100 *95*									
					18		Hole Terminated at 17.77 m Groundwater well installed				
				31							
					19						
				30							
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06

Sheet 1 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
DT AD/T	Not Observed	**SPT** 1.05-1.30 m 12,18/100mm HB N=18/100mm practical refusal		49 48	0 1		SP ML Cl CL-Cl	FILL CONCRETE: 120 mm thick, reinforced FILL SAND trace gravel: fine to medium grained, pale brown; gravel coarse grained, angular FILL Gravelly SILT WITH COBBLES with sand: low plasticity, dark brown; gravel fine to medium grained, sub-angular to angular; cobbles less than 30 mm in diameter, sub-angular to angular; sand fine grained; with clumps of low plasticity clay FILL Gravelly CLAY: medium plasticity, dark brown; gravel fine grained, angular; hydrocarbon odour Extremely Weathered siltstone; Gravelly CLAY: low to medium plasticity, pale grey and orange-brown; gravel coarse grained, angular	D w<PL-w~PL w<PL	L-MD F-St H	FILL 0.12: Strong hydrocarbon odour 0.50: 100 mm layer of rubble comprising concrete, brick and ballast cobbles, trace metal fragments EXTREMELY WEATHERED MATERIAL: Anderson Creek Formation 1.05: practical refusal
				47 46 45 44 43 42 41 40	2 3 4 5 6 7 8 9 10			Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
				49	0						
					1						
				48			Continuation from non-cored borehole				
NMLC		80 *20*			2		SILTSTONE: orange-brown and pale grey, bedding indiscernable	XW-HW			
				47				HW			2.11-2.34 JTx 2 70-80° Un Ro cn truncating multiple sub-horizontal joints 2.30-2.35 BP 70-80° Pl Sm vn clay
							NO CORE: 2.50-2.70 m				2.70-2.95 BP 75-85° Cu Sm cg clay >5mm
		100 *0*	3.10 m SMC=16.5%		3		SILTSTONE: orange-brown and pale red, bedding at about 85 degrees, interbedded clay seams	HW			3.02-3.05 JT handling induced 3.11-3.12 JT 10-20° Pl Sm cn possible drilling induced 3.12-3.40 BP 75-85° Pl Sm cg clay >5mm 3.26-3.55 JT 25-35° Pl Sm cg clay >5mm
				46							3.66-3.67 JT 15-20° Ir Ro cn
							NO CORE: 3.70-3.83 m				3.83-4.52 XS 70-80° Pl Ro cg clay recovered as clay
		90 *10*			4		Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			
				45			SILTSTONE: becoming pale red and orange brown, bedding indiscernable	HW			4.73-4.80 SS 50-60° Pl Ro cg clay
					5		Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			4.92-5.10 XS recovered as clay
				44			NO CORE: 5.10-5.63 m				5.63-6.66 XS recovered as gravelly clay
		65 *0*	5.85 m SMC=14.4% **PP** 6.45 m =230 kPa		6		SILTSTONE: pale brown and pale grey, Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			
				43							
							NO CORE: 6.66-7.16 m				7.16-7.70 XS recovered as gravelly clay
		50 *0*			7		SILTSTONE: pale brown and pale grey, bedding indiscernable	XW-HW			
		100 *0*		42	8						7.70-7.73 JT 10-20° Pl Ro cg clay 7.75-8.04 JT 20-30° Pl Ro cg clay iron oxide staining
		50 *0*					NO CORE: 8.22-8.45 m				
				41			SILTSTONE: pale orange-brown, bedding indiscernable, clay seam up to 8.61 m	XW			8.64-8.95 JTx 5 10-30° Cu Sm cn probable drilling induced
		100 *30*			9			XW-HW			8.95-9.10 IS 70-80° Pl Sm cg clay >5mm 9.05-9.10 JT 60-70° Pl Sm cg clay
		100 *20*	9.06 m SMC=14.7%	40			Bedding at about 75 degrees, interbedded with sandstone (10%)	HW			9.18-9.32 JTx multiple 10-30° Ir Ro cg clay, sand
		100 *60*			10						9.49-9.51 CS 10-20° Pl Ro cg crushed rock 9.61-9.70 JTx 2 20-30° Pl Sm cn >5mm 9.79-9.80 CS 10-20° Pl Ro cg crushed rock <10mm

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06
Sheet 3 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR — GENERAL
NMLC		100 *25*		39	10		SILTSTONE: pale orange-brown, bedding indiscernable, clay seam up to 8.61 m *(continued)* Becoming orange-brown	XW HW			9.91-10.03 XS recovered as clay 10.13-10.56 JTx 5 10-20° St Sm cg white clay
		100 *90*	11.66 m UCS=3.10 MPa SMC=11.8%	38	11		Becoming pale grey and orange-brown, healed iron oxide joints				10.92-11.81 JTx 6 10-20° Pl Sm cn possible drilling induced 11.02-11.03 JT handling induced
		100 *65*		37	12						12.15-13.55 JTx 11 0-10° Pl Sm cn
					13		SILTSTONE: grey and orange-brown, bedding at about 75 degrees, interbedded with sandstone (5%), trace iron oxide staining	HW-MW			
		85 *15*	14.10 m UCS=0.26 MPa SMC=13.9%	36	14		SANDSTONE: fine grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (5%)	HW			13.67-14.37 JTx multiple 0-10° Pl Sm sn FeO 14.37-14.76 XS 0-10° Pl Ro recovered as clay
		55 *0*		35	15		NO CORE: 14.76-15.69 m				
		65 *0*	16.70 m SMC=15.2%	34	16		SILTSTONE: pale grey and orange-brown, iron oxide staining	XW-HW			15.90-16.35 XS recovered as gravelly clay 16.35-16.47 SZ 70-80° Pl Ro lenticular rock 16.47-16.50 XS 16.60-16.66 JT 60-70° Pl Sm cg FeO 16.66-16.69 JT 20-30° Pl Sm cg FeO 16.75-17.00 SZ 10-20° Pl Ro cg lenticular rock iron oxide coating
		100 *0*		33	17		NO CORE: 17.00-17.28 m				
		100 *15*		32	18		SILTSTONE: orange-brown and pale grey, bedding at about 70 degrees, iron oxide staining, interbedded with sandstone (30%) Becoming grey and orange-brown	HW XW HW			17.33-17.42 JT 10-30° Pl Ro sn FeO 17.52-17.65 XS recovered as clay 17.76-17.92 JTx 3 10-30° Pl Sm vn clay iron oxide staining, probable drilling induced 18.11-18.13 JT 40-50° Ir Sm vn clay
		100 *25*		31	19						18.37-18.96 JTx multiple 20-30° Pl Ro cg FeO 18.40-18.71 JTx multiple 60-70° healed iron oxide joints 19.05-19.06 JT 20-30° Ir Ro cg FeO
		100 *55*		30	20			HW-MW			19.29-19.32 XS 15-25° Pl Ro cg 90% clay, 10% crushed rock iron oxide staining 19.52-19.63 JTx 2 10-20° Pl Sm cn
		100 *85*	19.63 m UCS=0.74 MPa SMC=11.3%				Becoming pale red				19.81-19.82 JT 10-20° Pl Sm cn probable drilling induced

Comments

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Engineering Borehole Report

FSG-BH06
Sheet 4 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
NMLC		100 *85*		29	20		Becoming grey and orange-brown SILTSTONE: orange-brown and pale grey, bedding at about 70 degrees, iron oxide staining, interbedded with sandstone (30%) *(continued)*	HW-MW			20.00-20.29 JTx 3 10-30° Pl Ro cg FeO 20.43-20.50 CS 60-70° Pl Ro cg FeO <10mm
				28	21		Hole Terminated at 20.71 m Backfilled				
				27	22						
				26	23						
				25	24						
				24	25						
				23	26						
				22	27						
				21	28						
				20	29						
					30						

Comments

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Engineering Borehole Report

FSG-BH07

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed			52	0		CI	FILL Sandy Silty CLAY: medium plasticity, dark brown; sand fine to medium grained; trace brick fragments	w~PL	F	FILL
		SPT 1.00-1.45 m HW/50mm,1/100mm,2,4 N=6		51	1		CI-CH	FILL CLAY trace sand: medium to high plasticity, mottled grey dark brown; sand fine grained	w~PL	S-F	
		SPT 2.50-2.95 m HW/300mm,1		50	2			With sand: sand fine to medium grained			
				49	3			With gravel: gravel coarse grained, sub-rounded to sub-angular; with brick fragments			
WB		**SPT** 4.00-4.45 m HW/100mm,1/50mm,2,3 N=5		48	4						4.10: 100% water loss
		SPT 5.50-5.95 m HW/40mm,1/110mm,5,16 N=21		47	5		CH	Sandy CLAY: high plasticity, pale grey mottled orange brown; sand medium to coarse grained, of SILTSTONE origin	w~PL-w>PL	VSt	
				46	6		SC	Extremely Weathered siltstone; Clayey SAND: fine to medium grained, orange-brown; clay high plasticity	M-W	D	
				45	7			Continued as Cored Borehole			
				44	8						
				43	9						
					10						

Comments

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Engineering Borehole Report

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Sheet 2 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS	
											PARTICULAR	GENERAL
				52	0							
				51	1							
				50	2							
				49	3							
				48	4							
				47	5							
				46	6		Continuation from non-cored borehole					
NMLC	Water	100 / *50*	**SPT** 6.50-6.57 m 20/65mm HB	45	7	× × ×	Extremely Weathered siltstone; CLAY (Cl): brown mottled grey, hard	XW / HW			6.50-6.60 XS SPT hole present 6.60-6.70 JT 70-80° Pl Sm cn intersecting sub-horizontal joint 6.74-6.80 IS 55-65° Pl Sm cg clay recovered as clay 6.86-7.71 JTx 6 0-10° Pl Sm cn	
		100 / *40*	7.00 m UCS=2.70 MPa 7.42 m UCS=3.20 MPa SMC=9.9%	44	8	× × ×	SILTSTONE: brown-grey, bedding at about 60 to 70 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%)	HW-MW			7.70-8.00 JT 70-80° Pl Sm cn intersecting multiple micro joints 8.20-8.66 JTx 4 0-10° Pl Sm cn <3mm 8.44-8.52 JTx multiple 10-40° Ir Sm cn multiple micro joints	
		100 / *60*		43	9	× × ×	Extremely weathered seam up to 8.81 m	XW / HW-MW			8.69-8.81 XS recovered as clay 9.00-9.15 JTx multiple 60-70° 9.15-9.30 JT 60-70° Pl Sm sn Fe	
		100 / *50*	9.54 m SMC=10.3%		10	× × ×					9.54-9.64 JTx 2 10-20° Pl Sm vn Fe 9.68-10.20 JTx 5 10-20° Pl Sm sn FeO >5mm	

Comments

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Engineering Borehole Report

FSG-BH07
Sheet 3 of 4

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
NMLC	Water	100 *50*	11.00 m SMC=11.5%	42	10		SILTSTONE: brown-grey, bedding at about 60 to 70 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%) *(continued)*	HW-MW			10.30-10.70 SZ 60-70° Ir Ro sn crushed rock iron oxide staining
							Sheared zone up to 10.77 m	XW-HW			10.71-10.77 CS 50-60° Pl Ro sn crushed rock <15mm iron oxide staining
				41	11			HW			
							Fractured zone up to 11.69 m				11.31-11.41 JTx 2 10-20° Pl Ro sn crushed rock <20mm iron oxide staining
											11.50-11.52 IS 10-20° Pl Sm cg clay <20mm
											11.58-11.71 JTx 2 10-20° Pl Ro sn FeO
		100 *60*									11.81-12.26 JTx 3 10-25° Pl Sm sn FeO <5mm
				40	12						
			12.90 m SMC=11.7%								12.90 JT 0-10° Pl Sm cn <10mm
					13						13.18-13.27 XS 30-40° Pl Ro cg 60% crushed rock, 40% clay <100mm
		100 *65*		39			SILTSTONE: brown-grey, bedding at about 70 to 80 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%)	XW			13.45-13.46 JT 20-30° Pl Sm cn <3mm
								HW-MW			13.53 JT probable drilling induced
					14						13.72-13.75 CS 0-10° Ir Ro sn crushed rock iron oxide staining
											14.04-14.12 JTx 2 10-20° Pl Sm vn black material
				38							
			14.66 m UCS=2.70 MPa SMC=9.9%								14.59-14.66 JTx 2 10-20° Pl Sm sn Fe <10mm
		100 *55*			15						14.90-15.20 SZ Ir Vr sn FeO
							Fractured zone up to 15.2 m				
				37							15.28 JT 10-20° Pl Ro sn FeO <10mm
											15.47-15.55 JTx multiple 40-60° Ir Ro sn FeO
											15.62-15.63 JT 20-30° Pl Sm sn FeO <5mm
											15.75 JT 0-10° Pl Sm cn <5mm
					16						
		100 *75*									16.17 JT 0-10° Pl Sm cn <3mm
				36							
											16.65-16.67 JT 0-10° Pl Ro sn FeO <10mm
					17						16.90-17.00 JTx multiple 10-20° Pl Ro sn crushed rock iron oxide staining
			17.05 m SMC=9.1%								17.05-17.15 JTx 2 10-20° Pl Sm cg FeO
							Becoming grey-brown				
				35							
		100 *100*			18						18.03-19.37 JTx 7 0-10° Pl Sm cn <5mm
				34							
			18.90 m SMC=7.6%		19						
		100 *85*		33							
											19.66-19.69 JT 50-60° Pl Sm cn
					20						19.82-20.00 JTx multiple 20-40° Pl Sm sn Fe

Comments

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Engineering Borehole Report

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Sheet 4 of 4

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION		
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR	GENERAL
		100 *85*			20						20.02 JT 0-10° PI	
				32			Hole Terminated at 20.26 m Groundwater well installed					
					21							
				31								
					22							
				30								
					23							
				29								
					24							
				28								
					25							
				27								
					26							
				26								
					27							
				25								
					28							
				24								
					29							
				23								
					30							

Comments

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Engineering Borehole Report

FSG-BH08
Sheet 1 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 5,10,13 N=23 **PP** 1.10 m =500 kPa		49	0		SP	ASPHALT: 30 mm thick	M	MD	Fill
								FILL SAND with gravel: fine to coarse grained, red orange; gravel fine to medium grained, sub-angular to sub-rounded			FILL
							GP	FILL Sandy GRAVEL with clay: fine to medium grained, sub-rounded to sub-angular, grey brown; sand fine to coarse grained; with brick fragments and building rubble			
				48	1		CH	CLAY with gravel: high plasticity, red orange; gravel fine to medium grained, sub-rounded to sub-angular	w<PL	VSt-H	RESIDUAL SOIL: Anderson Creek Formation
		SPT 2.50-2.83 m 10,26,10/30mm HB N=36/180mm		47	2			Extremely Weathered siltstone; CLAY (CH): high plasticity, red-orange		H	
				46	3			Continued as Cored Borehole			
				45	4						
				44	5						
				43	6						
				42	7						
				41	8						
				40	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH08
Sheet 2 of 3

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
											PARTICULAR / GENERAL
				49	0						
				48	1						
				47	2						
							Continuation from non-cored borehole				
NMLC		100 *0*	**SPT** 2.50-2.83 m 10,26,10/30mm HB	46	3		Extremely Weathered siltstone; CLAY (CH): high plasticity, orange-brown and pale grey, hard	XW			2.80 XS
		100 *0*	3.00 m SMC=15.6%								3.10-3.20 SZ 70-80° Ir Ro cg white clay 3.20-3.50 Jox multiple Pl Sm cg white clay <3mm multiple intersecting joints
		100 *0*		45	4		SILTSTONE: orange brown and pale grey, bedding at about 80 degrees, iron stained, highly fractured, infilled with clay	XW-HW			3.50-3.80 SZ 70-80° Pl Sm cg clay >250mm 3.80-3.92 XS 70-80° Pl Sm cg clay <200mm 4.06-4.20 Jox 2 70-80° Pl Ro cn intersecting multiple micro joints 4.21-4.28 CS Ro sn Fe
		100 *35*	4.55 m SMC=13.3%		5		Becoming less fractured				4.36-4.52 ISx 2 10-20° Pl Ro cg 90% clay, 10% crushed rock <50mm iron stained 4.66 Jo 10-20° Pl Sm sn Fe <5mm 4.70-5.10 SZ 70-80° Pl Ro cg 80% clay, 20% crushed rock
		100 *0*		44			Extremely Weathered siltstone; CLAY (CH): high plasticity, orange-brown and pale grey, hard	XW			5.10-5.90 XS 60-80° Pl Ro clay recovered as gravelly clay
		100 *45*		43	6						5.90-6.40 XS 40-60° Pl Ro clay
		100 *55*	7.65 m UCS=1.20 MPa SMC=12.2%	42	7		SILTSTONE: orange-brown and pale grey, bedding at 80 degrees, disturbed	XW-HW			6.40-6.95 Jox2 20-40° Pl Ro cg clay <2mm 6.95-7.05 XS 10-20° Pl Ro clay
					8			HW			7.25-7.38 SZ 10-80° Pl Ro sn Fe multiple intersecting joints 7.38-7.56 Jox1 70-80° Pl Ro sn Fe 7.56-8.10 Jox3 10-20° Pl Ro sn Fe
		100 *35*	8.85 m SMC=11.9%	41	9						8.05-8.14 BP 70-80° Pl Ro sn Fe 8.10-8.50 Jo 10-80° Pl Ro cg Fe multiple truncating intersecting joints, healed 8.12-8.27 XS 70-80° Pl Ro clay >30mm 8.25-8.39 Jox2 60-70° Un Sm cg clay iron stained 8.39-8.84 Jox2 10-20° Pl Vr sn Fe 8.60-8.66 XS 50-60° Pl Ro clay >50mm 8.66-8.73 SS 20-40° Pl Ro sn Fe multiple intersecting joints 8.73-12.10 Jox11 20-60° Pl Ro sn Fe 8.84-8.86 XS 10-20° Pl Ro clay <20mm
		100 *85*		40	10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH08
Sheet 3 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS (PARTICULAR / GENERAL)
NMLC		100 *85*	10.00 m SMC=10.2%	39	10		SILTSTONE: orange-brown and pale grey, bedding at 80 degrees, disturbed *(continued)*	HW			10.00-10.10 BP 70-80° Pl Ro sn Fe healed
		100 *65*	11.20 m UCS=2.70 MPa SMC=10.5%	38	11						11.70-11.82 XS 70-80° Pl Ro clay <15mm
				37	12						12.10-12.20 XS 70-80° Pl Ro clay <20mm 12.11-12.50 SZ 40-60° Pl Ro cg clay iron stained
		100 *0*									
		100 *40*			13						12.75-12.90 Jo 30-80° Pl Ro sn Fe multiple truncating intersecting joints
				36			Hole Terminated at 13.20 m Backfilled				
				35	14						
				34	15						
				33	16						
				32	17						
				31	18						
				30	19						
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH09
Sheet 1 of 3

Commenced: 19/11/2021
Completed: 19/11/2021
Logged By: CW
Checked By: ALH
Final Depth: 13.00 m

Surface RL: 49.20 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: APEX Drilling; Fraste ML
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION						
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 4,7,9 N=16 **PP** 1.10 m =350 kPa		49	0		SP	ASPHALT	M	MD	Fill
								FILL SAND with gravel: fine to coarse grained, poorly graded, red orange; gravel fine to medium grained, sub-angular to sub-rounded			FILL
							GP	FILL Sandy GRAVEL with clay with: fine to medium grained, poorly graded, sub-rounded to sub-angular, grey brown; sand fine to corase grained; brick fragments and building rubble	M	L	
				48	1		CH	CLAY with gravel: high plasticity, pale brown; gravel fine grained, sub-rounded	w~PL	VSt-H	RESIDUAL SOIL: Anderson Creek Formation
				47	2			Extremely Weathered siltstone; CLAY (CH): high plasticity, pale grey with orange		H	
		SPT 2.50-2.95 m 13,24,30 N=54			3			Continued as Cored Borehole			
				46							
				45	4						
				44	5						
				43	6						
				42	7						
				41	8						
				40	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH09

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING *GROUP SYMB*	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
				49	0						
				48	1						
				47	2						
							Continuation from non-cored borehole				
NMLC		30 *0*		46	3		NO CORE: 2.95-3.84 m				
		100 *25*		45	4		Extremely Weathered siltstone / sandstone; CLAY (CH): high plasticity, grey, hard	XW			
		100 *30*	6.00 m SMC=11.5%	44	5		SILTSTONE: pale grey and brown, bedding dipping 60 to 75 degrees, disturbed, multiple iron healed joints, iron stained	XW-HW			5.37-7.75 Jox14 20-30° Pl Ro sn Fe 5.40-5.72 XS 50-70° Pl Ro clay <35mm gravelly clay seam
				43	6			HW			5.85-5.93 SS 20-40° Pl Ro clay <3mm multiple truncating intersecting joints 6.47-6.90 Jo 75-85° Pl Ro cg clay <2mm
		100 *40*	7.45 m UCS=0.57 MPa SMC=10.2%	42	7						7.30-7.60 BP 70-80° Pl Ro sn Fe healed 7.70-8.00 Jo 60-80° Pl Ro cg clay multiple truncating intersecting joints
				41	8						8.08-8.25 Jo 50-70° Pl Ro vn clay multiple truncating intersecting joints 8.30-8.40 SS 20-80° Pl Ro vn clay multiple truncating intersecting joints 8.40-9.04 Jox6 20-40° Pl Ro sn Fe
		100 *50*	8.50 m UCS=0.48 MPa SMC=13.8%	40	9						9.30-9.50 Jo 70-80° Pl Ro vn clay multiple truncating intersecting joints 9.63-9.65 XS 10-20° Pl Ro clay <20mm 9.65-11.20 Jox9 10-20° Pl Ro sn Fe
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH09
Sheet 3 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING *GROUP SYMB*	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
											PARTICULAR / GENERAL
NMLC		100 *45*	10.00 m SMC=11.3%	39	10		SILTSTONE: pale grey and brown, bedding dipping 60 to 75 degrees, disturbed, multiple iron healed joints, iron stained *(continued)*	HW			11.20-11.42 CS 40-60° Ir Ro sn Fe
				38	11						11.42-13.00 Jox10 10-30° Pl Ro sn Fe
		100 *15*	12.00 m SMC=8.8%	37	12			XW-HW			
					13		Hole Terminated at 13.00 m Groundwater well installed				
				36	14						
				35	15						
				34	16						
				33	17						
				32	18						
				31	19						
				30	20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH01
Sheet 1 of 1

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T NMLC	Not Observed	**SPT** 1.50-1.95 m 4,4,10 N=14 **SPT** 2.50-2.95 m 5,4,6 N=10 **SPT** 4.00-4.45 m 8,15,18 N=33 **PP** 12.50 m =250 kPa **PP** 12.70 m =180 kPa **PP** 13.10 m =110 kPa **PP** 13.40 m =80 kPa		48 46 44 42 40 38 36	0 2 4 6 8 10 12 14		GM CI-CH ML XW-HW XW HW	FILL CONCRETE FILL Sandy Silty GRAVEL with cobbles CLAY Sandy SILT SILTSTONE NO CORE SILTSTONE Extremely weathered siltstone; CLAY (CI-CH) NO CORE SILTSTONE NO CORE SILTSTONE NO CORE SILTSTONE Extremely weathered siltstone; CLAY (CI-CH) SILTSTONE Extremely weathered siltstone; CLAY (CI-CH) NO CORE	1	1	Grout Bentonite seal Sand filter pack 50 mm Class 18 machine slotted PVC Bentonite seal	0.50 5.50 6.00 10.50 11.50	48 46 44 42 40 38 36

Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH03

Sheet 1 of 1

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T	Not Observed	**SPT** 1.00-1.45 m 7,16,20 N=36		48	0		GP	FILL Sandy GRAVEL					48
					2		CI-CH	CLAY					
NMLC		**SPT** 2.50-2.65 m 45 HB 45,0/150mmHB		46	4		XW-HW	SILTSTONE					46
							XW						
				44	6		XW-HW						44
							HW						
								NO CORE					
				42	8		XW-HW	SILTSTONE 7.1-8.0 m					42
							HW						
				40	10		HW-MW	SILTSTONE					40
				38	12								38
				36	14								36
				34	16								34
				32	18								32
				30	20								30

PIEZOMETER CONSTRUCTION DETAILS:
- 8.00 m: Grout
- 11.90 m: Bentonite seal
- 12.90 m: Sand filter pack; 50 mm Class 18 machine slotted PVC

Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:11 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH05
Sheet 1 of 1

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T		**D** 1.00-1.15 m **SPT** 1.00-1.15 m 25/145mm		48	0		CI	FILL CONCRETE CLAY trace sand				Grout	48
NMLC	Not Observed			46	2		HW	SILTSTONE			2.50	Bentonite seal	46
					4		HW-MW				3.50 4.00		
							XW	NO CORE					
				44	6		XW-HW	SILTSTONE					44
							HW					Sand filter pack	
				42			XW-HW	SANDSTONE				50 mm Class 18 machine slotted PVC	42
					8			NO CORE					
				40			HW	SANDSTONE					40
					10		XW-HW				10.50	Bentonite seal	
							HW						
							XW-HW				11.50		
				38	12		HW						38
				36	14								36

Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH07

Sheet 1 of 1

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB / WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T				52	0		CI	FILL Sandy Silty CLAY					52
		SPT 1.00-1.45 m HW/50mm,1/100mm,2,4 N=6					CI-CH	FILL CLAY trace sand					
					2							Grout	
		SPT 2.50-2.95 m HW/300mm,1		50				With sand					50
									3.40				
								With gravel				Bentonite seal	
WB		**SPT** 4.00-4.45 m HW/100mm,1/50mm,2,3 N=5		48	4				4.50				48
									5.00				
		SPT 5.50-5.95 m HW/40mm,1/110mm,5,16 N=21					CH	Sandy CLAY					
					6		SC						
NMLC	Not Observed	**SPT** 6.50-6.57 m 20/65mm HB		46			XW	Extremely Weathered siltstone; CLAY (CI)					46
							HW	SILTSTONE					
							HW-MW						
					8							Sand filter pack	
				44								50 mm Class 18 machine slotted PVC	44
							XW						
							HW-MW						
	Water				10								
				42			XW-HW						42
							HW						
									11.70				
					12							Bentonite seal	
				40					12.50				40
							XW	SILTSTONE					
							HW-MW						
					14								

Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH09

Sheet 1 of 1

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T				48	0		SP	FILL SAND with gravel					48
							GP	FILL Sandy GRAVEL with clay with					
		SPT 1.00-1.45 m 4,7,9 N=16 **PP** 1.10 m =350 kPa					CH	CLAY with gravel				Grout	
					2			Extremely Weathered siltstone; CLAY (CH)					
		SPT 2.50-2.95 m 13,24,30 N=54							3.00				
NMLC				46				NO CORE					46
					4		XW	Extremely Weathered siltstone / sandstone; CLAY (CH)				Bentonite seal	
									5.00				
				44			XW-HW	SILTSTONE					44
					6		HW		6.50				
				42									42
					8								
												Sand filter pack	
				40									40
					10							50 mm Class 18 machine slotted PVC	
				38									38
					12								
							XW-HW						
				36									36
					14								

Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Introduction

The terms and abbreviations used are in accordance with the Australian Standard **AS 1726-2017**. Soil and rock descriptions have been recorded using established field techniques and laboratory test results, where available. As far as is practical the data contained on the borehole report sheets is factual. Some interpretation is inevitable in the assessment of conditions between samples and of the origin of the materials. Standard colour charts have not been used.

Assessment of potential site contamination does not form part of this geotechnical report. Any reference to potential contaminants is for information only and does not necessarily indicate the presence or absence of soil or groundwater contamination.

Drilling and Sampling

Excavation Method

Symbol	Description
DT	Diatube
NDD	Non-destructive digging
E	Excavator
HA	Hand auger
AD	Auger drilling
WB	Wash boring
NMLC	Rock coring with NMLC core barrel
HQ3	Rock coring with HQ3 core barrel

Groundwater

Symbol	Description
	Observed standing water level and date
	Observed water inflow
	Observed water / drilling fluid loss
Not Encountered – groundwater not present during drilling	
Not Observable – groundwater unable to be recorded or observed	

Sampling

Symbol	Description
D	Disturbed sample
B	Bulk disturbed sample
SPT	Standard Penetration Test sample
U50 / U63	Undisturbed sample (50 mm / 63 mm diameter)
TCR	Total Core Recovery (%)
RQD	Rock Quality Designation (%)

Field Testing

Symbol	Description
SPT	Standard Penetration Test – AS 1289.6.3.1
HV	Field Shear Vane – in general accordance with AS 1289.6.2.1 s_v = uncorrected undisturbed shear strength s_r = uncorrected remoulded shear strength
PP	Pocket Penetrometer – field reading (kPa)
DCP	Dynamic Cone Penetrometer – AS 1289.6.3.2

Soil Description

Group Symbol

Soil Type	Symbol	Description
GRAVEL	GW	Well graded gravels, ≤ 5% fines
	GP	Poorly graded gravels, ≤ 5% fines
	GM	Silty gravels, ≥ 12 % fines
	GC	Clayey gravels, ≥ 12 % fines
SAND	SW	Well graded sands, ≤ 5% fines
	SP	Poorly graded sands, ≤ 5% fines
	SM	Silty sands, ≥ 12 % fines
	SC	Clayey sands, ≥ 12 % fines
SILT	ML	Inorganic silt, low plasticity
	MH	Inorganic silt, high plasticity
CLAY	CL	Inorganic clay, low plasticity
	CI	Inorganic clay, medium plasticity
	CH	Inorganic clay, high plasticity
ORGANIC	OL	Organic silt/clays, low plasticity
	OH	Organic silt/clays, high plasticity
	PT	Peat, primarily organic matter

Soil Type and Particle Size

Major Division	Sub Division		Particle Size (mm)
Oversize	Boulders		> 200
	Cobbles		63 – 200
Coarse Grained (>65% of material < 63 mm and > 75 μm)	Gravel	Coarse	19 – 63
		Medium	6.7 – 19
		Fine	2.36 – 6.7
	Sand	Coarse	0.6 – 2.36
		Medium	0.21 – 0.6
		Fine	0.075 – 0.21
Fine Grained (>35% of material < 75 μm)	Silt		2 – 75 μm
	Clay		< 2 μm

Secondary and Minor Components

Coarse Grained Soils		Fine Grained Soils	
% Fines	Modifier	% Coarse	Modifier
≤ 5	'trace'	≤ 15	'trace'
>5 to ≤12	'with'	>15 to ≤ 30	'with'
> 12	prefix soil type	> 30	prefix soil type

Explantory Notes and Abbreviations

Colour

Described using simple terms. Modified as necessary by 'pale', 'dark' or 'mottled.'

Plasticity

Term	Liquid Limit	Field Identification
Low	≤ 35	Cannot be rolled into threads when moist
Medium	>35 to ≤ 50	Rolls into threads when moist
High	> 50	Rolls into threads when moist, greasy, considerable shrinkage on drying, cracks when dry

Angularity



Rounded | Sub-rounded | Sub-angular | Angular

Coarse Grained Descriptors

Term	Description
Well graded	Having good representation of all sizes
Poorly graded	One or more sizes poorly represented
Gap graded	With one or more intermediate sizes absent
Uniformly	Essentially of one size

Moisture Content

Term	Symbol	Field Identification
Dry	D	Looks and feels dry, cohesive soils hard and friable
Moist	M	Soil feels cool, darkened in colour, tends to cohere
Wet	W	Free water on remoulding
Moist, dry of plastic limit	w < PL	Hard and friable or powdery
Moist, near plastic limit	w = PL	Can be moulded at a moisture content near the plastic limit
Moist, wet of plastic limit	w > PL	Soils usually weakened and free water forms when handling

Strength of Fine Grained Soils

Term (Symbol)	Undrained Shear Strength (kPa)	Field Identification
Very Soft (VS)	< 12	Exudes between fingers when squeezed
Soft (S)	12 – 25	Easily moulded by light finger pressure
Firm (F)	25 – 50	Moulded with strong finger pressure
Stiff (St)	50 – 100	Readily indented by thumb but cannot be moulded by fingers
Very Stiff (VSt)	100 – 200	Readily indented by thumb nail
Hard (H)	> 200	Indented with difficulty by thumb nail, brittle
Friable (Fb)	-	Can be easily crumbled or broken into small pieces by hand

Strength of Coarse Grained Soils

Term (Symbol)	Density Index (%)	SPT N value	Field Identification
Very Loose (VL)	< 15	0 – 4	Foot imprints easily
Loose (L)	15 – 35	4 – 10	Shovels easily
Medium Dense (MD)	35 – 65	10 – 30	Shovelling difficult
Dense (D)	65 – 85	30 – 50	Pick required
Very Dense (VD)	> 85	> 50	Pick difficult

Soil Origin

Term	Description
Fill	Deposited by humans. May be significantly more variable than natural deposits. Can be soil, rock, domestic or industrial products
Topsoil	Mantle of surface and/or near surface soil often but not always defined by high levels of organic material.
Colluvium	Transported by gravity. Heterogeneous with a range of sizes
Aeolian	Carried and deposit by wind
Estuarine	Deposited in coastal estuaries, and including sediments carried by inflowing rivers and streams, and tidal currents
Alluvium	Transported by water. Pronounced stratification. Gravels are rounded
Marine	Transported by water. Deposited in oceans, bays, beaches and estuaries
Residual Soil	Weathered in place. Structure and fabric of parent rock not visible
Extremely Weathered Rock	Weathered in place. Structure and fabric of parent rock visible

Soil Structure

Applicable Term for Soil Type			Field Identification
Coarse	Fine	Organic	
Heterogeneous			A mixture of types
Homogeneous		x	Deposit consists of essentially of one type
Interbedded		x	Alternating layers of varying types or with bands or lenses of other materials
x	Intact	x	No fissures
x	Fissured	x	Breaks into polyhedral fragments
x	Slicken-sided	x	Polished and striated defects caused by motion of adjacent material
Residual Soils		x	Totally decomposed rock; no identifiable parent rock structure
x	x	Fibrous	Plant remains recognizable; retains some strength
x	x	Amor-phous	No recognisable plant remains

Rock Description

Colour

Described in the moist condition using simple terms. Modified as necessary by 'pale', 'dark' or 'mottled.'

Grain Size

For metamorphic and igneous rocks, the typical grain size is recorded in millimetres (when visible). Refer AS1726-2017.

Structure and Texture

Rock Type	Term	Description
Sedimentary	Bedded	Bedding planes visible
	Laminated	Small scale sequence of fine layers (similar to bedding)
Sedimentary / Igneous	Massive	Effectively homogeneous and isotropic
Igneous	Flow Banded	Bands or layers formed from molten rock
	Porphyritic	Larger crystals set in a finer ground mass
Metamorphic	Foliated	Repetitive layering, may be planar or wavy
	Schistosity	Parallel arrangement of tabular minerals
Duricrust	Ferricrete	Cemented by iron oxides and hydroxides
	Silcrete	Cemented by silcrete
	Calcrete	Cemented by calcium carbonate
	Gypcrete	Cemented by gypsum

Other terms used where applicable.

Weathering Classification

Term (Symbol)	Description
Residual Soil (RS)	Soil developed from in situ rock weathering. The mass structure and fabric are no longer evident. No significant transportation
Extremely Weathered (XW)	Rock weathered to such an extent that it has soil properties. Disintegrates or can be remoulded in water
Highly Weathered (HW)	Secondary minerals often weathered to clay. Staining of most grain boundaries and some disintegration due to weakening of grain bonds
Moderately Weathered (MW)	Staining and pitting of most secondary minerals and other grain boundaries. May be highly discoloured, often by iron staining
Slightly Weathered (SW)	Secondary minerals are stained but not pitted, slight staining at some grain boundaries. Little to no loss of strength from Fresh
Fresh (FR)	Rock shows no sign of decomposition or staining. Relatively strong

Rock Strength

Term (Symbol)	UCS (MPa)	$I_{s(50)}$ (MPa)	Field Identification
Very Low (VL)	0.6 to 2	> 0.03 to ≤ 0.1	Crumbles in hand. Peeled with knife. Pieces up to 3 cm thick can be broken by finger pressure
Low (L)	2 to 6	> 0.1 to ≤ 0.3	Easily scored with a knife. Sharp edges of core may be friable and break during handling
Medium (M)	6 to 20	> 0.3 to ≤ 1.0	Readily scored with a knife. Core 150 x 50 mm can be broken by hand with difficulty
High (H)	20 to 60	> 1 to ≤ 3	Core 150 x 50 mm cannot be broken by hand. Broken by a single firm pick blow. Rings under hammer
Very High (VH)	60 to 200	> 3 to ≤ 10	Hand specimen breaks with pick after more than one blow. Rings under hammer
Extremely High (EH)	> 200	> 10	Requires many pick blows to break intact material. Rings under hammer

Notes on rock strength:-

- These items refer to the rock material and not the strength of the rock mass which may be considerably weaker due to the effect of rock defects
- Anisotropy may affect assessment of strength

Rock Defect Descriptions

Defects are generally described in the following sequence:-

[Defect Spacing]; [Depth (m from surface), Defect Type, Defect Angle (° from horizontal), Planarity, Roughness, Aperture observation, Infill material, Aperture measurement (mm)]

Type	
BP	Bedding Parting
FL	Foliation Parting
CO	Contact
JT	Joint
SZ	Sheared Zone
SF	Sheared Surface
SS	Shear Seam
CS	Crushed Seam
XS	Extremely Weathered Seam
IS	Infill Seam

Planarity	
St	Stepped
Cu	Curved
Un	Undulating
Ir	Irregular
Pl	Planar

Aperture Observation	
cn	Clean
sn	Stained
vn	Veneer
cg	Coating (< 1 mm)

Small-Scale Roughness	
Ro	Rough
Sm	Smooth
Sl	Slickensided

Rock Laboratory Testing

Symbol	Description
SMC	Saturated moisture content
$I_{s(50)}D$	Point load strength index test (Diametal)
$I_{s(50)}A$	Point load strength index test (Axial)
UCS	Unconfined compressive strength test

Appendix B
Core photographs FSG-BH01 to FSG-BH09

FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH01

Sheet 1

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH02

Sheet 2

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

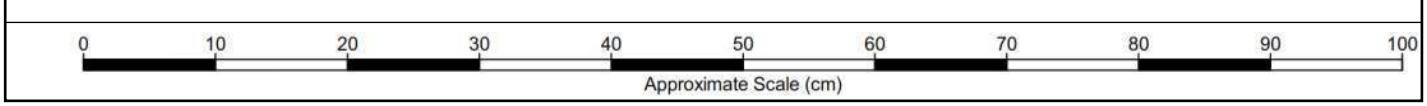
Core Photographs

FSG-BH03

Sheet 3

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote





FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH04

Sheet 4

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH05

Sheet 5

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH06

Sheet 6

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH07

Sheet 7

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

FSG GEOTECHNICS +FOUNDATIONS

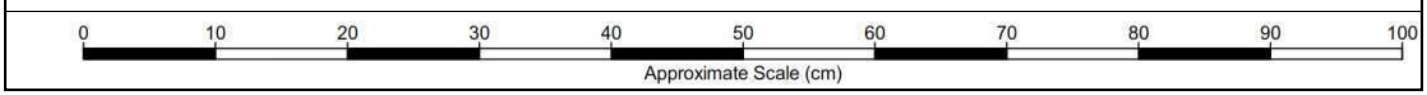
Core Photographs

FSG-BH08

Sheet 8

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote





FSG GEOTECHNICS +FOUNDATIONS

Core Photographs

FSG-BH09

Sheet 9

Date:	1/03/2022	**Project No.:**	4067	**Client:**	Northcote Devco Pty Ltd
Prepared by:	SYL	**Document:**	01	**Project:**	25 Separation Street
Checked by:	ALH	**Revision:**	A	**Location:**	Northcote



0 10 20 30 40 50 60 70 80 90 100

Approximate Scale (cm)

Appendix C
Laboratory test reports

Table C-1 Summary of laboratory testing undertaken on samples of weathered siltstone

Borehole	Depth (m bgl)	Elevation (AHD)	Saturated moisture content (%)	UCS (MPa)
FSG-BH01	7.1	41.1	16.3	2.1
	10.3	37.9	12	-
	11.0	37.2	11.4	1.8
	16.6	31.6	12.1	-
	18.15	30.0	6.3	17
	20.8	27.4	8.6	1.8
FSG-BH02	4.5	44.7	20.6	-
	6.4	42.8	21.6	2.0
	10.2	39.0	19.4	-
	13.25	36.0	14.4	0.47
	15.5	33.7	14.2	0.28
	19.5	29.7	8.8	3.3
	20.3	28.9	6.7	-
FSG-BH03	3.0	46.9	18.4	-
	4.0	45.9	16.8	-
	5.4	44.4	12.8	-
	7.0	42.9	14.6	-
	9.0	40.9	11.4	-
	9.7	40.2	-	2.9
	10.0	39.9	11	-
	11.8	38.0	11.6	6.4
	13.0	36.9	9.4	-
	14.7	35.2	9.2	6.5
	16.0	33.9	8.3	-
	17.7	32.1	10.9	-
FSG-BH04	2.5	46.9	14.3	-
	6.5	42.9	14.3	0.4
	9.1	40.4	11.9	-
	10.5	38.9	11.6	2.1
	13.8	35.6	10.5	1.6
	15.7	33.8	10	3.2
FSG-BH05	2.5	46.9	14	-
	5.2	44.2	14.3	-
	6.8	42.6	-	0.36
	8.8	40.6	14.9	-
	11.3	38.1	18.3	-

Borehole	Depth (m bgl)	Elevation (AHD)	Saturated moisture content (%)	UCS (MPa)
	12.6	36.8	13.4	1.6
	13.9	35.6	10	-
	17.0	32.4	-	2.1
FSG-BH06	3.1	46.3	16.5	-
	5.8	43.6	14.4	-
	9.1	40.4	14.7	-
	11.7	37.8	11.8	3.1
	14.1	35.3	13.9	0.26
	16.7	32.7	15.2	-
	19.6	29.8	11.3	0.74
FSG-BH07	7.4	45.1	9.9	3.2
	9.5	43.0	10.3	-
	11.0	41.5	11.5	-
	12.9	39.6	11.7	-
	14.7	37.8	9.9	2.7
	17.0	35.4	9.1	-
	18.9	33.6	7.6	-
FSG-BH08	3.0	46.2	15.6	-
	4.5	44.6	13.3	-
	7.6	41.5	12.2	1.2
	8.9	40.4	11.9	-
	10.0	39.2	10.2	-
	11.2	38.0	10.5	2.7
FSG-BH09	6.0	43.2	11.5	-
	7.5	41.7	10.2	0.57
	8.5	40.7	13.8	0.48
	10.0	39.2	11.3	-
	12.0	37.2	8.8	-
DP04	11.3	38.0	11.6	-
	13.5	35.8	7.5	-
	15.5	33.8	9.5	-
	16.9	32.4	8.1	-
DP08	8.2	41.2	15.5	-
	10.3	39.1	11.6	-
	15.3	34.1	8.8	-
	17.2	32.2	8.1	-
	19.7	29.7	7.2	-
DP02B	7.1	45.3	11.2	-

Borehole	Depth (m bgl)	Elevation (AHD)	Saturated moisture content (%)	UCS (MPa)
	7.9	44.5	10.9	-
	12.1	40.3	11.0	-
	13.3	39.1	12.8	-

Bamford Rock Testing Services

239 Arden Street, North Melbourne, Vic 3051 Australia
Telephone : (03) 9329 2818 email : tests@bamfordrocks.com.au ABN : 78 167 341 693

NATA Accredited Facility No. 19523 Accredited for compliance with ISO/IEC 17025 - Testing



REPORT 1609
ON
ROCK TESTING

(BRTS JOB NUMBER 1609)

Client : Time & Place Pty Ltd

Project : 25 Separation Street, Northcote

Reference : 4067

1st February, 2022

BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0059**
Sample no	**B22-0059**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH01 **Depth (m)** 10.30 - 10.45

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.3	mm	**Rate of Deformation**	0.08	mm/min	**Wet Density**	2.272	t/m^3
Length	130.3	mm	**Stress Rate**	2	kPa/s	**Dry Density**	2.028	t/m^3
L/D Ratio	2.6		**Test Duration**	18 Min 36 Sec		**Axial Load @ Failure**	4.3	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Axial cleavage.

TEST RESULTS

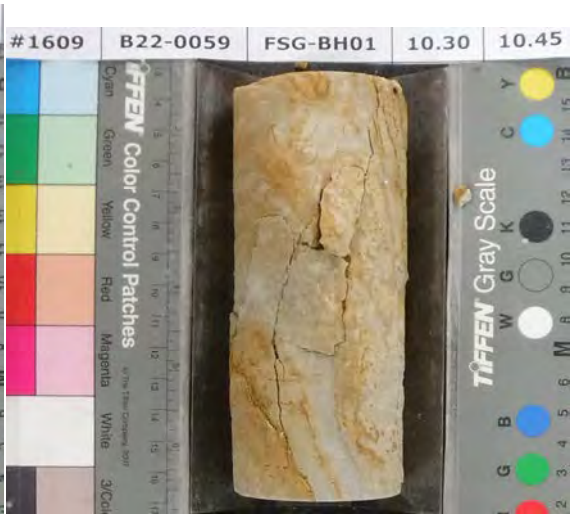
UCS	**2.1**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**12.0**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0062**
Sample no	**B22-0062**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH01 **Depth (m)** 18.15 - 18.30

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.3	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.425	**t/m^3**
Length	124.0	mm	**Stress Rate**	15	kPa/s	**Dry Density**	2.281	**t/m^3**
L/D Ratio	2.4		**Test Duration**	19 Min 20 Sec		**Axial Load @ Failure**	35.2	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

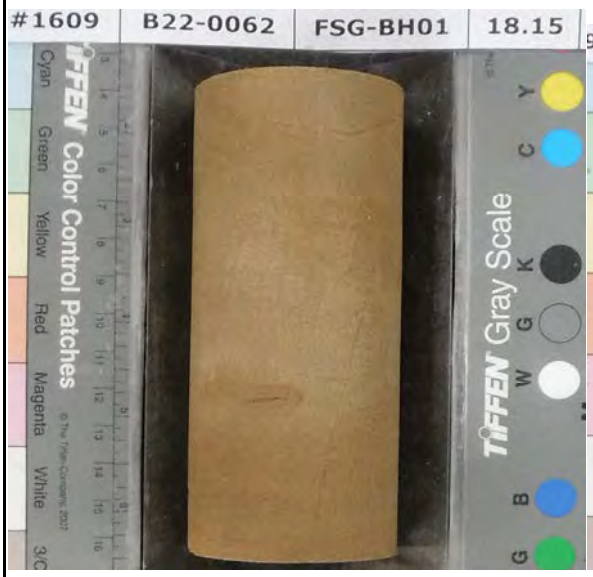
UCS	**17**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**6.3**	**%**

Failure Mode

Simple shear on bedding @ 23° to axis + Simple shear on defect @ 8° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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Bamford Rock Testing Services

NATA Accredited Facility No. 19523
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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0063**
Sample no	**B22-0063**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH01 **Depth (m)** 20.80 - 21.00

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.1	mm	**Rate of Deformation**	0.05	mm/min	**Wet Density**	2.346	**t/m^3**
Length	124.1	mm	**Stress Rate**	2	kPa/s	**Dry Density**	2.160	**t/m^3**
L/D Ratio	2.4		**Test Duration**	18 Min 16 Sec		**Axial Load @ Failure**	3.7	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**1.8**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**8.6**	**%**

Failure Mode

Simple shear on bedding @ 19° to axis .

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0067**
Sample no	**B22-0067**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH02 **Depth (m)** 13.25 - 13.40

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.1	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.214	t/m^3
Length	120.2	mm	**Stress Rate**	1	kPa/s	**Dry Density**	1.936	t/m^3
L/D Ratio	2.4		**Test Duration**	15 Min 23 Sec		**Axial Load @ Failure**	0.9	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

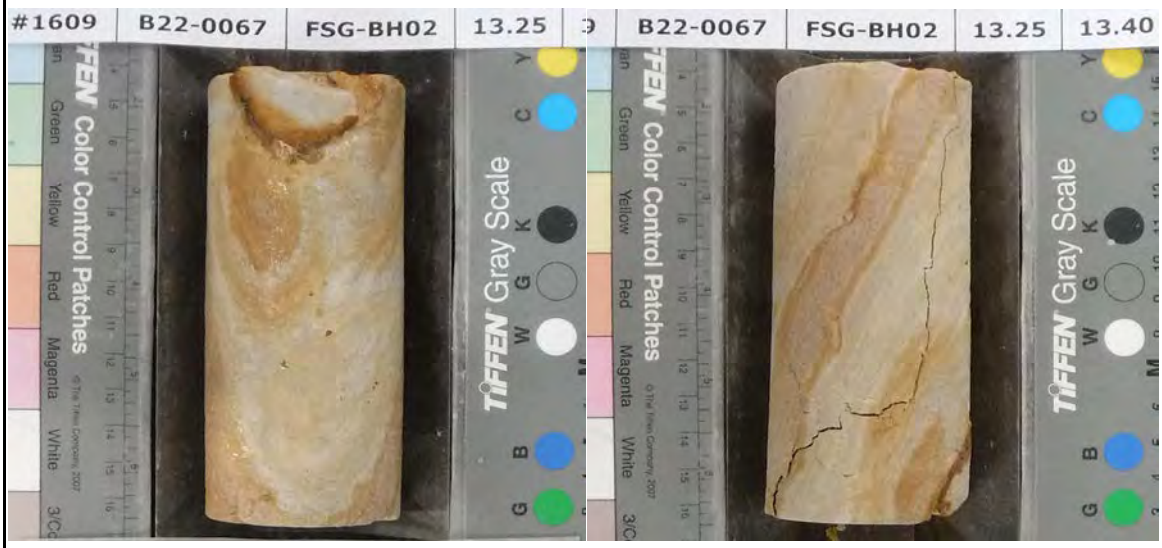
UCS	**0.47**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**14.4**	**%**

Failure Mode

Axial cleavage.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test **After Test**

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0068**
Sample no	**B22-0068**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH02 **Depth (m)** 15.50 - 15.65

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.2	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.206	t/m^3
Length	128.5	mm	**Stress Rate**	0.3	kPa/s	**Dry Density**	1.932	t/m^3
L/D Ratio	2.5		**Test Duration**	13 Min 56 Sec		**Axial Load @ Failure**	0.6	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**0.28**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**14.2**	**%**

Failure Mode

Simple shear on bedding @ 36° to axis + Simple shear on defect @ 28° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0069**
Sample no	**B22-0069**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH02 **Depth (m)** 19.53 - 19.69

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.5	mm	**Rate of Deformation**	0.05	mm/min	**Wet Density**	2.458	**t/m^3**
Length	122.5	mm	**Stress Rate**	4	kPa/s	**Dry Density**	2.259	**t/m^3**
L/D Ratio	2.4		**Test Duration**	15 Min 13 Sec		**Axial Load @ Failure**	6.6	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**3.3**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**8.8**	**%**

Failure Mode

Simple shear through rock substance @ 35° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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Bamford Rock Testing Services

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0076**
Sample no	**B22-0076**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, AS, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH03 **Depth (m)** 9.70 - 9.85

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.9	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.351	t/m^3
Length	108.4	mm	**Stress Rate**	3	kPa/s	**Dry Density**	-	t/m^3
L/D Ratio	2.1		**Test Duration**	17 Min 6 Sec		**Axial Load @ Failure**	6.0	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**2.9**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**Saturated**	

Failure Mode

Simple shear on bedding @ 19° to axis + Axial cleavage.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

NATA ACCREDITED FOR TECHNICAL COMPETENCE

BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0078**
Sample no	**B22-0078**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH03 **Depth (m)** 11.85 - 12.00

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.2	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.360	**t/m^3**
Length	139.2	mm	**Stress Rate**	6	kPa/s	**Dry Density**	2.115	**t/m^3**
L/D Ratio	2.7		**Test Duration**	17 Min 28 Sec		**Axial Load @ Failure**	13.2	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**6.4**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**11.6**	**%**

Failure Mode

Axial cleavage.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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NATA Accredited Facility No. 19523
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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0080**
Sample no	**B22-0080**
Client No.	**C124**
Date	01-Feb-22
Date Tested	27-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH03 **Depth (m)** 14.72 - 14.87

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.0	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.377	t/m^3
Length	132.6	mm	**Stress Rate**	7	kPa/s	**Dry Density**	2.177	t/m^3
L/D Ratio	2.6		**Test Duration**	16 Min 5 Sec		**Axial Load @ Failure**	13.4	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

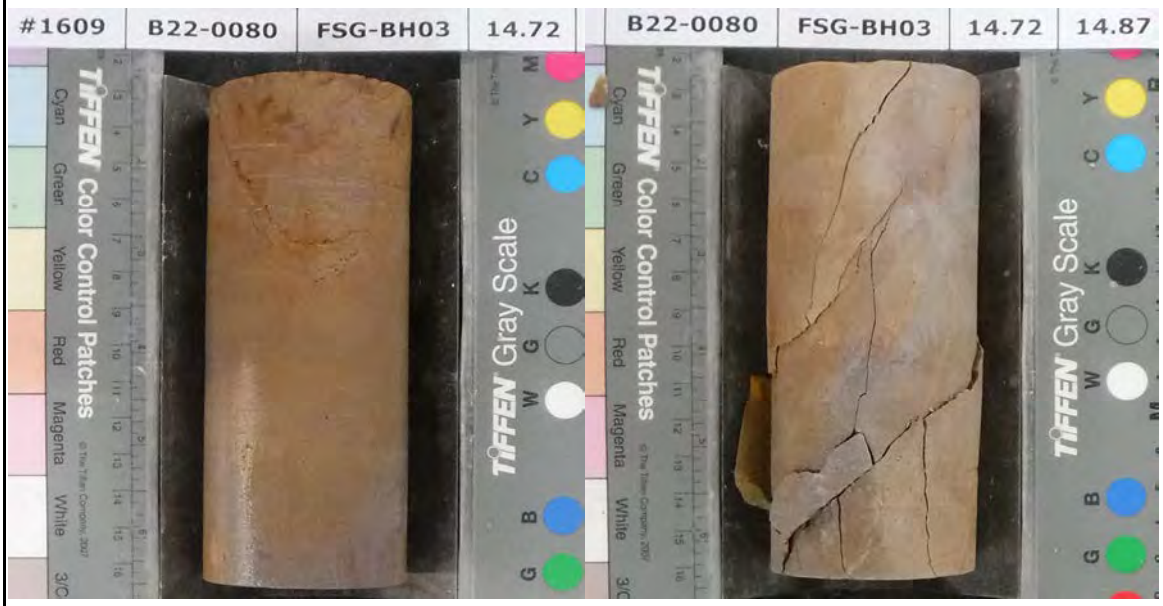
Axial cleavage + Simple shear on bedding @ 24° to axis.

TEST RESULTS

UCS	**6.5**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**9.2**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test **After Test**

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0084**
Sample no	**B22-0084**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH04 **Depth (m)** 6.50 - 6.75

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.0	mm	**Rate of Deformation**	2.00	mm/min	**Wet Density**	2.222	t/m^3
Length	137.5	mm	**Stress Rate**	19	kPa/s	**Dry Density**	1.944	t/m^3
L/D Ratio	2.7		**Test Duration**	0 Min 21 Sec		**Axial Load @ Failure**	0.8	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Axial cleavage + Simple shear on bedding @ 27° to axis.

TEST RESULTS

UCS	**0.40**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**14.3**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0086**
Sample no	**B22-0086**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH04 **Depth (m)** 10.50 - 10.75

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.1	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.308	**t/m^3**
Length	137.9	mm	**Stress Rate**	3	kPa/s	**Dry Density**	2.068	**t/m^3**
L/D Ratio	2.7		**Test Duration**	13 Min 31 Sec		**Axial Load @ Failure**	4.3	**kN**

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear on bedding @ 10° to axis.

TEST RESULTS

UCS	**2.1**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**11.6**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0087**
Sample no	**B22-0087**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH04 **Depth (m)** 13.80 - 14.00

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.3	mm	**Rate of Deformation**	0.20	mm/min	**Wet Density**	2.311	**t/m^3**
Length	138.4	mm	**Stress Rate**	7	kPa/s	**Dry Density**	2.091	**t/m^3**
L/D Ratio	2.7		**Test Duration**	3 Min 38 Sec		**Axial Load @ Failure**	3.2	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**1.6**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**10.5**	**%**

Failure Mode

Simple shear on bedding @ 15° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0088**
Sample no	**B22-0088**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH04 **Depth (m)** 15.67 - 15.97

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.5	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.344	**t/m^3**
Length	137.6	mm	**Stress Rate**	4	kPa/s	**Dry Density**	2.131	**t/m^3**
L/D Ratio	2.7		**Test Duration**	14 Min 24 Sec		**Axial Load @ Failure**	6.6	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**3.2**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**10.0**	**%**

Failure Mode

Simple shear on bedding @ 24° to axis + Simple shear on defect @ 32° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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Lab Manager

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0093**
Sample no	**B22-0093**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH05 **Depth (m)** 12.60 - 12.78

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.6	mm	**Rate of Deformation**	0.09	mm/min	**Wet Density**	2.277	**t/m^3**
Length	135.8	mm	**Stress Rate**	2	kPa/s	**Dry Density**	2.008	**t/m^3**
L/D Ratio	2.7		**Test Duration**	14 Min 49 Sec		**Axial Load @ Failure**	3.1	**kN**

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear through rock substance @ 41° to axis + Axial cleavage.

TEST RESULTS

UCS	**1.6**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**13.4**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0095**
Sample no	**B22-0095**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH05 **Depth (m)** 17.00 - 17.20

SAMPLE DETAILS			TESTING DETAILS					
Diameter	49.6	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.643	**t/m^3**
Length	135.1	mm	**Stress Rate**	3	kPa/s	**Dry Density**	-	**t/m^3**
L/D Ratio	2.7		**Test Duration**	12 Min 37 Sec		**Axial Load @ Failure**	4.0	**kN**

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear on bedding @ 20° to axis.

TEST RESULTS

UCS	**2.1**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**Saturated**	

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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Director

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Lab Manager

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0099**
Sample no	**B22-0099**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH06 **Depth (m)** 11.66 - 11.81

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.7	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.269	**t/m^3**
Length	134.0	mm	**Stress Rate**	1	kPa/s	**Dry Density**	2.029	**t/m^3**
L/D Ratio	2.6		**Test Duration**	13 Min 40 Sec		**Axial Load @ Failure**	2.2	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

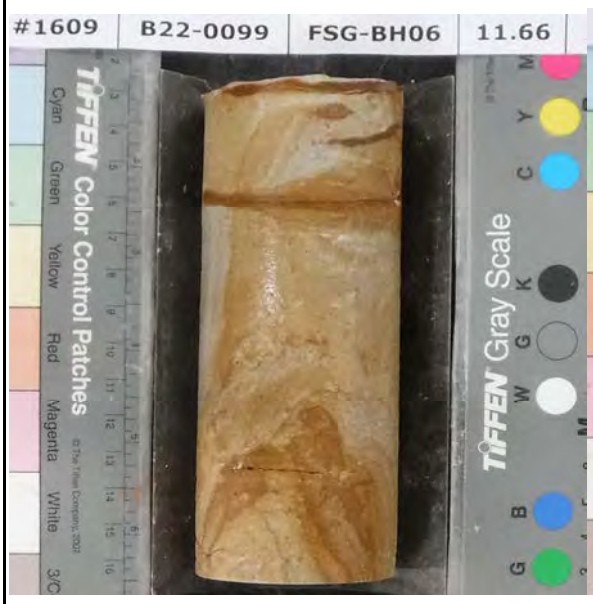
UCS	**1.1**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**11.8**	**%**

Failure Mode

Axial cleavage.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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X Dr D. Palamakumbure
Lab Manager

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0100**
Sample no	**B22-0100**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH06 **Depth (m)** 14.10 - 14.30

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.1	mm	**Rate of Deformation**	0.05	mm/min	**Wet Density**	2.230	t/m^3
Length	91.8	mm	**Stress Rate**	0.4	kPa/s	**Dry Density**	1.958	t/m^3
L/D Ratio	1.8	*	**Test Duration**	10 Min 28 Sec		**Axial Load @ Failure**	0.5	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear on bedding @ 28° to axis + Axial cleavage.

TEST RESULTS

UCS	**0.26**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**13.9**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

Note: L/D Ratio as tested is less than the "standard" ratio of 2.0

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0102**
Sample no	**B22-0102**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH06 **Depth (m)** 19.63 - 19.82

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.0	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.330	t/m^3
Length	133.6	mm	**Stress Rate**	1	kPa/s	**Dry Density**	2.094	t/m^3
L/D Ratio	2.7		**Test Duration**	13 Min 27 Sec		**Axial Load @ Failure**	1.4	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

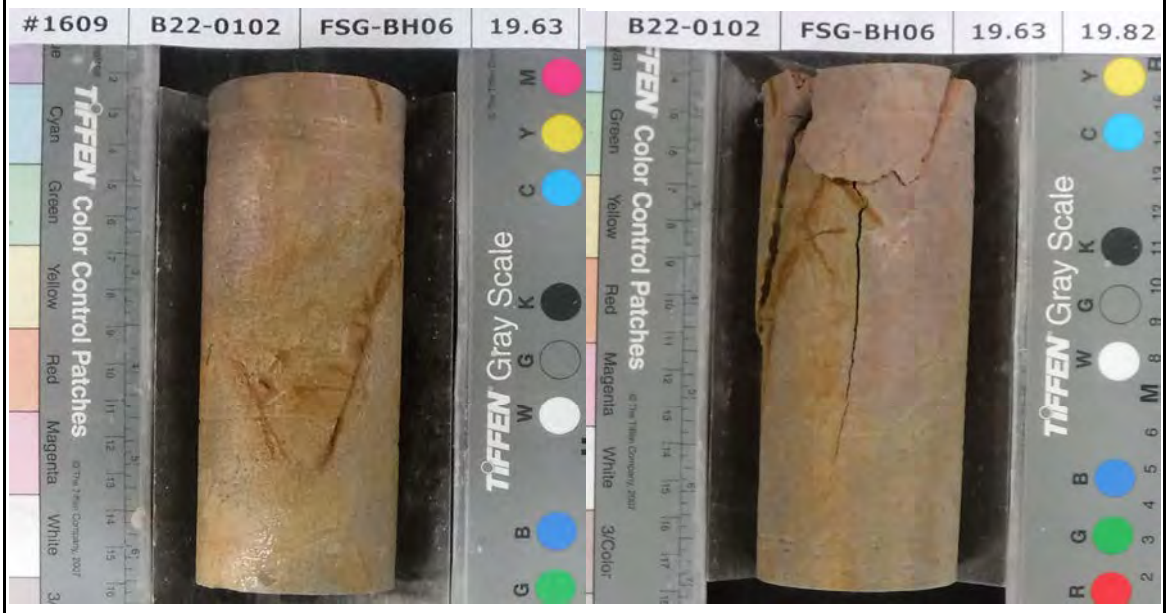
Axial cleavage + Simple shear on bedding @ 21° to axis.

TEST RESULTS

UCS	**0.74**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**11.3**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test **After Test**

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0106**
Sample no	**B22-0106**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH08 **Depth (m)** 7.65 - 7.80

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.5	mm	**Rate of Deformation**	0.09	mm/min	**Wet Density**	2.282	t/m^3
Length	132.6	mm	**Stress Rate**	1	kPa/s	**Dry Density**	2.034	t/m^3
L/D Ratio	2.6		**Test Duration**	13 Min 31 Sec		**Axial Load @ Failure**	2.4	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

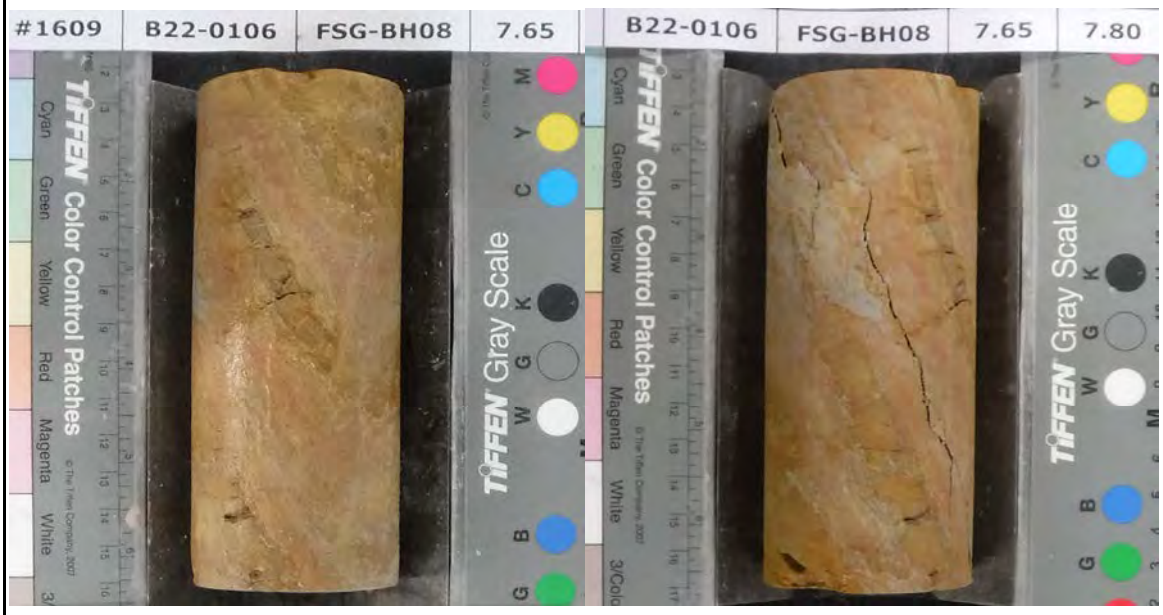
UCS	**1.2**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**12.2**	**%**

Failure Mode

Simple shear on bedding @ 25° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test **After Test**

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0109**
Sample no	**B22-0109**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH08 **Depth (m)** 11.20 - 11.35

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.5	mm	**Rate of Deformation**	0.08	mm/min	**Wet Density**	2.338	t/m^3
Length	133.9	mm	**Stress Rate**	3	kPa/s	**Dry Density**	2.116	t/m^3
L/D Ratio	2.6		**Test Duration**	13 Min 10 Sec		**Axial Load @ Failure**	5.7	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear on bedding @ 27° to axis + Axial cleavage.

TEST RESULTS

UCS	**2.7**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**10.5**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0112**
Sample no	**B22-0112**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH09 **Depth (m)** 7.45 - 7.60

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.5	mm	**Rate of Deformation**	0.09	mm/min	**Wet Density**	2.305	t/m^3
Length	115.3	mm	**Stress Rate**	1	kPa/s	**Dry Density**	2.092	t/m^3
L/D Ratio	2.2		**Test Duration**	12 Min 40 Sec		**Axial Load @ Failure**	1.2	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

Simple shear on bedding @ 10° to axis.

TEST RESULTS

UCS	**0.57**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**10.2**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

NATA ACCREDITED FOR TECHNICAL COMPETENCE

BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0113**
Sample no	**B22-0113**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH09 **Depth (m)** 8.50 - 8.65

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.7	mm	**Rate of Deformation**	0.11	mm/min	**Wet Density**	2.252	**t/m^3**
Length	76.0	mm	**Stress Rate**	1	kPa/s	**Dry Density**	1.979	**t/m^3**
L/D Ratio	**1.5**	*	**Test Duration**	14 Min 5 Sec		**Axial Load @ Failure**	1.0	**kN**

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**0.48**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**13.8**	**%**

Failure Mode

Axial cleavage.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

Note: L/D Ratio as tested is less than the "standard" ratio of 2.0

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

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Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
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UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0222**
Sample no	**B22-0222**
Client No.	**C124**
Date	01-Feb-22
Date Tested	28-Jan-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd **Reference** 4067
Project 25 Separation Street, Northcote
Location Northcote

Lithology Siltstone
Borehole FSG-BH05 **Depth (m)** 6.80 - 7.00

SAMPLE DETAILS			TESTING DETAILS					
Diameter	50.3	mm	**Rate of Deformation**	0.07	mm/min	**Wet Density**	2.203	t/m^3
Length	125.5	mm	**Stress Rate**	1	kPa/s	**Dry Density**	-	t/m^3
L/D Ratio	2.5		**Test Duration**	11 Min 19 Sec		**Axial Load @ Failure**	0.7	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**0.36**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**Saturated**	

Failure Mode

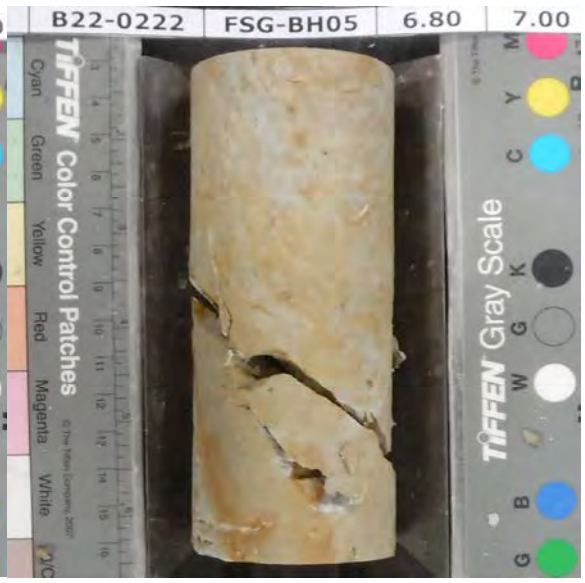
Simple shear on defect @ 48° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X Dr W.E. Bamford
Director

X Dr D. Palamakumbure
Lab Manager

NATA ACCREDITED FOR TECHNICAL COMPETENCE

BRTS
Bamford Rock Testing Services

239 ARDEN STREET, NORTH MELBOURNE, 3051 AUSTRALIA
NATA Accredited Facility No. 19523

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Test Request No. : 1609
Date Received: 14 January 2022
Client: Time & Place Pty Ltd
Project: 25 Separation Street, Northcote
Location: Northcote
Reference: 4067

AS 4133.1.1.1: Rock moisture content tests

					SATURATED - samples were saturated under partial vacuum for 24hrs.
BRTS Sample Number	Lithology	Borehole	Depth from (m)	Depth to (m)	**Moisture content (%)**
B22-0058	Siltstone	FSG-BH01	7.10	7.20	**16.3**
B22-0059	Siltstone	FSG-BH01	10.30	10.45	**12.0**
B22-0060	Siltstone	FSG-BH01	11.00	11.10	**11.4**
B22-0061	Siltstone	FSG-BH01	16.60	16.71	**12.1**
B22-0062	Siltstone	FSG-BH01	18.15	18.30	**6.3**
B22-0063	Siltstone	FSG-BH01	20.80	21.00	**8.6**
B22-0064	Siltstone	FSG-BH02	4.50	4.65	**20.6**
B22-0065	Siltstone	FSG-BH02	6.40	6.60	**21.6**
B22-0066	Siltstone	FSG-BH02	10.20	10.30	**19.4**
B22-0067	Siltstone	FSG-BH02	13.25	13.40	**14.4**
B22-0068	Siltstone	FSG-BH02	15.50	15.65	**14.2**
B22-0069	Siltstone	FSG-BH02	19.53	19.69	**8.8**
B22-0070	Siltstone	FSG-BH02	20.27	20.43	**6.7**
B22-0071	Siltstone	FSG-BH03	3.00	3.10	**18.4**
B22-0072	Siltstone	FSG-BH03	4.00	4.10	**16.8**
B22-0073	Siltstone	FSG-BH03	5.45	5.60	**12.8**
B22-0074	Siltstone	FSG-BH03	7.00	7.10	**14.6**
B22-0075	Siltstone	FSG-BH03	9.00	9.10	**11.4**
B22-0077	Siltstone	FSG-BH03	10.00	10.10	**11.0**
B22-0078	Siltstone	FSG-BH03	11.85	12.00	**11.6**

Date Tested: 21/01/2022

X
Dr W.E. Bamford
Director

X
Dr D. Palamakumbure
Lab Manager

BRTS
Bamford Rock Testing Services

239 ARDEN STREET, NORTH MELBOURNE, 3051 AUSTRALIA
NATA Accredited Facility No. 19523

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Test Request No. : 1609
Date Received: 14 January 2022
Client: Time & Place Pty Ltd
Project: 25 Separation Street, Northcote
Location: Northcote
Reference: 4067

AS 4133.1.1.1: Rock moisture content tests

					SATURATED - samples were saturated under partial vacuum for 24hrs.
BRTS Sample Number	Lithology	Borehole	Depth from (m)	Depth to (m)	**Moisture content (%)**
B22-0079	Siltstone	FSG-BH03	13.00	13.10	**9.4**
B22-0080	Siltstone	FSG-BH03	14.72	14.87	**9.2**
B22-0081	Siltstone	FSG-BH03	16.00	16.10	**8.3**
B22-0082	Siltstone	FSG-BH03	17.75	17.90	**10.9**
B22-0083	Siltstone	FSG-BH04	2.50	2.60	**14.3**
B22-0084	Siltstone	FSG-BH04	6.50	6.75	**14.3**
B22-0085	Siltstone	FSG-BH04	9.06	9.12	**11.9**
B22-0086	Siltstone	FSG-BH04	10.50	10.75	**11.6**
B22-0087	Siltstone	FSG-BH04	13.80	14.00	**10.5**
B22-0088	Siltstone	FSG-BH04	15.67	15.97	**10.0**
B22-0089	Siltstone	FSG-BH05	2.53	2.60	**14.0**
B22-0090	Siltstone	FSG-BH05	5.22	5.32	**14.3**
B22-0091	Siltstone	FSG-BH05	8.85	9.00	**14.9**
B22-0092	Siltstone	FSG-BH05	11.35	11.48	**18.3**
B22-0093	Siltstone	FSG-BH05	12.60	12.78	**13.4**
B22-0094	Siltstone	FSG-BH05	13.86	14.00	**10.0**
B22-0096	Siltstone	FSG-BH06	3.10	3.25	**16.5**
B22-0097	Siltstone	FSG-BH06	5.85	6.00	**14.4**
B22-0098	Siltstone	FSG-BH06	9.06	9.18	**14.7**
B22-0099	Siltstone	FSG-BH06	11.66	11.81	**11.8**

Date Tested: 21/01/2022

X
Dr W.E. Bamford
Director

X
Dr D. Palamakumbure
Lab Manager

BRTS
Bamford Rock Testing Services

239 ARDEN STREET, NORTH MELBOURNE, 3051 AUSTRALIA
NATA Accredited Facility No. 19523

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Test Request No. : 1609
Date Received: 14 January 2022
Client: Time & Place Pty Ltd
Project: 25 Separation Street, Northcote
Location: Northcote
Reference: 4067

AS 4133.1.1.1: Rock moisture content tests

					SATURATED - samples were saturated under partial vacuum for 24hrs.
BRTS Sample Number	Lithology	Borehole	Depth from (m)	Depth to (m)	**Moisture content (%)**
B22-0100	Siltstone	FSG-BH06	14.10	14.30	**13.9**
B22-0101	Siltstone	FSG-BH06	16.70	16.80	**15.2**
B22-0102	Siltstone	FSG-BH06	19.63	19.82	**11.3**
B22-0103	Siltstone	FSG-BH08	3.00	3.10	**15.6**
B22-0104	Siltstone	FSG-BH08	4.55	4.70	**13.3**
B22-0106	Siltstone	FSG-BH08	7.65	7.80	**12.2**
B22-0107	Siltstone	FSG-BH08	8.85	9.00	**11.9**
B22-0108	Siltstone	FSG-BH08	10.00	10.10	**10.2**
B22-0109	Siltstone	FSG-BH08	11.20	11.35	**10.5**
B22-0111	Siltstone	FSG-BH09	6.00	6.10	**11.5**
B22-0112	Siltstone	FSG-BH09	7.45	7.60	**10.2**
B22-0113	Siltstone	FSG-BH09	8.50	8.65	**13.8**
B22-0114	Siltstone	FSG-BH09	10.00	10.10	**11.3**
B22-0115	Siltstone	FSG-BH09	12.00	12.10	**8.8**

Date Tested: 21/01/2022

X
Dr W.E. Bamford
Director

X
Dr D. Palamakumbure
Lab Manager

BRTS

Bamford Rock Testing Services

239 Arden Street, North Melbourne, Vic 3051 Australia
Telephone : (03) 9329 2818 email : tests@bamfordrocks.com.au ABN : 78 167 341 693

NATA Accredited Facility No. 19523 Accredited for compliance with ISO/IEC 17025 - Testing

ACCREDITED FOR TECHNICAL COMPETENCE

REPORT 1644
ON
ROCK TESTING

(BRTS JOB NUMBER 1644)

Client : Time & Place Pty Ltd

Project : 25 Separation Street – Northcote

Reference : 4067

21st February, 2022

BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0339**
Sample no	**B22-0339**
Client No.	**C124**
Date	21-Jan-22
Date Tested	18-Feb-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd
Project 25 Separation Street
Location Northcote
Reference 4067

Lithology Siltstone
Borehole FSG-BH07
Depth (m) 7.42 - 7.63

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.0	mm	**Rate of Deformation**	0.05	mm/min	**Wet Density**	2.380	t/m³
Length	134.9	mm	**Stress Rate**	4	kPa/s	**Dry Density**	2.166	t/m³
L/D Ratio	2.6		**Test Duration**	13 Min 40 Sec		**Axial Load @ Failure**	6.5	kN

Testing Machine: ECT-300EDC 50 kN

TEST RESULTS

UCS	**3.2**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**9.9**	**%**

Failure Mode

Axial cleavage + Simple shear on bedding @ 8° to axis.

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X _____
Dr W.E. Bamford
Director

X _____
Dr D. Palamakumbure
Lab Manager

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

BRTS
Bamford Rock Testing Services

NATA Accredited Facility No. 19523
239 Arden St, North Melbourne VIC 3051
Ph: (03) 9329 2818

UNIAXIAL COMPRESSIVE STRENGTH
AS 4133.4.2.2

Report no	**C124-0343**
Sample no	**B22-0343**
Client No.	**C124**
Date	21-Jan-22
Date Tested	18-Feb-22
Tested by	VG, JC
Checked by	AS

Client Time & Place Pty Ltd
Project 25 Separation Street
Location Northcote
Reference 4067

Lithology Siltstone
Borehole FSG-BH07
Depth (m) 14.66 - 14.86

SAMPLE DETAILS			TESTING DETAILS					
Diameter	51.7	mm	**Rate of Deformation**	0.06	mm/min	**Wet Density**	2.321	t/m^3
Length	134.7	mm	**Stress Rate**	2	kPa/s	**Dry Density**	2.112	t/m^3
L/D Ratio	2.6		**Test Duration**	21 Min 1 Sec		**Axial Load @ Failure**	5.6	kN

Testing Machine: ECT-300EDC 50 kN

Failure Mode

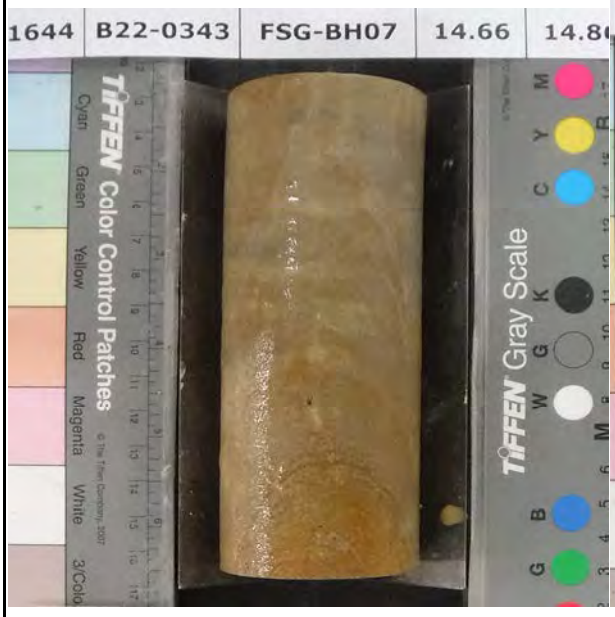
Simple shear on bedding @ 22° to axis.

TEST RESULTS

UCS	**2.7**	**MPa**
Young's modulus E	-	**GPa**
Poisson's ratio (v)	-	
Moisture Content	**9.9**	**%**

Sample Storage Comments

Sample was left wrapped in plastic, as received, until removed for specimen preparation.
Then saturated in water tank, under partial vacuum, for 24 hours.
Then placed in a sealed plastic bag, with 100 ml of water added, until tested.



Before Test



After Test

References

Failure Mode: AS 4133.4.3.2- 2013
Moisture Content: AS 4133.1.1.1 - 2005

Approved by :

X
Dr W.E. Bamford
Director

X
Dr D. Palamakumbure
Lab Manager

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

BRTS
Bamford Rock Testing Services

239 ARDEN STREET, NORTH MELBOURNE, 3051 AUSTRALIA
NATA Accredited Facility No. 19523

NATA
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Test Request No. : 1644
Date Received: 3 February 2022
Client: Time & Place Pty Ltd
Project: 25 Separation Street
Location: Northcote
Reference: 4067

AS 4133.1.1.1: Rock moisture content tests

					SATURATED - saturated for 24 hours under partial vacuum.
BRTS Sample Number	Lithology	Borehole	Depth from (m)	Depth to (m)	**Moisture content (%)**
B22-0339	Siltstone	FSG-BH07	7.42	7.63	**9.9**
B22-0340	Siltstone	FSG-BH07	9.54	9.64	**10.3**
B22-0341	Siltstone	FSG-BH07	11.00	11.15	**11.5**
B22-0342	Siltstone	FSG-BH07	12.90	13.00	**11.7**
B22-0343	Siltstone	FSG-BH07	14.66	14.86	**9.9**
B22-0344	Siltstone	FSG-BH07	17.05	17.15	**9.1**
B22-0345	Siltstone	FSG-BH07	18.90	19.00	**7.6**

Date Tested: 16/02/2022 - 21/02/2022

X
Dr W.E. Bamford
Director

X
Dr Darshika Palamakumbure
Lab Manager

Appendix D
Important information about your FSG report

Important information about your FSG report

Deep foundation and geotechnical engineering problems are a principal cause of construction delays, cost overruns, claims and disputes. The following information is provided to help you to understand this report and its limitations and manage your risks.

Scope and applicability of this report

This report has been prepared for a specific purpose and scope and its applicability is limited. FSG cannot accept any responsibility for the use of this report outside of the stated scope and purpose. If a service has not been explicitly included in the scope, it must be assumed that it has not been provided. Assessment of soil or groundwater contamination does not form part of this geotechnical report and any reference to any potential site contamination is for information only. If you are uncertain about the applicability of the results for any particular purpose, you should consult FSG to avoid any misunderstanding or miss-application.

This report has been prepared for the nominated Client and project only and should not be relied upon by other parties, or for other purposes, without consulting FSG. Any party relying on this report beyond its specific purpose and scope does so entirely at their own risk and responsibility. FSG does not take responsibility for the use of this document by any other person or party than the Client.

Project details and information provided

This report has been based on project details as provided to us at the time of the commission. We have assumed that the information supplied to FSG by the client or other external sources on behalf of the client, is correct unless explicitly stated so. FSG does not accept any responsibility for incomplete or inaccurate data provided by others.

If any project details change during the course of the project or observed conditions are considered to differ from those expected or assumed, FSG should be notified in order to investigate if and how changes in project details affect the conclusions and recommendations in our report. If FSG is not consulted when changes are made to the initial project details, we cannot accept any responsibility for problems arising from these changes.

Geotechnical information and interpretation

Site investigations only sample discrete parts of the ground, and that extrapolation and interpolation of collected information can be used with varying degrees of risk and uncertainty depending on the extent and quality of the site investigation, the variability of the subsurface conditions and the consequences to the proposed works.

The analyses and recommendations in this report rely on the results of site investigation information, and other reported geotechnical information that is relevant to the works. This may include the results of pile load testing, other geotechnical testing, and inspections and observations from studies that have been performed as part of the works or in the vicinity of the works previously.

We have endeavoured to incorporate the available information into an appropriate geotechnical model based on our interpretation of the likely subsurface conditions. This process, and the geotechnical analysis and interpretation based on that model, is an inexact science, as a model is but a simplification of reality to derive a geotechnical solution. While we endeavour to incorporate realistic model parameters, our models, interpretations and the outcomes or our work generally may differ from reality for a range of reasons including:

- Spatial variability: Geotechnical and geological variability across the site which may not have been captured in the site investigation works that have been used in our works. Geotechnical site investigations are very limited in the extent of physical investigation compared to the size of the entire site. No site investigation, no matter how comprehensive, can reveal all subsurface details and anomalies and conditions that differ from those observed in the site investigation will occur;
- Temporal variability: Subsurface conditions can change with time due to man-made events such as cutting or filling or any construction works on or adjacent to the site which can also affect the site drainage and hence underlying properties; or by natural events such as floods or groundwater fluctuations.
- Variability in mechanical properties: Normal geotechnical variability in the inferred properties of materials represented in the boreholes, the performance of foundations or other elements that are tested or observed, and the performance of structures that are in contact with the ground in general. The data collected is only directly relevant to the exact location where the investigation was undertaken. The subsurface conditions between test locations have been inferred based on judgement and experience with the facts available at that time and related to the relative position of the proposed works;
- Testing limitations: Uncertainty associated with geotechnical testing, design correlations associated with those tests or material descriptions, and case histories from which geotechnical parameters may have been inferred or in design and/or analysis methods that have been adopted;
- Construction effects: Variability in the performance of construction equipment, such as hammers, cushions, guides and associated equipment for piling, construction effects that may influence the way structures interact with the ground, as well as inaccuracies in data measurement and testing methods that may have been used to record construction processes.

The results provided should be considered as indicative of the best estimate of likely outcomes (or range thereof), and should not be considered to be definitive or absolute, or represent the full range of possible outcomes at this site. Caution and prudence should be exercised when making decisions with significant implications for your project. The limitations of this report as outlined herein should be incorporated in decision making, and appropriate contingencies should be put in place to accommodate unexpected variability in relation to the works.

Geotechnical modelling

Model parameters that are used may vary in nature depending on the purpose of the analysis. Where it is necessary to make a realistic evaluation of the soil model, we would normally describe this as a 'best estimate' (BE). Depending on the particular application, it may be important to understand the sensitivity of the solution to soil model changes. We may then also define an 'upper-bound' (UB) soil model and a 'lower-bound' soil model, being estimates of the likely, strongest and weakest soil conditions which are anticipated based on the available geotechnical information and inferred geotechnical parameters. In certain circumstances, such as cases where the ground conditions appear to extremely uncertain or variable, we may also define 'extreme upper bound' (XUB) and 'extreme lower bound' (XLB) parameters which are intended to represent the likely extremes of the site conditions. In all cases, these models are inferred using engineering judgement from the available information and actual conditions and associated outcomes may differ from those assumed or given in our report, due to the inherent unpredictability of the ground, as outlined in the preceding section.

It should be noted that depending on the particular application either upper-bound or lower-bound analyses could be deemed conservative.

Disclaimer

The results, opinions, conclusions and any recommendations in this report are based on assumptions made by FSG in order to carry out the work. FSG specifically disclaims responsibility: arising from, or in connection with, any change to the site conditions or the nature of the proposed works including change in position of the structure or proposed works relative to the available data; to update this report if the site conditions or project details change or if the report is used after a protracted delay; and for liability arising from any of the assumptions that have been made or information provided being incorrect, incomplete or inaccurate.

Subject to the terms of an Agreement for Professional Services between FSG and the client, and to the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by FSG and this report are excluded.

Closure

Unless otherwise documented by way of a signed agreement for the services provided, all services in preparing this report have been provided under FSG's standard Terms and Conditions which are referenced in our fee proposal. The report is specific to the brief provided with its associated time and cost constraints.

Should you require any further information or clarification in relation to this report, please contact FSG.

Compass Environmental Pty Ltd ABN: 29 938 692 270
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Ryan O'Sullivan
Project Manager
TIME & PLACE
Level 26, 35 Collins Street
Melbourne VIC 3000
ryan.osullivan@timeplace.com.au

20 September 2022

Dear Ryan,

SUMMARY OF COMPLETED ENVIRONMENTAL INVESTIGATIONS: 25 SEPARATION STREET, NORTHCOTE VIC 3070 (VCAT REFERENCE: P782/2021)

This letter provides a brief summary of the status of environmental investigations completed at Northcote Plaza, 25 Separation Street, Northcote VIC ("the site"). The site extent and sampling locations to date are shown in **Figure 1** attached. Compass Environmental have been appointed as the environmental assessor, with Peter Mirkov from Peraco appointed as the Environmental Auditor for the site.

The following letter provides a brief summary of the investigations to date.

1 Overview of Completed Environmental Investigations

Previous environmental works have been completed at the site, as detailed in the following reports:

- Douglas Partners 2021a. *Preliminary Site Investigation for Contamination, 25 Separation Street, Northcote*. Prepared for River Street Developments Pty Ltd, dated February 2021.
- Douglas Partners 2021b. *Limited Detailed Site Investigation (Contamination), 25 Separation Street, Northcote.* Prepared for Northcote Devco Pty Ltd, dated 02 August 2021.
- FSG Geotechnics. *Northcote Plaza, 25 Separation Street, Northcote, Preliminary Geotechnical Investigation*, dated 11 March 2022.

More recently Compass Environmental completed further groundwater and landfill gas investigations of the existing bores and summarised the previous investigations completed. These works were detailed in report titled *Summary of Previous Works and Work Plan For Further Environmental Investigation: Northcote Plaza, 25 Separation Street, Northcote VIC*, issued on 12 May 2022. A copy of this report is provided in **Attachment A** and provides a detailed overview of site conditions at the time of reporting.

More recently Compass Environmental have completed a higher density of soil investigations at the site, with the installation of 11 soil bores (B1-B10, and GW3), eight landfill gas bores (LFG1-LFG8) and five groundwater monitoring wells (GW1, GW2, GW3A, GW4 and GW5), with these works currently ongoing. The new locations are detailed in **Figure 1** attached, bore logs are provided in **Attachment B**, tabulated soil results against off-site disposal criteria are provided in **Attachment C**, and laboratory reports are provided in **Attachment D**. These works will be detailed in future reporting when all works have been completed.

We have also included updated Draft cross sections based on the further investigations, refer to **Figure 2** and **3**. Please note these cross sections are not finalised and are indicative only.

2 Limitations

The services performed by Compass Environmental have been conducted in a manner consistent with the level of quality and skill generally exercised by the consulting profession. Compass Environmental assumes no responsibility for any changes that may have occurred after this time. Compass Environmental has made no independent verification of this information and assumes no responsibility for any inaccuracies or omissions.

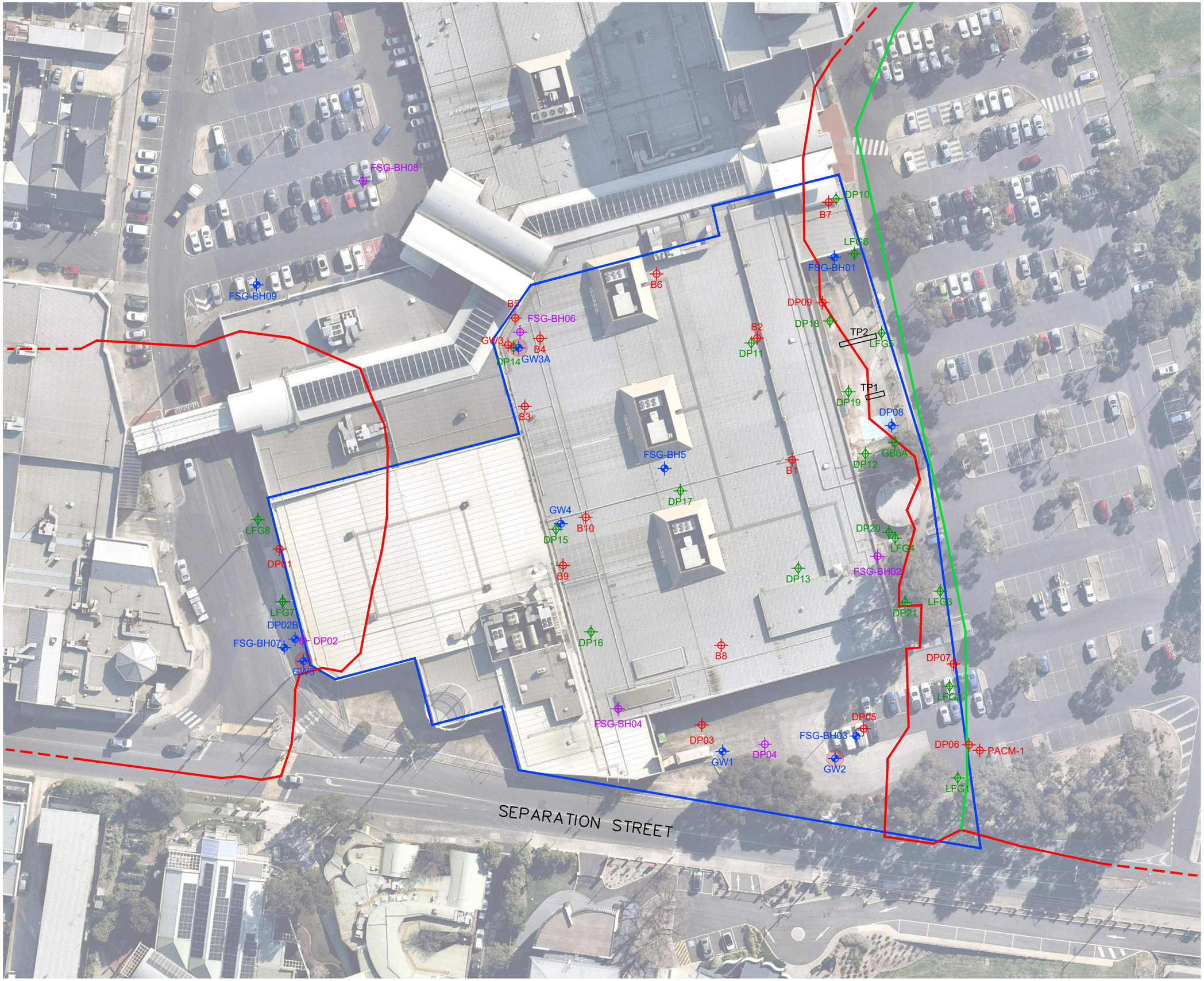
I trust this information assists. Please do not hesitate to call if you have any questions or require any further information or assistance.

For and on behalf of
COMPASS ENVIRONMENTAL PTY LTD

Stephen Harvey
Senior Associate
Senior Environmental Scientist

Damon Scoffern
Director
Principal Environmental Scientist

FIGURES



INFERRED CUT OFF TRENCH ALLIGNMENT:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

INVESTIGATION TRENCH:

SOIL BORE:

LANDFILL GAS BORE:

MONITORING WELL:

GEO-TECHNICAL BORE:

DUAL PURPOSE WELL/GAS BORE:

DP - DOUGLAS PARTNERS
FSG - FSG GEOTECHNICAL
GB6A - INSTALLED BY LOCAL AUTHORITY

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **SAMPLE LOCATIONS**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 13 September 2022

FILE REFERENCE: 21135_DRW01V01.DWG

FIGURE NUMBER: **1**

compassenvironmental

COMPASS ENVIRONMENTAL PTY LTD
SUITE 6, 5 ROSE STREET HAWTHORN EAST VICTORIA 3123
PH: 9819 4704 FAX: 9819 4724 EMAIL: enquiry@compassenviro.com.au

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HYDRAULIC HEAD
(20 DECEMBER 2021):

FILL AND SURFACE COVERING:

SILTY CLAY/
CLAYEY SILT:

SILTSTONE:

SANDSTONE/SILTSTONE LAYERS:

SANDSTONE:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

SOIL BORE:

LANDFILL GAS BORE:

MONITORING WELL:

OTHER
(GEO-TECHNICAL):

LEACHATE SUMP:

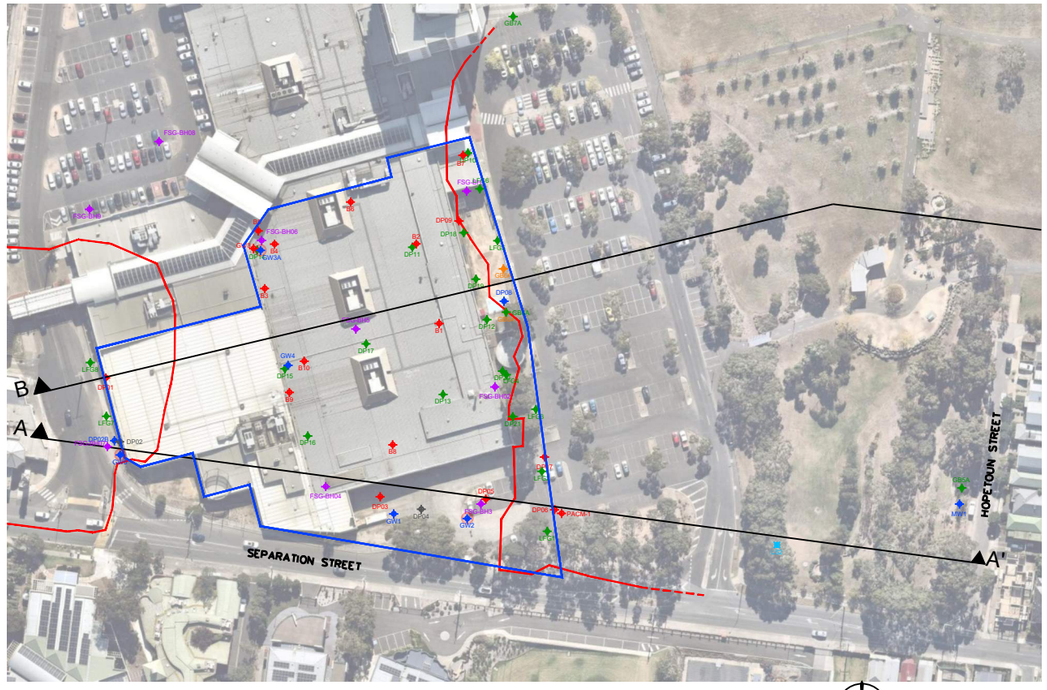
DUAL PURPOSE WELL/GAS BORE:

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL
(FSG 2021):

LANDFILL GAS BORE
(UNKNOWN):

FROM SURVEY PLANS



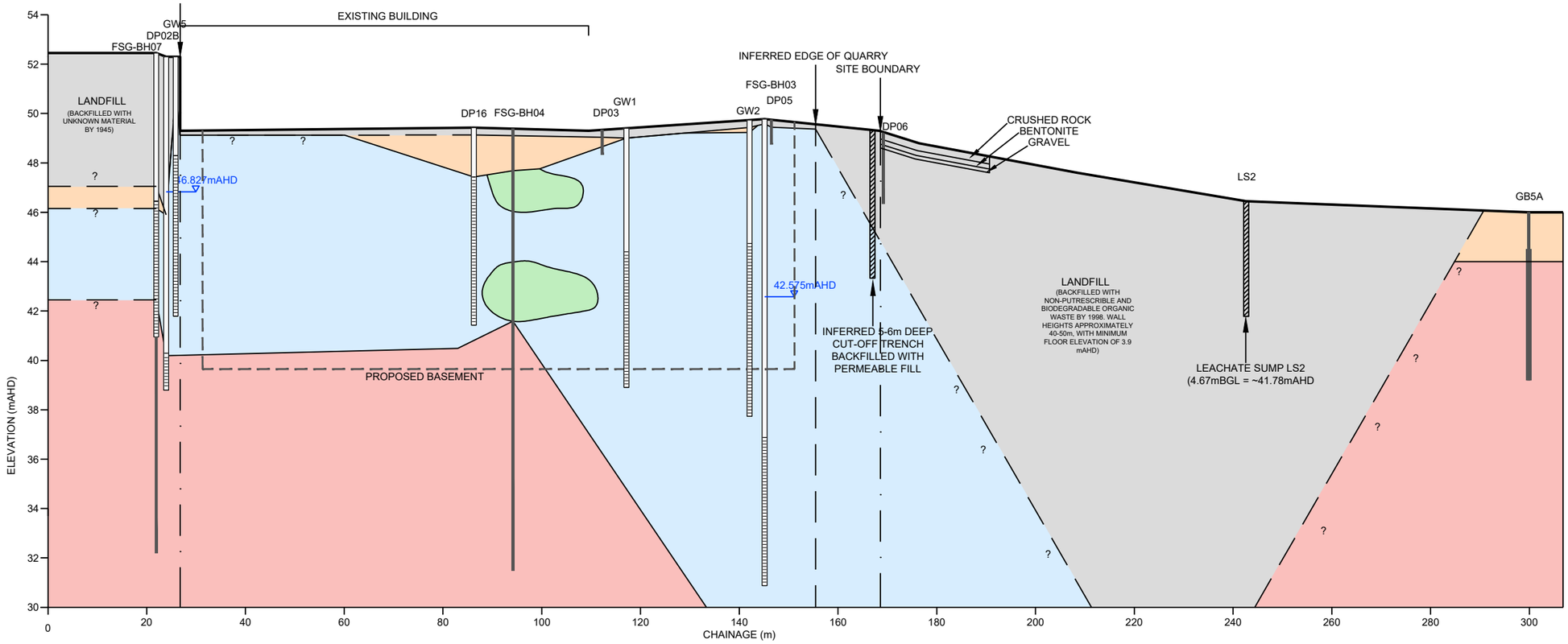
NORTH:

SITE BOUNDARY:

SCALE:

0 10 20 30 40m
SCALE 1:2000 @ A3

SITE BOUNDARY



(Cross section indicative only as waiting on survey data)

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**DRAFT GEOLOGICAL CROSS SECTION -A-A' EXTENDED**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	15 September 2022
FILE REFERENCE:	21135_DRW03V01.DWG
FIGURE NUMBER:	**2**

compassenvironmental

COMPASS ENVIRONMENTAL PTY LTD
SUITE 6, 5 ROSE STREET HAWTHORN EAST VICTORIA 3123
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HYDRAULIC HEAD
(17 FEBRUARY 2022):

FILL AND SURFACE COVERING:

SILTY CLAY/
CLAYEY SILT:

SILTSTONE:

SANDSTONE/SILTSTONE LAYERS:

SANDSTONE:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

SOIL BORE:

LANDFILL GAS BORE:

MONITORING WELL:

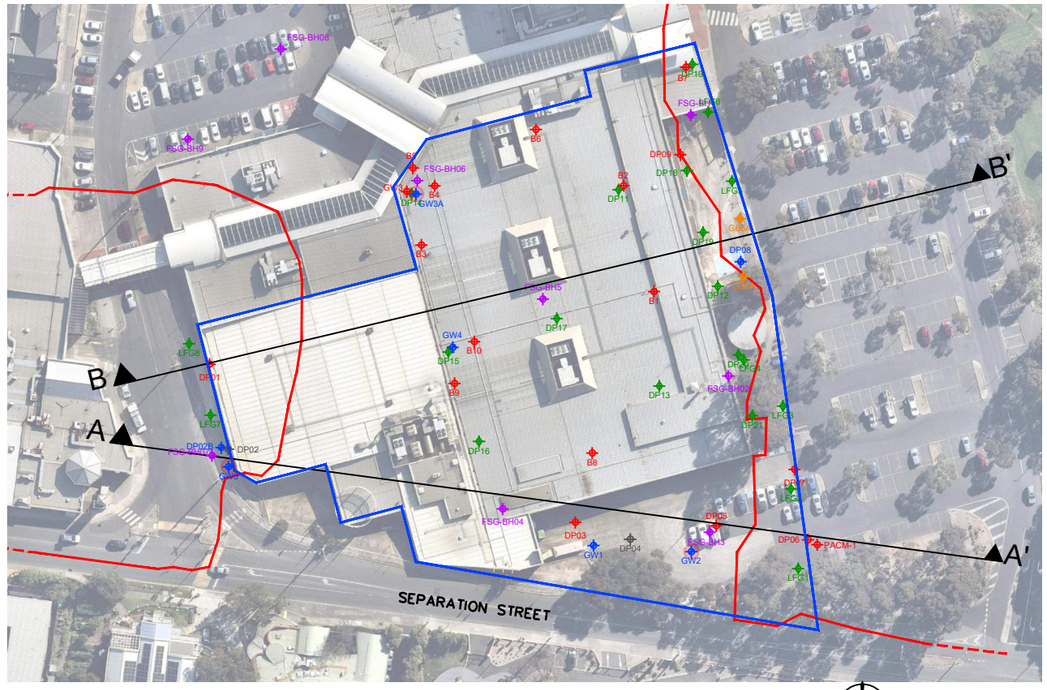
OTHER
(GEO-TECHNICAL):

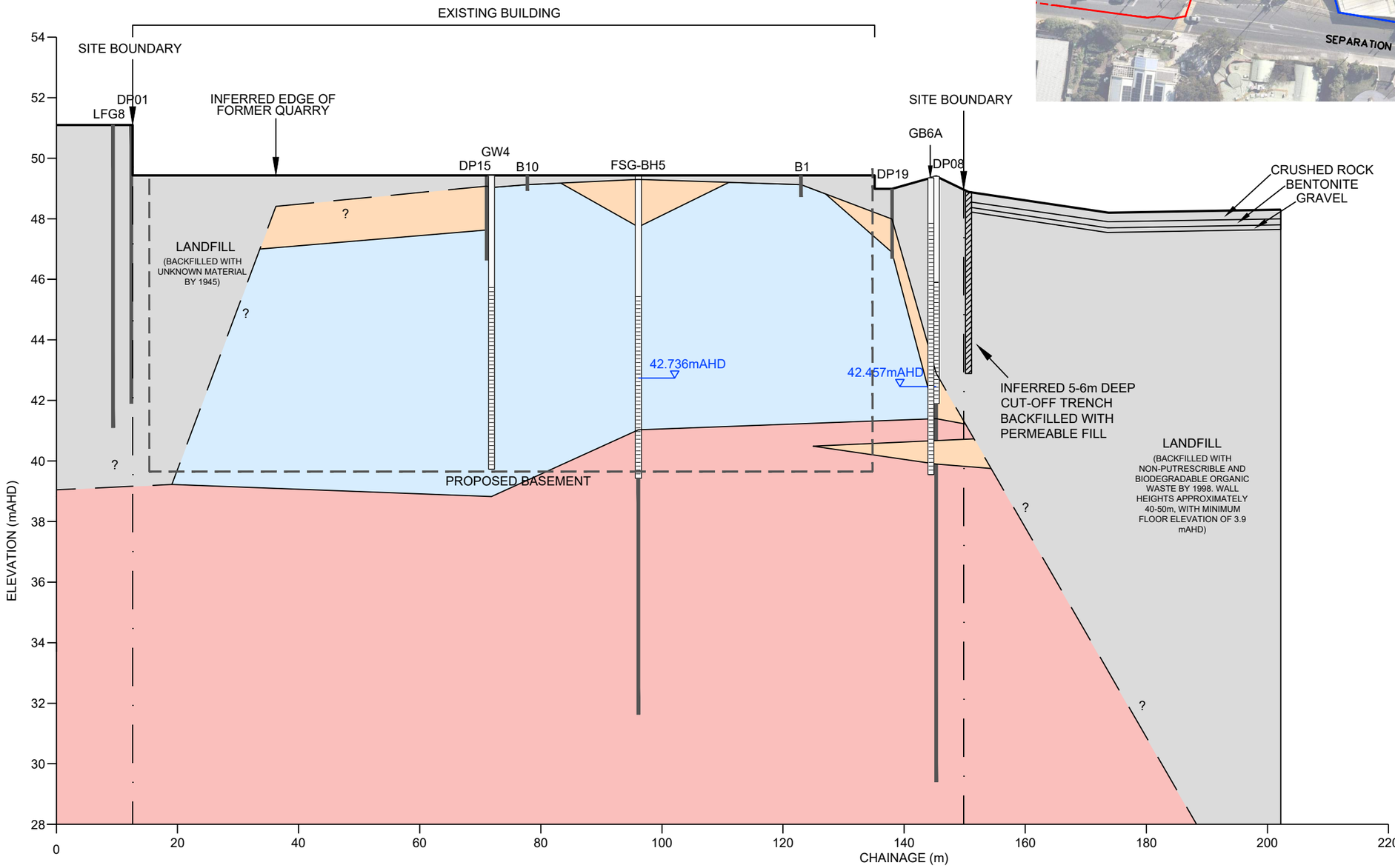
DUAL PURPOSE
WELL/GAS BORE:

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL
(FSG 2021):

LANDFILL GAS BORE
(UNKNOWN):





NORTH:

SITE BOUNDARY:

SCALE:

0 5 10 15m
SCALE 1:750 @ A3

(Cross section indicative only as waiting on survey data)

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**DRAFT GEOLOGICAL CROSS SECTION B-B'**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	15 September 2022
FILE REFERENCE:	21135_DRW03V01.DWG
FIGURE NUMBER:	**3**

compassenvironmental

COMPASS ENVIRONMENTAL PTY LTD
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ATTACHMENT A

Summary Report

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C/c Ryan O'Sullivan, ryan.osullivan@timeplace.com.au

12 May 2022

Dear Peter,

SUMMARY OF PREVIOUS WORKS AND WORK PLAN FOR FURTHER ENVIRONMENTAL INVESTIGATION:
NORTHCOTE PLAZA, 25 SEPARATION STREET, NORTHCOTE VIC

The following letter details the findings of environmental investigation works completed by previous consultants, a summary of the completed works at the site by Compass Environmental (Compass) and proposed scope of further works for the property located at Northcote Plaza, 25 Separation Street, Northcote, Victoria ("the site"). The site has a total area of approximately 13,285 m^2 (1.33 ha). The site is proposed for re-development for mixed-use high-density residential and commercial land use, including three level basement car parking. The site extent is shown in **Figure 1**.

We understand that you have been engaged in your capacity as an Environmental Auditor to undertake an Environmental Audit under the Environment Protection Act 2017.

The following sections provide an overview of the previously completed environmental investigations and proposed further works to aid completion of the Environmental Audit.

1 Scope of Works Completed to Date

The following scope of work has been completed by Compass at the site to date:

- ❒ Appraisal of site geology and hydrogeology including review of geological, hydrogeological and topographical maps.

- ❒ Review of previously completed environmental investigations at the site by Douglas Partners and FSG Geotechnics & Foundations, and available data from the adjacent landfills to collate and review relevant background information and develop an understanding of the historical activities at the site and potential for contamination.

- ❒ Detailed site inspection to determine current site condition and to check for any visual evidence of potential contamination.

- ❒ Soil investigation comprising:

- Logging and soil sampling at two trench locations (TP1 and TP2) in the east of the site, located adjacent the eastern site boundary where the maximum extent of former landfill adjacent east extended within the site boundaries.
- Laboratory analysis of selected soil samples for a range of potential contaminants identified during the site history review and previous investigations.

❒ Groundwater investigation comprising:

- Two rounds of groundwater sampling and gauging of six existing groundwater monitoring wells (FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH09, DP02B and DP08).

❒ Landfill gas investigation comprising:

- Two rounds of landfill gas monitoring of 14 existing landfill gas bores (DP08, DP10-DP17, DP19, FSG-BH01, FSG-BH03, FSG-BH05 and FSG-BH09) across the site.
- Two rounds of landfill gas monitoring of accessible underground services across the site and immediately off-site.
- Helium leak testing on seven existing landfill gas bores (DP10, DP11, DP14, DP15, DP17, DP19 and GB6A).

Sampling locations and extent of the former landfills are shown in **Figure 2**.

2 Site Description

2.1 Site Details

The site is located at Northcote Plaza, 25 Separation Street, Northcote, Victoria, and has a total approximate area of 13,285 m^2 (1.33 ha). The site only comprises part of the Northcote Plaza shopping complex, with the site extent shown in **Figure 1**. Site details are presented in **Table 1** below.

Table 1 Site Details

Property Address	Lot Description(s)	Standard Parcel Identifier(s) (SPI)
25 Separation Street, Northcote VIC 3070.	Lot 100 on SP27953. Part of Lot 83 on SP27953.	100\SP27953. Part of 83/SP27953.

2.2 Proposed Development

The site is proposed to be developed for a mixed high-density residential and commercial use which will cover the entire site extent. The development is proposed to include ground floor/at grade commercial/retail premises and up to 17 levels of residential units above in five towers, with three levels of basement car parking to a proposed depth of 9.8 m below the ground level (RL 39.65 m). Some areas of open space/garden beds are located in the centre of the proposed development.

Proposed development drawings are provided in **Attachment L**. Please note these drawings are subject to planning permission and may be subject to change.

2.3 Topography

The site has a ground elevation of approximately 50 – 54 m AHD, with a local downward slope to the east/northeast (refer to **Figure 2.1** below). In the west of the site a downward slope to the northwest was also evident.

It was noted that an area of higher elevation was present directly south to southwest of the site.

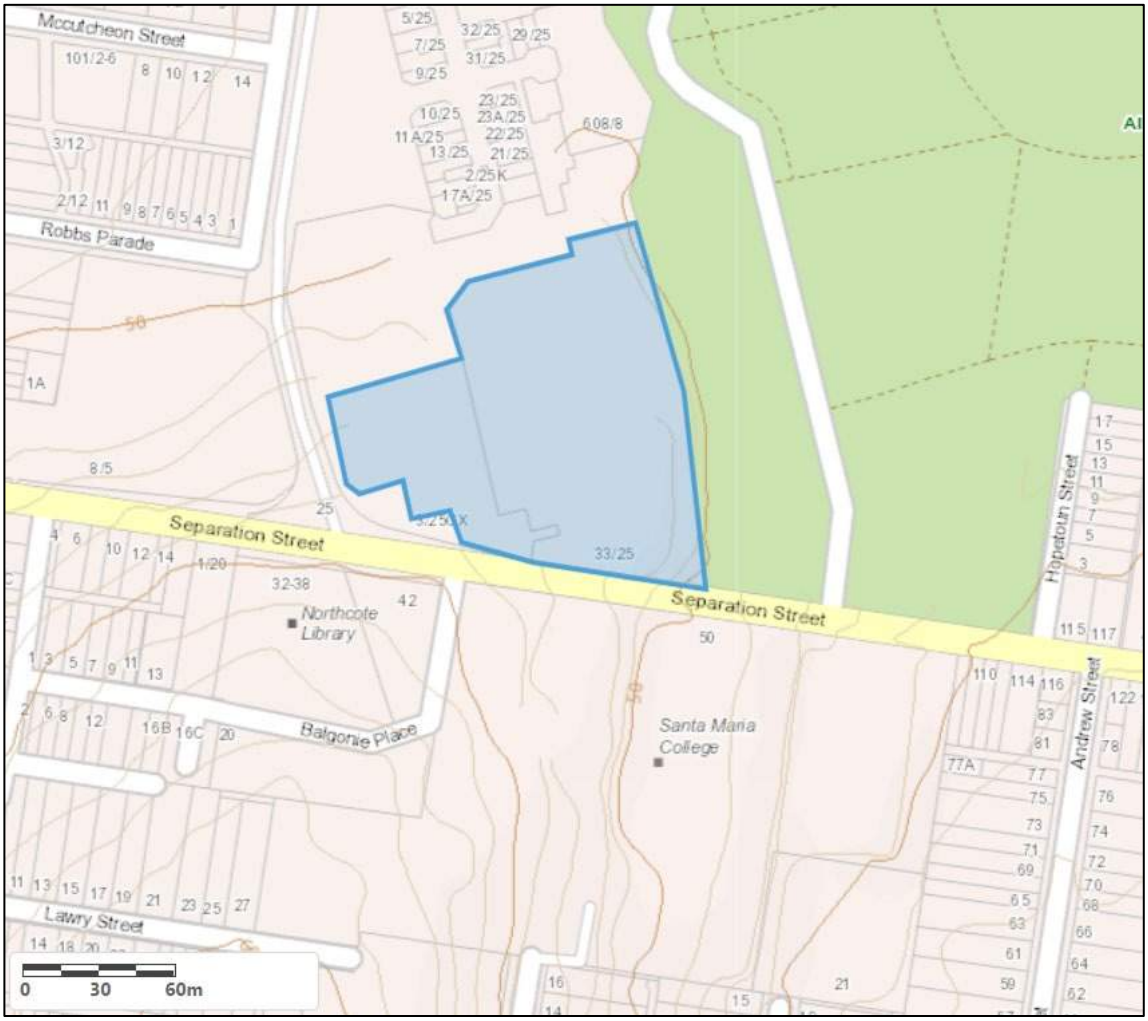

Figure 2.1: Regional Topography
Topographic Map (Source: www.mapshare.vic.gov.au)
(Note: all elevations are provided in m AHD).

2.4 Geology

The Geological Survey of Victoria 1:63:360 series Ringwood Map sheet (No. 849, Zone 7) indicated that the site was entirely underlain by the Silurian Melbourne Formation (formerly the Dargile Formation – Sud), comprising laminated and current bedded sandstones, interbedded with siltstones and shales. It was noted that the Melbourne Formation also outcropped in the vicinity of the site, underlying the adjacent former landfills to the east and west of the site, refer to **Figure 2.2** below.

Further to the east, northeast and northwest, the Melbourne Formation was overlain by Quaternary Newer Volcanics (Qvn), comprising vesicular, fine to medium-grained olivine basalts. The Brighton Group (Tpr) overlay the Melbourne Formation to the southwest of the site, and comprises poorly consolidated, fine to coarse sands, with minor poorly sorted gravels.

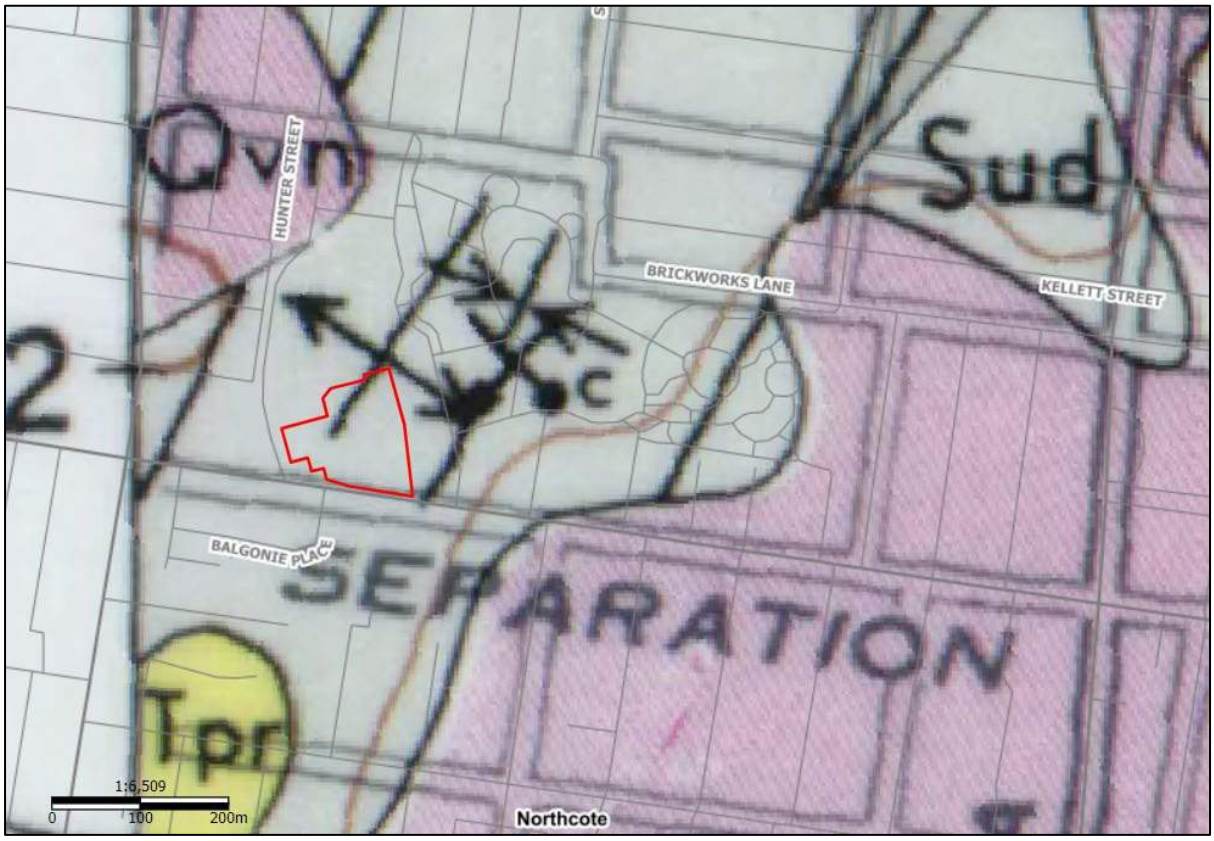

Figure 2.2: Regional Geology
(Extract from The Geological Survey of Victoria 1:63,360 series Ringwood Map Sheet No. 849, Zone 7)

A review of the Atlas of Australian Acid Sulfate Soils indicated that there was a low probability of occurrence for acid sulfate soils at the site.

2.5 Hydrogeology

Based on the Department of Environment, Land, Water and Planning (DELWP) Groundwater Resource Report, groundwater was anticipated to be encountered at depths of between 5 – 10 metres below ground level (m bgl), within the Mesozoic and Palaeozoic Bedrock (BSE) basement aquifer (>0 m bgl). The inferred salinity of the uppermost aquifer was 1,001 – 3,500 mg/L.

The nearest surface water body to the site was an unnamed lake within All Nations Park (closed landfill), located approximately 350 m east of the site. However, based on the reviewed reports (refer to **Section 3**), this lake is hydraulically disconnected from the underlying groundwater due to the presence of a liner system. Therefore, based on the regional topography and groundwater flows (refer to **Figure 3** and **4**), groundwater was likely discharging either to Darebin Creek, which was located approximately 2.5 km east of the site at its closest point, or potentially directly to the Yarra River, which was located approximately 2.03 km to the southeast of the site at its closest point.

A copy of the DELWP Groundwater Resource Report is provided in **Attachment A**. A summary of the previous groundwater investigations completed at the site and off-site is provided in **Section 3**. Compass also completed an intrusive groundwater investigation at the site, which is further discussed in **Section 7.2**.

3 Previous Assessments

Based on information provided by the client, previous environmental investigations were undertaken at the site by Douglas Partners between 2019 and 2021, including on-site soil, groundwater and landfill gas monitoring, and a geotechnical investigation completed by FSG Geotechnics & Foundations (FSG) in 2021. Additionally, landfill gas and groundwater assessment works were completed by an unknown consultant between 2019 and 2020 for the former landfill, located adjacent east of the site (former Northcote Landfill) within the present All Nations Park. The assessment reports for the adjacent former landfill were obtained by the client under Freedom of Information from the local authority, and the assessor's name has been redacted.

These investigations are reported in the following documents:

- Unknown 2020a. *Hydrogeological Assessment, All Nations Park*. Prepared for the City of Darebin, dated May 2020. It was noted that the document had been partially redacted, with the assessor's name not provided.
- Unknown 2020b. *Landfill Gas Risk Assessment, All Nations Park*. Prepared for the City of Darebin, dated June 2020. It was noted that the document had been partially redacted, with the assessor's name not provided.
- Douglas Partners 2021a. *Preliminary Site Investigation for Contamination, 25 Separation Street, Northcote*. Prepared for River Street Developments Pty Ltd, dated February 2021.
- Douglas Partners 2021b. *Limited Detailed Site Investigation (Contamination), 25 Separation Street, Northcote.* Prepared for Northcote Devco Pty Ltd, dated 02 August 2021.
- FSG 2022. *Preliminary Geotechnical Investigation, 25 Separation Street, Northcote, Victoria*. Prepared for Northcote Devco Pty Ltd, dated 11 March 2022.

The reviewed reports are summarised in the following sections. We understand these reports have also been provided to the Environmental Audit team.

3.1 Off-Site Previous Reports

3.1.1 Hydrogeological Assessment (Unknown 2020a)

The hydrogeological assessment was completed adjacent east of the site within the former Northcote Landfill, which is now known as All Nations Park. The assessment was a requirement of the EPA Victoria Pollution Abatement Notice (PAN) No. 90010375, issued on 09 April 2020, and included a desktop review and a groundwater assessment. Additionally, it was noted that the extent of the former quarry and landfill partially extended over the eastern boundary of the subject site, with one sampling location (GB6A) located within the subject site boundaries, refer to **Figure 2**. No other sampling locations were in the vicinity of the site. The main findings of the hydrogeological assessment were as follows:

- The former landfill was originally used as a quarry for brick making clay from the late 1880s. Quarrying commenced at the western end of the property (adjacent to the Northcote Cemetery), and the property was progressively developed as a quarry in the 1960s. The quarry supplied associated brickworks factories which were located to the west of the quarry within the subject site boundaries (Northcote Plaza and associated car parking) and further north. However, it was noted several kilns and chimneys were located within the boundaries of the former landfill site, although no details were provided.

- Brick making activities ceased in 1977 when the property was purchased by the City of Northcote, with the remaining kilns and chimneys demolished in 1979, with landfilling operations commencing in March 1979. The report noted that at the commencement of filling of the quarry holes, the deeper parts of the quarry were flooded, in particular in the south of the quarry adjacent to Separation Street, with quarrying activities likely to have lowered the water table. The depth of the quarry was reported at approximately 3.9 m AHD.

- The landfill operated between March 1979 and April 1998, and was believed to have been unlined, with waste placed directly against the rock base and walls. Prior to 1982, landfilling activities operated on a small scale, with larger tipping faces starting from 1982 onwards. The former landfill operated as a solid inert (non-putrescible) landfill, however it was known that significant amounts of garden cuttings, paper, timber and other biodegradable material were included within the landfill. Following the ceasing of landfill operations, the site was capped and rehabilitated between 1998 and 2002, with the capping comprising compacted clay cap of 500 mm thickness overlain by an approximately 200 mm thick layer of imported topsoil.

- The geology underlying the former landfill generally comprised siltstone and sandstone of the Silurian Melbourne Formation (formerly the Dargile Formation), with siltstone intercepted across the landfill extent. The exceptions were two gas bores installed in the far east of the landfill, which intercepted and were screened within the basalt of the Quaternary Newer Volcanics formation.

- The base levels of the quarry were shown in a 1975 aerial plan for the landfill, with quarrying works reported to extend approximately 40 – 50 m below the original ground surface (minimum floor elevation of 3.9 m AHD and wall heights of 45.2 m AHD to 52.8 m AHD).

- The reported noted that the ornamental lake within All Nations Park had a liner system comprising 500 mm of clay, with a 5 mm geosynthetic clay liner overlain by a 1.5 mm HDPE liner, indicating the lake was not in connection with any underlying groundwater.

- Historic groundwater monitoring has been conducted at the former landfill since 1999, with quarterly monitoring commencing in 2004. Leachate monitoring has been conducted at the landfill since 1994.

- The former landfill's monitoring network comprises three leachate sumps (LS1-LS3), five groundwater monitoring wells (MW1, MW2A and MW3-MW5), and 15 landfill gas bores (GB1A, GB2A, GB3A, GB5A, GB6A, GB7A GB9A, GB10A, GB11A, GB12B, GB12C, GB13A and GB13B). It was noted that MW5 was also monitored for landfill gas and some of the gas bores appeared to have been sampled for groundwater as part of the hydrogeological assessment, indicating that the bores may have been installed as dual-purpose landfill gas and groundwater bores. Bore GB6A was located within the boundaries of the subject site and was screened within siltstone (encountered from approximately 0.3 m bgl) and not within the waste mass (based on the provided bore log). The installation details for GB6A are discussed in **Section 7.3**.

- Groundwater elevations underlying the landfill were reported between 37 – 46 m AHD (2.90 m and 9.35 m below top of casing (m btoc)), indicating that groundwater was flowing in a south easterly to southerly direction towards the Yarra River.

- Slug testing was undertaken in January 2020 as part of the hydrogeological assessment at three monitoring wells (MW1, MW2A and MW3). No bore log or construction information was available for MW2A, and it was assumed that the well had a similar screened interval to wells MW1 and MW3 (screened from 6.0 – 12.0 m depth). The hydraulic conductivity ranged between 0.1 m/day and 0.7 m/day.

- TDS concentrations ranged between 3,300 mg/L and 19,370 mg/L.

- pH values for the groundwater ranged between 3.94 and 9.6 standard units, with REDOX values ranging between -255.8 mV to 233.0 mV.

- Elevated concentrations of ammonia (up to 14.0 mg/L), nitrate (up to 87.0 mg/L), calcium (up to 160 mg/L), chloride (up to 5,000 mg/L), sodium (up to 3,300 mg/L), sulphate (up to 1,000 mg/L), iron (up to 32.9 mg/L), manganese (up to 2.57 mg/L) and zinc (up to 1.7 mg/L) were reported at one or more wells, above the adopted criteria.

- Dissolved methane concentrations were generally reported below the laboratory limit of reporting (LOR), except for minor concentrations up to 0.1 mg/L at well MW3.

- Data from three monitoring rounds (January 2020 to April 2020) included within the hydrogeological assessment for GB6A, located within the subject site boundaries, reported concentrations of TDS (1,600 – 2,290 mg/L), bicarbonate as $CaCO_3$ (550 – 800 mg/L), chloride (428 – 782 mg/L), sulphate (93 – 144 mg/L), sodium (344 – 609 mg/L), potassium (33 – 60 mg/L), magnesium (74 – 97 mg/L), calcium (49 – 57 mg/L), ammonia (4.52 – 14.0 mg/L), nitrate (<0.01 mg/L), fluoride (2.0 – 2.7 mg/L), iron (1.19 – 3.47 mg/L), manganese (0.16 – 0.427 mg/L), zinc (0.032 – 0.096 mg/L), pH (5.86 – 7.02 standard units) and REDOX potentials between -91.9 mV to 74.5 mV. The hydrogeological assessment considered bore GB6A to be cross-gradient of the landfill.

- The ammonia concentrations were reported at GB6A (within the subject site boundaries) in the west of the former landfill and GB13B in the northeast of the landfill, which were considered to represent leachate impacts downgradient of the landfill. However, the leachate impacts were considered to be minor.

- Elevated nitrate was also reported at up-gradient well MW5, indicating a regional source of nitrogen, with some of the detected nitrate in the groundwater underlying the former landfill attributed to off-site sources. Fluoride was added into the quarterly monitoring to assess whether one of the sources of nitrate in the groundwater was associated with leaking sewer pipes in the vicinity of the former landfill, with higher concentrations of fluoride identified in wells were the highest nitrogen were also reported. However, the leaking sewer has not been confirmed as a source.

- The concentrations of chloride, sodium and zinc were considered to be representative of natural background conditions.

3.1.2 Landfill Gas Risk Assessment (Unknown 2020b)

A landfill gas risk assessment was completed adjacent east of the site within the former Northcote Landfill, which is now known as All Nations Park. The risk assessment was conducted for the residential and commercial properties located adjacent to the former landfill, focusing on the on-site buildings and closest receptors to the landfill, and incorporated landfill gas monitoring completed between 2011 and 2020. The main findings of the landfill gas risk assessment were as follows:

- Landfill gas mitigation measures exist at the landfill, comprising a landfill gas drainage blanket to control the seepage of landfill gas from the cap and edges of the landfill. An investigation (assessor unknown) was conducted into the construction of the landfill gas management system in 2011, which did not identify any available construction drawings for the system. However, the gas drainage blanket was believed to extent over an area of approximately 11,000 m^2, and consists of a 1 m thick layer of clean gravel (sized between 35 mm to 200 mm and less than 10% fine material), covered by a layer of geofabric material and a clay cap.

- Additionally, perimeter and internal gas trenches were constructed at the former landfill prior to the installation of the final landfill cap for passive venting. The trenches were believed to have been installed at regular

intervals across the former landfill. The internal trenches are reported to be approximately 1.0 m in width and 0.5 m in depth, with the perimeter trenches approximately 1.5 m in depth. All trenches were filled with aggregate (20 mm to 40 mm in size), with a slotted 100 mm diameter MDPE pipe placed in the upper half of the trenches to collect landfill gas for distribution to the passive venting system.

- Gas seepage was reported near the southeast corner of the adjacent shopping plaza (Northcote Plaza) in 1986 (likely within the subject site). As part of remedial works undertaken, a trench (5 m to 6 m in depth) was excavated in this area and backfilled with coarse gravel. The exact location of the trench was hard to determine from the reports provided, Compass completed trenching (TP1 and TP2, further discussed in **Section 7.1**) along the eastern site boundary, which did not identify any engineered trenches, therefor it is assumed the trench is located directly east off-site, as shown in **Figures 2, 5** and **6**.

- It was noted that a gas mitigation system, similar to that within the former landfill, was proposed for the car park area associated with Northcote Plaza directly east of the subject site within the former landfill extent, including a gas drainage blanket (1 m in width) and passive venting proposed for installation along the edge of the plaza building to collect any gas migrating towards the building. Compass understands these details are consistent with the construction of the gas mitigation system within the subject site.

- During construction of the perimeter gas drainage along the western edge of the former landfill (directly east of the subject site), the quarry wall was exposed and presented a potential migration pathway for landfill gas. As a result, a HDPE liner with a layer of geofabric on both sides was installed along the face of the south western quarry wall to seal the exposed fill areas. The gas drainage system was also modified for additional internal and perimeter gas drainage trenches and passive venting to line the entire edge of the old quarry.

- The gas monitoring at the former landfill was conducted on a quarterly basis from 2011, including subsurface monitoring landfill gas bores, surface methane emissions monitoring, underground services monitoring and the monitoring of buildings.

- Landfill gas monitoring was also conducted on a biannual basis between 2002 and 2011, although this data was not included in the landfill gas risk assessment due to reported oxygen concentrations during monitoring similar to atmospheric levels (approximately 21%) and questions on the integrity of the bore seals.

- The original landfill gas monitoring network consisted of 13 landfill gas monitoring bores (GB1-GB13), which were installed to a depth of 5 m bgl and screened from 2 m to 5 m bgl. However, a number of bores were lost or damaged during the period of monitoring, with two replacement bores (GB12B and GB13A) installed in 2006. Following a review of the gas monitoring network in 2010 to 2011, 11 new landfill gas monitoring bores (GB1A, GB2A, GB3A, GB5A, GB6A, GB7A, GB8A, GB10A, GB11A, GB12C and GB13B) were installed in June 2011 to a depth of between 7.0 m and 9.8 m bgl.

- The current gas monitoring network comprises 15 landfill gas monitoring bores across the former landfill, including three of the older bores which were considered to have adequate seals (GB9A, GB12B and GB13A), the 11 bores installed in June 2011 (GB1A, GB2A, GB3A, GB5A, GB6A (within the eastern boundary of the subject site), GB7A, GB8A, GB10A, GB11A, GB12C and GB13B)), and the dual-purpose landfill gas and groundwater monitoring bore MW5, located approximately 200 m north (and up-gradient) of the site. Apart from GB6A within the subject site, no other bores were located in the near vicinity of the site.

- Based on the subsurface monitoring (2010 – 2019), concentrations of methane were generally reported up to 0.1% v/v, excluding bores GB6 and GB12B where elevated methane was reported up to 18.5% v/v. Carbon dioxide was reported up to 18.7% v/v, including up-gradient well MW5 where concentrations up to 8.1% v/v were reported. Carbon monoxide concentrations were reported up to 11 ppm, and hydrogen sulphide up to 2 ppm. Flow rates ranged between -0.2 L/hr to 0.1 L/hr.

- Monitoring of bore GB6A (located within the eastern boundary of the subject site) reported methane concentrations of 0.0% v/v, carbon dioxide up to 4.2% v/v, carbon monoxide up to 4 ppm and hydrogen sulphide up to 1 ppm. Flow rates were reported between 0.0 L/hr and 0.1 L/hr.

- The detected methane concentrations were reported in two bores (GB6 and GB12B) installed within the gas collection blanket, with no elevated methane concentrations reported since 2013.

- Elevated carbon dioxide was identified in five perimeter bores (GB2A, GB7A, GB9A, GB12B and GB13A).

- Underground services monitoring reported methane concentrations within the underground services in the vicinity of the site to generally be at ambient concentrations, excluding some methane detected in a stormwater pit at the corner of Separation and Munro Streets in 2012 (up to 500 ppm). The detected methane was not considered to be sourced from the landfill waste mass, due to the distance (approximately 100 m) from the former landfill.

- Surface emissions monitoring has reported methane concentrations up to 17,000 ppm, with the detected methane concentrations generally associated with two leachate sumps (LS1 and LS2), and some elevated emissions detected along the northern retarding basin and at a crack in the capping in the northern section of the former landfill (near Brickworks Lane). The crack was sealed by the Council, with subsequent monitoring reporting no elevated methane in the vicinity. No elevated methane detections have been identified in the surface emissions monitoring since 2016.

- Monitoring of the on-site buildings (staff office, storage shed and public toilet block) and within the adjacent underground loading dock of Northcote Plaza reported no methane above ambient concentrations (up to 2 ppm).

- A Gas Screening Value (GSV) was calculated for each of the monitored landfill gas bores, based on carbon dioxide concentrations and the highest flow rate of 0.1 L/hr. GSVs ranged between 0.00 L/hr and 0.02 L/hr. It was noted that bores GB6 and GB12B (where elevated methane was identified) were excluded from the GSV calculations.

- Overall, the former landfill Characteristic Situation was assessed as CS2 – low risk.

- The risk assessment concluded that landfill gas was not expected to be a significant risk to the surrounding receptors based on the age of the landfill (approximately 22 years), the type of waste deposited (mostly solid inert waste, with some limited putrescible waste of the type that degrades slowly), and the low permeability Silurian siltstone (Melbourne Formation) that surrounded the majority of the former landfill, as confirmed by the reviewed monitoring data.

- The report recommended that any off-site developments conduct a landfill risk assessment to further assess any potential impacts of landfill gas on any proposed re-development.

- No landfill gas extraction or mitigation infrastructure is believed to be within the subject site.

Further to the above the City of Darebin is responsible for ongoing environmental management of All Nations Park, as detailed in a report titled *City of Darebin, All Nations Park, Aftercare Management Plan*, dated May 2020. The Aftercare Management Plan confirms ongoing appropriate management of the former landfill will be completed by the local authority. The ongoing management will include regular monitoring of groundwater, leachate, landfill gas, and capping and infrastructure integrity inspections to be completed by an environmental consultant, and data provided to the City of Darebin.

3.2 On-Site Previous Reports

3.2.1 Preliminary Site Investigation, 25 Separation Street, Northcote (Douglas Partners 2021a)

Douglas Partners was engaged to complete a Preliminary Site Investigation (PSI) at the site. The PSI included a limited desktop site history review and an intrusive soil investigation to provide an initial indication of the potential contamination status of the soil and whether landfill gas exists beneath the proposed development. The main findings of this assessment were as follows:

- The desktop site history review included review of five historical aerial photographs between 1945 and 1984, a Melbourne Metropolitan Board of Works (MMBW) map dated 1933, and available Council documents. The historical aerial photographs and MMBW map indicated that historically the site was part of the Northcote Brickworks, including two kilns located on-site from at least 1933, with the main buildings associated with the brickworks located in the north of the site and off-site to the north and northwest. The associated clay quarries also appeared on the 1933 plan, including a quarry to the west of the site that extended into the very west of the site, and a quarry to the northeast.

- The quarry to the northeast of the site had significantly expanded by 1945, including extending onto the south eastern corner of the site, although the quality of the aerial photograph made detail difficult to distinguish. The quarry to the west of the site appeared to have been filled by 1965, although it was noted that the quality of the 1945 aerial photograph did not provide enough detail to confirm the presence of the quarry adjacent west of the site. By 1965, the two large on-site kilns had been joined by a third building in the west of the site, with the quarry to the east of the site extending slightly further into the site along the eastern site boundary.

- By 1970, the former quarry to the west of the site was being used as a car park. The on-site building footprint had changed, with the buildings associated with the Northcote Brickworks having been expanded and amalgamated. The quarry to the east of the site had not significantly changed in area. The site and surroundings showed little change in 1979.

- By 1984, the site had undergone significant re-development comprising one large commercial building in the eastern half of the site and extending off-site to the north (Northcote Plaza) and a car park in the western part of the site (also extending off-site to the north). To the east of the site, the former quarry hole was being operated as the Northcote Regional Tip, with visible signs of filling.

- The PSI report was updated in February 2021 to include a summary of the documents available for the adjacent former landfill within All Nations Park, as summarised in **Section 3.1** above.

- The intrusive soil investigation was conducted at the site in November 2019 and included nine borehole locations (DP01-DP09) in accessible areas across the site and one geotechnical location (DP02B) where no environmental soil samples were collected. The boreholes were drilled to depths of between 1.0 m and 20 m bgl using a solid flight auger. It was noted that no sample locations were placed within the on-site building. The previous sampling locations are shown in **Figure 2**.

- A concrete slab was encountered at the surface (approximately 0.11 m to 0.2 m in thickness) at locations DP01, DP03, DP04, DP08 and DP09. A thin layer of asphalt (approximately 0.03 m in thickness) was encountered at the surface at DP05-DP07.

- A layer of fill material was encountered at the site, ranging in thickness between 0.12 m and >9.1 m (the maximum depth of drilling). The deeper fill was encountered in the on-site extents of the former quarry holes,

including at DP01 and DP02B in the west of the site (located just outside the western site boundary), and at DP06, DP07 and DP08 in the east of the site. The fill comprised grey crushed rock, dark brown mottled grey, orange and yellow silty clay, brown, fine to coarse-grained silty sand, brown to grey-brown, fine to coarse-grained gravelly sand, and grey to brown sandy gravel, with variable amounts of fine to medium-grained sand. Inclusions of inert material, such as brick, plastic and concrete fragments, ash and slag, were identified in the fill material. No odours or staining were identified.

- The underlying natural soils comprised yellow brown silty clay and pale brown clayey silt, with variable amounts of fine to medium-grained sand, with siltstone encountered at locations DP02B, DP04 and DP08 from depths of between 2.5 m to 15.0 m bgl. Layers of sandstone were encountered at DP02B at a depth of 12.1 m bgl and at DP08 at a depth of 8.0 m bgl. No odours or staining were identified in the natural soils.

- During drilling, a fragment of potential asbestos containing material (ACM) was identified on the ground adjacent to location DP06 in the southeast corner of the site. The sample was tested by the analytical laboratory and confirmed the fragment contained chrysotile and amosite.

- The analytical results were compared against the former IWRG 621 criteria. The fill reported elevated cadmium (up to 3.8 mg/kg), copper (up to 480 mg/kg), lead (up to 370 mg/kg), nickel (up to 62 mg/kg), tin (up to 150 mg/kg), zinc (up to 1,800 mg/kg), benzo(a)pyrene (up to 6.3 mg/kg) and total PAHs (up to 68 mg/kg) above the threshold for EPA Fill Material, with one benzo(a)pyrene concentration also exceeding the threshold for Category C Contaminated Soil. pH conditions in the fill ranged between 9.0 and 9.2 standard units.

- No exceedences of the adopted criteria were reported for the natural soils.

- Leachability analysis also reported leachable lead (up to 3.6 mg/L) above the threshold for Category C Contaminated Soil.

- Two boreholes were converted into standpipes (DP02B and DP08) to measure the depth to groundwater. However, no groundwater levels were provided in the report.

3.2.2 Limited Detailed Site Investigation, 25 Separation Street, Northcote (Douglas Partners 2021b)

Following the completion of a preliminary site investigation (PSI) by Douglas Partners in 2019 (Douglas Partners 2021a), a limited detailed site investigation was completed to address the data gaps identified by the previous works. The works included a review of additional documentation, a further intrusive soil investigation, and a landfill gas and groundwater investigation. The main findings of this assessment were as follows:

- The further soil investigation was conducted in June 2021 and comprised 12 boreholes (DP10-DP21), including six boreholes within the on-site building. The boreholes were drilled to depths of between 0.5 m and 9.0 m bgl via solid flight auger and continuous rotary diamond coring where drilling extended into weathered rock. The sampling locations are shown in **Figure 2**.

- A concrete slab was encountered at the surface (approximately 0.1 m to 0.25 m in thickness) at locations DP10, DP11 and DP13-DP19.

- Fill material ranged in thickness between 0.15 m to >0.87 m (maximum depth of drilling), and comprised grey, fine to coarse-grained sandy gravel, brown gravelly clay and pale brown to grey clayey silt. Inclusions of inert material, such as brick and concrete fragments, were identified in the fill material. Hydrocarbon odour was identified in the fill at DP14 (0.26 – 0.5 m bgl) and strong hydrocarbon odour was identified in the fill at DP15 (0.17 – 0.35 m bgl) in the northwest of the site. No other evidence of odour or staining was observed.

- Where encountered, the natural soils comprised orange, brown and grey clayey silt, and pale grey clayey sandy silt, with weathered siltstone or sandstone encountered between depths of approximately 1.5 m to 2.1 m bgl. Strong hydrocarbon odour was identified in the natural soils directly underlying the fill at DP14 (0.5 – 1.6 m bgl) and DP15 (0.35 – 1.8 m bgl), with moderate hydrocarbon odour within the underlying siltstone at DP14 (1.6 – 2.0 m bgl, the maximum depth of drilling) and DP15 (1.8 – 2.8 m bgl, the maximum depth of drilling). No other evidence of odours or staining was observed.

- Elevated concentrations of TRH C10-C16 less naphthalene (F2) (up to 3,700 mg/kg), TRH C16-34 (up to 9,100 mg/kg) and naphthalene (up to 660 mg/kg) were identified in the fill material and natural soils at locations DP14 and DP15 in the northwest of the site, where hydrocarbon odours were identified during drilling. The concentrations of TRH C10-C16 (up to 4,000 mg/kg) and TRH C16-C34 also exceeded the Management Limits for commercial/ industrial use.

- Elevated concentrations of benzo(a)pyrene (up to 6.3 mg/kg), carcinogenic PAHs (as BaP TEQ) (up to 9.5 mg/kg) and total PAHs (up to 913 mg/kg) were reported in the fill material above the adopted assessment criteria (NEPM EILs, HIL C and/or HIL D).

- The soil boreholes were converted into either landfill gas bores (DP10, DP11, DP14, DP15 and DP17-DP21), or dual-purpose landfill gas bores and groundwater monitoring wells (DP12, DP13 and DP16). The screened intervals and construction details are provided in **Section 7.3**.

- When an attempt was made to sample the groundwater wells (DP12, DP13 and DP16), all three wells were observed to be silted up and no groundwater could be collected. During the site inspection completed by Compass, screen remnants beside wells DP12, DP13 and DP16 were observed to have a screen of 3 mm (typical of landfill gas bores and not groundwater wells), which was likely the reason the wells silted up.

- As part of the groundwater investigation, an existing gas bore installed as part of the assessment of the adjacent former landfill (GB6A) was gauged. The standing water level was reported to be 7.2 m bgl.

- Landfill gas monitoring of the landfill gas bores (DP10-DP21) generally reported no detectable methane concentrations, excluding two minor detections at DP15 (0.8% v/v) and DP18 (0.1% v/v). Carbon dioxide concentrations were generally reported up to 0.5% v/v, excluding higher concentrations at DP14 (4.8% v/v) and DP20 (2.1% v/v). Flow rates were generally low, ranging between 0.0 L/hr and 2.0 L/hr, excluding a high flow rate reported at DP14 of 18.3 L/hr.

- PID readings were also taken at the landfill gas bores and ranged between <1 ppm and 48.4 ppm. The two highest readings were reported at DP14 (42.0 ppm) and DP15 (48.4 ppm), where hydrocarbon odours were identified during drilling.

- A copy of the Douglas Partners bore logs are provided in **Attachment D**.

- Compass tabulated the Douglas Partners soil data against current criteria, with the results provided in **Attachment H**.

3.2.3 Preliminary Geotechnical Investigation (FSG 2022)

FSG Geotechnics & Foundations (FSG) was engaged by Northcote Devco Pty Ltd to complete a preliminary geotechnical investigation at the site. The main findings of this assessment were as follows:

- The site forms the southern part of the existing Northcote Plaza Shopping Centre, with the majority of the site covered by the existing Northcote Plaza building, including the former Kmart and Coles retail stores. The remainder of the site comprises car parking and delivery driveways.

- A feature and level survey plan of the site indicated that the topography of the site was generally flat (ground surface levels of between 48.4 m and 52.0 m AHD), except for the southwest boundary where the elevation was reported at approximately 53.7 m AHD.

- The preliminary geotechnical investigation comprised nine boreholes (BH01-BH09) to depths of between approximately 13.0 m and 21.4 m bgl, with drilling completed between November 2021 and February 2022. All bores were within the site boundary, with the exception of BH07, BH08 and BH09, which were located off-site to the west and northwest, refer to **Figure 2**. Bore logs are provided in **Attachment D**.

- A concrete slab was encountered at the surface (approximately 0.12 m to 0.17 m in thickness) at locations BH01 and BH04-BH06. Borehole BH01 also encountered a second concrete slab underlying the fill material (0.9 – 1.5 m bgl). A thin layer of asphalt (approximately 0.01 m to 0.05 m in thickness) was encountered at the surface at BH03, BH08 and BH09.

- Fill material was encountered at all locations, ranging in thickness between 0.2 m to 0.8 m bgl, excluding deeper fill at BH01 in the east of the site to 1.5 m bgl and at BH07 located off-site to the west within the former landfill to 5.4 m bgl, associated with the former quarry extents. The fill comprised dark brown sandy silty gravel, gravelly clay and gravelly silt, pale brown sandy clayey silt, grey sandy gravel, and pale brown sand. Inert inclusions of brick fragments and building rubble were identified in the fill at some locations. Strong hydrocarbon odour was identified in the fill at BH06 (0.6 – 1.05 m bgl) in the north of the site (adjacent BH14 where Douglas Partners previously identified hydrocarbon impacted fill material), with no other evidence of odours or staining observed.

- Natural soils comprised stiff to hard, orange brown to grey clay, sandy clay and sandy silt, and pale grey and brown silty clay. Siltstone and/or sandstone was encountered at all boreholes from depths of between approximately 1.7 m to 5.5 m bgl.

- Additionally, the report concluded that previous Douglas Partners location DP04 encountered dyke material (weathered material with a consistency equivalent to very stiff to hard clay) at depths of between 3.5 m to 8.3 m bgl. Douglas Partners did not identify the material as a weathered dyke, but FSG considered that the zone was representative of deeply weathered zones, similar to the material encountered at BH01 and BH02 which were representative of dyke or dyke affected material.

- Five boreholes (BH01, BH03, BH05, BH07 and BH09) were converted into groundwater standpipes to allow for the measurement of depth to groundwater. Screened intervals and construction details are provided in **Section 7.2**.

- Groundwater was encountered at depths between 3.3 m and 7.2 m bgl (42.5 – 47.4 m AHD).

- No environmental soil or groundwater analysis were completed.

- FSG recommended that the basement will need to be designed as a dry sealed structure to avoid groundwater ingress.

4 Further Site History Review

Further information on the history of the site was obtained by Compass from the following sources:

- ❒ Review of historical aerial photograph from the Melbourne 1945 online map.
- ❒ Enquiry to the local water authority regarding site drainage plans and any trade waste records.
- ❒ Review of available online historical information.

The findings of the further site history review are summarised in the following sections.

4.1 Historical Aerial Photographs

One additional historical aerial photograph dated from 1945 was viewed based on the low quality of the historical aerial provided in the PSI report (Douglas Partners 2021a). Observations interpreted from the photograph are provided in **Table 2** below. A copy of the aerial photograph is provided in **Attachment B**.

Table 2 Summary of Historical Aerial Photographs

Year	Observations
1945 Source: 1945.Melbourne	**Site:** Two buildings (kilns) were present on-site in the east of the site, consistent with the 1933 MMBW plan. A third, large building was present in the west of the site, with a potential chimney stack visible on the northern end of the building (potentially located just outside of the current site boundaries). A small area of the adjacent quarry extended into the southeast corner of the site. The quarry depth appeared shallow for extent within site boundary.
	Surrounding area: The quarry to the east of the site had significantly expanded compared to the 1933 MMBW plan, and ran adjacent to the eastern site boundary, excluding a small area that extended onto the southeast corner of the site. The bulk of the brickworks building were located to the immediate north and northwest of the site, including four more kilns to the northwest. The quarry to the west of the site had almost been completely infilled by material from an unknown source. The majority of the remaining area surrounding the site comprised low-density residential houses, and the Whittlesea railway line ran further to the west of the site.

4.2 Historical Drainage Plans

Compass made an enquiry to Yarra Valley Water on 12 April 2022 for information regarding historical drainage plans for the site. One drainage plan was provided by Yarra Valley Water pertaining to the site.

The plan was dated December 1989 and showed part of the Northcote Plaza building, with further buildings extending off-sited to the north. Within the site boundaries, the plan showed one large rectangular building covering the eastern area of the site, matching the current eastern building extent. The plan indicated that at least the western side of the building would be occupied by a Kmart retail store. The internal infrastructure was connected to a sewer main running along Mccutcheon Street to the west, with most of the fittings on the eastern site of the building. The fittings included lavatories, basins, a dishwasher, troughs and floor areas.

A copy of the drainage plan is provided in **Attachment C**.

4.3 Review of Available Online Records

A review of the available information on the Darebin Heritage website, part of Darebin Libraries, was made on 12 April 2022, with additional details obtained from the Northern Suburbs Factory Study (Vines & Churchward 1992). The available information included the following:

- Bricks began being produced at the site and further north (as the Patent Brick Company) in 1873. The Patent Brick Company was purchased in 1882 by a group of businessmen who formed the Northcote Brick Company Ltd, as well as an additional eight acres along Separation Street including a 40 foot quarry. The first Hoffman kiln was added to the site the year after, with a second and third added in 1886.

- A fourth and fifth kiln were added in 1887 – 1888 (Vines & Churchward 1992).

- The Whittlesea railway line began construction in 1888, opening in 1889, with the Northcote Brickworks Company opening a railway siding across High Street to make coal deliveries easier (Vines & Churchward 1992).

- A plan, dated circa 1912, showed two kilns on-site, with the bulk of the buildings associated with the Northcote Brickworks locate to the north off-site. Two clay quarries were also shown, one adjacent west of the site, and one to the northeast of the site.

- In 1919, new steam works were installed at the brickworks.

- An available historical photograph, dated 1957, showed the view over the Northcote Brickworks looking south to Separation Street. The photograph showed the area of the subject site, including two Hoffman kilns (with chimneys) in the east of the site, and a large, multistorey building in the west of the site, adjacent to the former western quarry. A chimney stack was present on the northern site of the western building, and there appeared to be a connecting pipe/conveyor between part of the building and the nearby kilns, refer to **Figure 4.1** below.

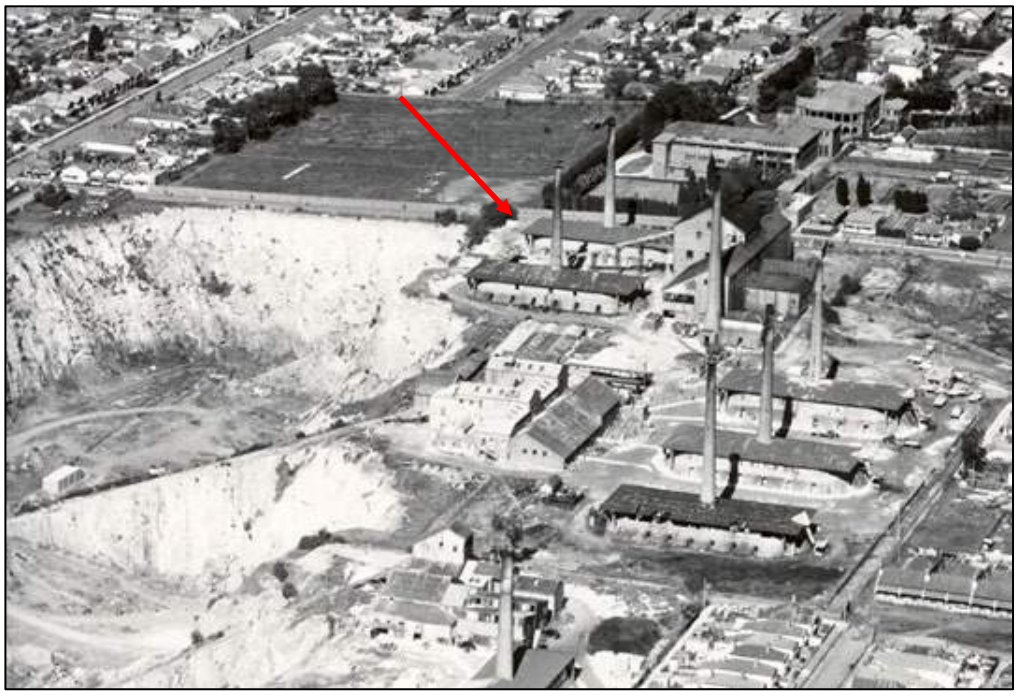

Figure 4.1 Historical photograph of Northcote Brickworks, dated 1957
(Source: https://heritage.darebinlibraries.vic.gov.au/article/294, accessed 12 April 2022)

- The site operated as a brickworks until 1977, when the quarry was sold to the Northcote Council for use as a tip. Two years later, the unquarried area to the west of the site, including chimneys and brickworks buildings, was levelled and the site sold to developers.

- The adjacent quarry hole to the east of the site was used as the Northcote Tip from 1977, including to dump timber, car bodies, concrete and garden waste.

- In 1981, Northcote Plaza was constructed on the site of the former kilns.

Copies of the available information are provided in **Attachment D**.

5 Site History Summary

Historically, the site was part of the Northcote Brickworks from the 1880s to the 1970s, with two kilns located on-site from at least 1933 and the main buildings associated with the brickworks located in the north of the site and further off-site to the north and northwest. Two clay quarries were associated with the brickworks, one to the west of the site and one to the east of the site, both present on a MMBW plan dated 1933. By 1945, the two large on-site kilns had been joined by a third building in the west of the site, with no significant changes to the building footprint in 1965. Based on a historical photograph, dated 1957, the building in the west of the site had multiple storeys and was connected to the two nearby kilns via pipework/conveyor. By 1970, the on-site building footprint had changed, with the buildings associated with the Northcote Brickworks having been expanded and amalgamated.

The quarry to the west of the site, which extended into the western area of the site in 1933, was mostly backfilled with unknown material by 1945. By 1970, this area was being used for car parking.

To the east of the site, the associated quarry commenced at the western end of the property (adjacent to Northcote Cemetery) and was progressively developed in the 1940s to 1960s. By 1933, the quarry pit extended to just off-site to the northeast, and by 1945 had expanded significantly, including extending onto the south eastern corner of the site, and by 1965 extended further into the site along the eastern site boundary. Based on a 1975 aerial plan for the landfill, quarrying works were reported to extend approximately 40 – 50 m below the original ground surface (minimum floor elevation of 3.9 m AHD and wall heights of 45.2 m AHD to 52.8 m AHD).

Brick making activities ceased in 1977. By 1984, the site had been demolished and re-developed as Northcote Plaza, and comprised one large commercial building in the eastern half of the site and extending off-site to the north, and a car park in the western part of the site (also extending off-site to the north). The building footprint in 1984 matches the current building footprint at the site. A drainage plan, dated 1989, indicated that a Kmart retail store occupied part of the building, and that the eastern side of the building was fitted with domestic fittings, including basins, lavatories and a dishwasher.

The former quarry to the east of the site was purchased by the City of Northcote, and began operation as Northcote Municipal Tip in March 1979, although landfilling activities remaining small scale until 1982. The landfill operated between March 1979 and April 1998, and was believed to have been unlined, with waste placed directly against the rock base and walls. The former landfill operated as a solid inert (non-putrescible) landfill, however, it was known that significant amounts of garden cuttings, paper, timber and other biodegradable material were included within the landfill.

It was noted that at the commencement of filling of the quarry in 1979, the deeper parts of the quarry were flooded, in particular in the south of the quarry adjacent to Separation Street, with quarrying activities having likely lowered the water table.

Following the ceasing of landfill operations, the site was capped and rehabilitated between 1998 and 2002, with the capping comprising compacted clay cap of 500 mm thickness overlain by an approximately 200 mm thick layer of imported topsoil.

Landfill gas mitigation measures exist at the landfill but are unlikely to extend within the subject site, comprising a landfill gas drainage blanket to control the seepage of landfill gas from the cap and edges of the landfill. An investigation (assessor unknown) was conducted into the construction of the landfill gas management system in 2011, which did not identify any available construction drawings for the system. However, the gas drainage blanket was believed to extent over an area of approximately 11,000 m^2, and consists of a 1 m thick layer of clean gravel

(sized between 35 mm to 200 mm and less than 10% fine material), covered by a layer of geofabric material and a clay cap.

Additionally, perimeter and internal gas trenches were constructed at the former landfill prior to the installation of the final landfill cap for passive venting. The trenches were believed to have been installed at regular intervals across the former landfill. The internal trenches are reported to be approximately 1.0 m in width and 0.5 m in depth, with the perimeter trenches approximately 1.5 m in depth. All trenches were filled with aggregate (20 mm to 40 mm in size), with a slotted 100 mm diameter MDPE pipe placed in the upper half of the trenches to collect landfill gas for distribution to the passive venting system.

Gas seepage was reported near the southeast corner of the adjacent shopping plaza (Northcote Plaza) in 1986. As part of remedial works undertaken, a trench (5 m to 6 m in depth) was excavated in this area and backfilled with coarse gravel. The exact location of the trench wall is unknown, but based on trenching works completed on-site by Compass which did not intercept the trench, the wall is likely located directly off-site to the east.

6 Potential for Contamination

Based on the site history review, the identified main potential sources of contamination at the site are summarised in **Table 3** below.

Table 3 Summary of Potential On-site Sources of Contamination

Main Potential Sources	Main Potential Contaminants
Historical use of the site for commercial/industrial purposes, including as a brickworks (kilns and possible manufacturing, including use of possible use of heating oil) and as the Northcote Plaza and associated car parking.	Metals, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons.
Building construction and demolition rubble, and historic imported fill material.	Metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, asbestos and synthetic mineral fibres, and landfill gas (mainly methane and carbon dioxide) for the areas of buried waste along the western and eastern site boundaries.

The immediate area surrounding the site generally showed a high potential for the presence of off-site sources of contamination due to the former landfills located adjacent east and west of the site, the former brickworks activities located to the north and northwest of the site, including kilns, and the regional old sewer network. The main potential pathway for detrimental impact on the site from an off-site source was considered to be via migration of impacted groundwater or landfill gas (mainly methane and carbon dioxide).

7 Summary of Completed Compass Investigation Works

7.1 Soil Investigation

A limited intrusive soil investigation was completed by Compass at the site on 11 March 2022, comprising two trenches(TP1 and TP2) in the east of the site that were excavated in an attempt to find if any gas mitigation systems were installed on-site. The trenches were excavated to a depth of approximately 3.0 m to 3.2 m bgl which was the maximum reach of the excavator. No other trenches could be excavated in the area due to existing infrastructure and underground services.

During excavation works soils were collected from different depth intervals from the walls and base of each trench for analysis for a broad screen of potential contaminants. The analysis included four broad EPA Publication 1828.2 screens (comprising metals (antimony, arsenic, barium, beryllium, boron, cadmium, chromium (VI), hexavalent chromium, cobalt, copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), TBT, TRH, PAH, MAH, CHC, phenols (halogenated and non-halogenated, including cresols), OC, PCB, amenable and total cyanide, Di(2-ethyl-hexyl)phthalate, 2,4-DNT, hexachlorobutadiene, VOCs (incl TCB), formaldehyde, MEK, styrene, nitrobenzene, pH (as $CaCl_2$) and fluoride)) plus one duplicate and split, and three samples for PFAS (28). The sampling locations are shown in **Figure 2**.

Soil samples were collected directly from the excavator bucket. Sampling was conducted in a manner minimising the possible loss of volatile contaminants. All samples were screened in the field for volatile organics using a photoionisation detector (PID). The PID was fitted with a 10.6 eV lamp and was calibrated with isobutylene gas before each day of sampling. A clean pair of nitrile gloves were used to collect each sample to prevent cross contamination.

Soil samples were placed in sample jars with Teflon seals provided by the laboratory and appropriately prepared. PFAS samples were collected in PFAS free soil jars. All samples were identified with a unique sample number, which was documented on the sample label, soil sampling log and chain of custody form. Soil logs were filled in for each sampling location including a description of materials encountered, olfactory and visual evidence of contamination, PID readings, moisture conditions, sample intervals and numbers. All samples were placed in an ice-cooled esky immediately after collection. The samples were refrigerated and then transported on ice under a chain of custody procedure to the analytical laboratory. Bore logs and equipment calibration records are provided in **Attachment E**.

A layer of concrete (approximately 0.1 m in thickness) was encountered at the surface at both locations. Underlying the concrete slab, fill material was encountered to the base of both excavations, indicating a thickness of >2.9 m and >3.1 m, respectively. This was consistent with the locations of the trenches within the former quarry extent on-site and previous investigation works that encountered deeper fill along the eastern boundary. The fill comprised brown gravelly silt and silty clay, with variable amounts of fine to coarse-grained gravel. Inert inclusions of red brick, concrete fragments and wood were identified in the fill material at both locations, with TP1 also reporting an increasing number of loose bricks and bentonite at approximately 2.0 m bgl. No odours or staining were observed.

Soil vapour survey readings were generally reported between 0.0 ppm to 0.6 ppm, indicating low potential for volatile organic compounds.

All metal concentrations reported in the fill material were reported below the adopted ecological investigation levels (NEPM EILs), excluding nickel at TP1/0.3 (up to 63 mg/kg), which exceeded the NEPM EILs for both urban residential and public open space and commercial/industrial use. All concentrations of metals were reported below the human health investigation levels (NEPM HILs) for all land use scenarios.

All concentrations of cyanide, TRH, MAH, PAH, phenols (halogenated and non-halogenated), HVOLs, CHCs, OCPs, PCBs, solvents, explosives, phthalates, formaldehyde and tributyltin oxide were reported below the laboratory limit of reporting (LOR) and adopted assessment criteria.

Minor concentrations of PFAS compounds were reported in the three fill material samples analysed, including PFHxS up to 0.001 mg/kg, PFOS up to 0.0015 mg/kg, PFOA up to 0.0005 mg/kg, and sum of PFAS up to 0.0019 mg/kg. All detected concentrations were well below the adopted ecological and human health assessment criteria.

Calcium chloride pH extraction indicated neutral to alkaline pH conditions in the fill (7.9 to 9.2 standard units).
No potential asbestos containing materials (ACM) were visually observed at any of the sampling locations.

The tabulated soil analytical results are provided in **Attachment H** and laboratory reports are provided in **Attachment J**.

Based on the previous works and the Compass investigations, two cross-sections were completed across the site, one across the south parallel to Separation Street and one further to the north, refer to **Figure 5** and **Figure 6**. The cross sections showed the deeper fill within the areas of former quarry areas extending onto the site, as well as the depths of silty clay, sandstone and siltstone.

7.2 Groundwater Investigation

The intrusive groundwater investigation included the gauging and sampling of six existing wells installed during previous investigation works in December 2021 and February 2022. Tabulated analytical results and laboratory reports are provided in **Attachment I** and laboratory reports are provided in **Attachment K**. The construction details for the existing monitoring wells are provided in **Table 4** below, with well locations shown on **Figure 2**.

Table 4 Well installation details

Well ID	Depth (m bgl)[1]	Top of casing (m AHD)	Filter Pack Interval (m)[1]	Screened Interval (m)[1]	Casing depth (m)[1]	Bentonite Seal Depth (m)[1]	Installed by
DP02B	13.5	52.295	11.5 – 13.5	12.0 – 13.5	0.0 – 12.0	1.0 – 11.5	DP
DP08	7.5[2]	49.207	4.0 – 7.5	4.5 – 7.5	0.0 – 4.5	1.0 – 4.0	DP
FSG-BH01	21.4[3]	48.070	5.5 – 10.5	6.0 – 10.0	0.0 – 6.0	0.5 – 5.5	FSG
FSG-BH03	18.95	49.777	11.9 – 18.95	12.9 – 18.95	0.0 – 11.9	8.0 – 11.9	FSG
FSG-BH05	17.77[4]	49.341	3.5 – 10.5	4.0 – 10.0	0.0 – 4.0	2.5 – 3.5	FSG
FSG-BH09	13.0	49.196	5.0 – 13.0	6.5 – 12.5	0.0 – 6.5	3.0 – 5.0	FSG

Notes:
DP Douglas Partners.
1 Information provided on bore logs.
2 Borehole was drilled to 19.5 m bgl and backfilled with grout to 7.5 m bgl prior to well installation.
3 Borehole was drilled to 21.4 m bgl and backfilled with grout and bentonite to 10.5 m bgl prior to well installation.
4 Borehole was drilled to 17.77 m bgl and backfilled with grout and bentonite to 10.5 m bgl prior to well installation.

Based on the provided bore logs, wells DP02B, FSG-BH01, FSG-BH03, FSG-BH05 and FSG-BH09 were screened within the siltstone/sandstone of the underlying Melbourne Formation, while well DP08 was screened across the fill material and underlying silty clay, however the fill material was dry at this location. Bore logs are provided in **Attachment E**.

Gauging data reported depths to groundwater ranging between 3.250 m to 7.202 m below top of casing (m btoc) (42.453 – 46.827 m AHD). Based on the gauged water levels, the screened intervals were below the standing

water level at wells DB02B, FSG-BH01, FSG-BH03, and FSG-BH09. The existing wells along the east of the site confirm the fill material is dry at these locations, with no evidence of leachate present.

The groundwater elevation contours (refer to **Figure 3** and **Figure 4**) indicated that groundwater was flowing in an easterly direction, influenced by the adjacent (and downgradient) landfill. Based on topography and the hydrogeological assessment completed for the landfill to the east (refer to **Section 3.1.1**), the groundwater was likely discharging either to Darebin Creek, which was located approximately 2.5 km east of the site at its closest point, or potentially directly to the Yarra River, which was located approximately 2.03 km to the southeast of the site at its closest point. Due to the potential for groundwater discharge directly to the Yarra River, the water dependant ecosystems and species for the 'Central Foothills and Coastal Plains' segment of the groundwater environment was adopted.

Two groundwater sampling events were completed in December 2021 and February 2022. The groundwater sampling was generally conducted in accordance with EPA Publication 669 *Groundwater Sampling Guidelines* (EPA 2000). Prior to sampling, all groundwater wells were gauged with an oil/water interface meter to determine the depth to groundwater. Sampling was conducted via low-flow sampling technique (micropurge), excluding well FSG-BH03 in December 2021 where a disposable bailer was used to purge the well dry prior to sampling due to low recharge.

Low-flow sampling (micropurge) involved the purging and sampling of each well using a low-flow bladder pump with disposable bladders. All tubing (air lines and water lines) was replaced between each well. PFAS free consumables were used. During groundwater purging, field groundwater quality parameters were collected using a water quality meter with a flow through cell, including pH, REDOX, dissolved oxygen (DO), electrical conductivity and temperature. The water quality meter was calibrated prior to each monitoring event. The pump intake was generally placed within the screened interval of each well.

Groundwater samples were collected into appropriate containers provided by the analysing laboratories and placed immediately in an ice-cooled storage container. All samples for laboratory analysis of dissolved metals were filtered in the field through a 0.45 µm filter and placed in the appropriate laboratory prepared bottles. All samples were transported to the selected laboratory with the chain of custody documentation.

TDS concentrations ranged between 1,020 mg/L and 4,530 mg/L. The lowest TDS value (1,020 mg/L) was reported at FSG-BH01 during the February 2022 monitoring event, with the previous monitoring in December 2021 reporting a higher TDS value of 1,270 mg/L. All other groundwater monitoring wells also reported TDS values above 1,200 mg/L. Therefore, the groundwater was classified as Segment B.

Concentrations of TDS (1,020 – 4,530 mg/L) exceeded the water-based recreation (primary contact recreation) criterion of 600 mg/L at all wells and the agriculture and irrigation (stock watering) criterion of 2,000 mg/L at wells DP02B, FSG-BH03 and FSG-BH05. Concentrations of sulphate (152 – 900 mg/L) also exceeded the water-based recreation (primary contact recreation) criteria at wells DP02B, FSG-BH01 and FSG-BH09, with concentrations of chloride (92 – 2,420 mg/L) and sodium (216 – 1,360 mg/L) exceeding the water-based recreation (primary contact recreation) and long-term irrigation criterion at all wells, excluding wells FSG-BH01 and FSG-BH09 for chloride.

Field pH ranged between 5.49 to 7.38 standard units, indicating neutral to slightly acidic groundwater conditions. The groundwater pH fell outside of the recommended range for water-based recreation (primary contact recreation) and agriculture and irrigation (stock watering) of between 6.5 – 8.5 standard units at wells DP02B, FSG-BH01, FSG-BH05 and FSG-BH09 in the February 2022 monitoring event, with the pH at DP02B, FSG-BH01 and FSG-BH05 also falling outside the recommended range for agriculture and irrigation (irrigation) of 6.0 – 8.5 standard units.

Total nitrogen concentrations ranged between 1.8 – 104 mg/L, exceeding the water dependant ecosystems and species criterion of 1.1 mg/L at all wells, and the long-term irrigation criterion of 5.0 mg/L at wells DP02B, FSG-BH01 and FSG-BH09. The total nitrogen concentration at DP08 (2.4 – 3.3 mg/L) was predominantly ammonia (2.05 – 2.79 mg/L), which exceeded the water dependent ecosystems and species, water-based recreation (primary contact recreation) and agriculture and irrigation (stock watering) criteria, and only minor concentrations of nitrate (<0.01 – 0.05 mg/L) and no detectable nitrite (<0.01 mg/L). Concentrations of ammonia (0.81 – 1.0 mg/L) also exceeded the water dependent ecosystems and species, water-based recreation (primary contact recreation) and agriculture and irrigation (stock watering) criteria at FSG-BH03, and were similar in magnitude to the nitrate concentrations (1.05 – 1.3 mg/L), with only minor concentrations of nitrite (0.04 – 0.28 mg/L) which exceeded the water dependant ecosystems and species criterion.

At the remaining wells, the total nitrogen concentrations were predominantly nitrate (0.85 – 99.8 mg/L), with lower concentrations of nitrite (0.05 – 0.54 mg/L) and ammonia (0.02 – 0.84 mg/L). Concentrations of nitrate and/or nitrite exceeded the water dependent ecosystems and species criteria at DP02B, FSG-BH01, FSG-BH05 and FSG-BH09, with concentrations of nitrate at DP02B also exceeding the agriculture and irrigation (stock watering) criterion, and ammonia concentrations at FSG-BH09 also exceeding the water-based recreation (primary contact recreation) and agriculture and irrigation (stock watering) criteria.

Excluding FSG-BH03, most concentrations of metals were reported below adopted criteria, with the exception of aluminium (up to 0.45 mg/L), boron (up to 1.7 mg/L), cobalt (up to 0.004 mg/L), copper (up to 0.25 mg/L), iron (up to 0.256 mg/L), hexavalent chromium (up to 0.002 mg/L), lead (up to 0.004 mg/L), manganese (up to 0.445 mg/L), molybdenum (up to 0.031 mg/L), nickel (up to 0.073 mg/L), silver (up to 0.001 mg/L), vanadium (up to 0.0105 mg/L) and zinc (up to 0.964 mg/L) above one or more of the adopted assessment criteria.

It was noted that elevated concentrations of arsenic (0.001 – 0.017 mg/L), beryllium (<0.001 – 0.005 mg/L), total chromium (0.004 – 0.247 mg/L), cobalt (0.089 – 0.135 mg/L), lead (0.004 – 0.169 mg/L), manganese (2.07 – 2.19 mg/L), molybdenum (0.007 – 0.052 mg/L), nickel (0.039 – 0.2 mg/L), selenium (0.004 – 0.03 mg/L) and vanadium (<0.005 – 0.08 mg/L), and significantly elevated concentrations of aluminium (44.6 – 52.0 mg/L) and iron (73.0 – 86.6 mg/L) were reported at FSG-BH03 above the adopted assessment criteria, predominantly in the primary and duplicate samples. The concentrations were generally significantly higher than all other wells, although well FSG-BH03 was not located within the former quarry/landfill extent on-site, and the geochemical conditions in the aquifer were neutral (pH of 7.38 units) and only mildly reducing (-74.5 mV). However, FSG-BH03 was bailed dry prior to sampling and was also noted to contain high amounts of silt at the base of the well. As a result, it is likely that these elevated concentrations of metals were likely due to suspended colloidal material rather than representative of dissolved concentrations. This will be confirmed by further monitoring at this well, as FSG-BH03 could not be sampled in February 2022 due to issues accessing the well. The well will be redeveloped prior to the next sampling event.

Minor concentrations of TRH C10-C16 up to 0.61 mg/L, TRH C10-C16 less naphthalene (F2) up to 0.61 mg/L, and TRH C16-C34 up to 0.68 mg/L were reported at wells DP02B and DP08. The concentrations of TRH C10-C40 at DP02B (up to 1.29 mg/L) located directly upgradient off-site exceeded the water-based recreation (primary contact recreation) and agriculture and irrigation (stock watering) criteria in both monitoring rounds, although it was noted that following silica gel clean up, concentrations of TRH C10-C40 were below criteria (0.34 mg/L), indicating the majority was organic hydrocarbons. All BTEX concentrations were below the laboratory limit of reporting (LOR).

Volatile fatty acids (as acetic acid) were reported at all wells, ranging between <5 – 90 mg/L.

PFAS compounds were reported in groundwater, with total PFAS concentrations up to 1.671 µg/L. Elevated concentrations of PFOS (up to 0.22 µg/L) were reported above the water dependent ecosystems and species criterion at all wells excluding FSG-BH05, which reported concentrations below the laboratory LOR (<0.002 µg/L).

Elevated concentrations of sum of PFHxS and PFOS (up to 0.521 µg/L) above the agriculture and irrigation (stock watering) criteria were also reported at wells DP08, FSG-BH01, FSG-BH03 and FSG-BH09.

Detections of dissolved methane were reported at DB08 and FSG-BH03 up to 0.832 mg/L.

All concentrations of cyanide, BOD, PAH, phenols (halogenated and non-halogenated), HVOLs, CHCs, herbicides, alcohols, and solvents were reported below the laboratory LOR, excluding minor detections of bromodichloromethane (up to 0.006 mg/L), chlorodibromomethane (0.002 mg/L), chloroform (up to 0.013 mg/L), 2-propanol (0.01 mg/L) and acetone (0.009 mg/L) which were reported at FSG-BH01, FSG-BH03, FSG-BH05 and/or FSG-BH09. All concentrations were reported below the adopted assessment criteria.

7.3 Landfill Gas Investigation

The landfill gas investigation included two rounds of monitoring of 15 existing landfill gas bores installed during previous investigation works (DP08, DP10-DP17, DP19, FSG-BH01, FSG-BH03, FSG-BH05, FSG-BH09 and GB6A) on 27 January and 2 March 2022 during low barometric pressure, leak testing of seven of the dedicated landfill gas bores (DP10, DP11, DP14, DP15, DP17, DP19 and GB6A), and two rounds of monitoring of underground services in the vicinity of the site and former landfills. Tabulated results and field records are provided in **Attachment F**. The construction details for the existing monitoring wells are provided in **Table 5** below, with bore locations shown in **Figure 2** and underground services monitoring locations shown in **Figure 7**.

Additionally, previous landfill gas monitoring was also completed by Douglas Partners, as discussed in **Section 3**.

Table 5 Bore installation details

Bore ID	Depth (m bgl)	Filter Pack Interval (m)[1]	Screened Interval (m)[1]	Casing depth (m)[1]	Bentonite Seal Depth (m)[1]	Installed by
GB6A	9.8[2]	NA	1.5 – 9.8[2]	0.0 – 1.5[2]	0.0 – 1.0[2]	Unknown
DP08	7.5[3]	4.0 – 7.5	4.5 – 7.5	0.0 – 4.5	1.0 – 4.0	DP
DP10	0.5	0.25 – 0.5	0.3 – 0.5	0.0 – 0.3	0.1 – 0.25	DP
DP11	1.0	0.4 – 1.0	0.5 – 1.0	0.0 – 0.5	0.2 – 0.4	DP
DP12	7.5	1.2 – 7.5	1.5 – 7.5	0.0 – 1.5	0.2 – 1.2	DP
DP13	8.0	1.8 – 8.0	2.0 – 8.0	0.0 – 2.0	0.2 – 1.8	DP
DP14	2.0	0.4 – 2.0	0.5 – 2.0	0.0 – 0.5	0.2 – 0.4	DP
DP15	2.8	0.6 – 2.8	0.8 – 2.8	0.0 – 0.8	0.3 – 0.8	DP
DP16	8.0	1.8 – 8.0	2.0 – 8.0	0.0 – 2.0	0.2 – 1.8	DP
DP17	9.0[4]	0.5 – 2.6	0.6 – 2.6	0.0 – 0.6	0.2 – 0.5	DP
DP19	2.3[4]	0.5 – 2.0	0.5 – 2.0	0.0 – 0.5	0.15 – 0.45	DP
FSG-BH01[7]	21.4[5]	11.9 – 18.95	12.9 – 18.95	0.0 – 11.9	8.0 – 11.9	FSG
FSG-BH03[7]	18.95	3.5 – 10.5	4.0 – 10.0	0.0 – 4.0	2.5 – 3.5	FSG
FSG-BH05[7]	17.77[5]	5.0 – 13.0	6.5 – 12.5	0.0 – 6.5	3.0 – 5.0	FSG
FSG-BH09[7]	13.0	11.9 – 18.95	12.9 – 18.95	0.0 – 11.9	8.0 – 11.9	FSG

Notes:

DP Douglas Partners.

1 Information derived from the bore log.

2 Information provided within the landfill gas risk assessment report.

3 Borehole was drilled to 19.5 m bgl and backfilled with grout to 7.5 m bgl prior to well installation.

4 Borehole was assumed to be backfilled to bottom of screened interval, but no information provided to confirm.

5 Borehole was drilled to 21.4 m bgl and backfilled with grout and bentonite to 10.5 m bgl prior to well installation.

6 Borehole was drilled to 17.77 m bgl and backfilled with grout and bentonite to 10.5 m bgl prior to well installation.

7 Installed with groundwater monitoring well consumables.

The bores were monitored using a GA5000 Landfill Gas Analyser, which measured concentrations of methane (% vol.), carbon dioxide (% vol.), oxygen (% vol.), carbon monoxide (ppm), hydrogen sulphide (ppm), flow (L/hr), and atmospheric and relative pressures. A background reading was obtained prior to the commencement of monitoring, including a recording of the atmospheric and relative pressures. The GA5000 was purged with atmospheric air between each bore until ambient air readings were obtained.

The landfill gas analyser was then connected to the bore and an initial reading was obtained, including peak and stabilised concentrations. Once connected to the bore, the relative pressure (including whether the pressure was +/-) and a flow reading (in L/hr) were recorded, followed by landfill gas readings. The monitoring commenced for a period of three minutes with peak and stabilised readings recorded. If readings did not stabilise within three minutes, then monitoring of the bore continued until the bore stabilised. Equipment calibration records and barometric pressure data for the monitoring period are provided in **Attachment F**.

Over the two monitoring events, non-detect methane concentrations (0.0% v/v) were generally reported at all landfill gas bores, excluding bore DP15 (up to 13.9% v/v), where peak methane concentrations exceeded the BPEM Action Level of 1.0% v/v during both monitoring events. Peak carbon dioxide concentrations ranged between 0.1 – 12.1% v/v, with the highest concentrations reported at DP14 (12.0 – 12.1% v/v) and DP15 (2.6 – 5.8% v/v). It was noted that lower methane (up to 5.0% v/v) and carbon dioxide (up to 2.6% v/v) were reported at DP15 in March 2022, with monitoring over a ten minute period reporting methane concentrations below 1.0% v/v after five minutes and carbon dioxide concentrations below 1.0% v/v after three minutes.

Bores DP14 and DP15 were located in the northwest of the site, outside of any of the previous quarry extents within the site boundaries and therefore any potential filling/waste mass associated with the former landfilling. However, hydrocarbon odours were identified in the fill material and natural soils at both DP14 (0.26 – 1.6 m bgl) and DP15 (0.17 – 1.8 m bgl) during previous investigations, with petroleum hydrocarbon impacts (TRH F2, TRH C16-C34 and naphthalene) also identified in the soil (refer to **Section 3.2.2**). These impacts were identified within the screened interval of both DP14 (screened between 0.5 – 2.0 m bgl) and DP15 (screened between 0.8 – 2.8 m bgl), and therefore, based on the presence of petroleum hydrocarbon impacts in the soils, the rapidly decreasing landfill gas concentrations over sustained monitoring and the lack of elevated landfill gas at surrounding locations, the detections of methane and carbon dioxide at DP14 and DP15 were not considered representative of landfill gas, but likely due to the petroleum hydrocarbon contamination in soil. To confirm this, further sampling will be completed at these locations (refer to **Section 8**).

Leak testing of seven existing landfill gas bores (DP10, DP11, DP14, DP15, DP17, DP19 and GB6A) was conducted with a helium tracer in January 2022 to ensure the bores were constructed adequately. Any leaks within the bore construction may allow ambient air to be drawn into the bore during sampling, therefore interfering with the integrity of the results obtained.

A plastic shroud was placed over the bore. The shroud contained two inlets, one for an air pump / helium meter (GasCheck 5000 IS) connected to the bore via a quick connect fitting and the second used for the introduction of helium into the monument. Helium was introduced into the bore at the rate of 1.0 L/min, creating a helium enriched atmosphere, a SKC Air Pump was connected to the bore via the quick connect brass fitting and approximately one system volume purged, a helium meter was connected to the cap of the bore (via the quick connect fitting) and readings of the helium concentrations within the bore were taken (as ppm) for a minimum of 60 seconds and until stable. Detections of significant concentrations of helium (>5% or 50,000 ppm) within the bore was considered to represent a deficiency within the bore construction (e.g. in adequate seal, casing defect). During the purging and introduction of helium into the bore, the ambient air was measured using a helium reader to ensure minimum leakage. The results of the helium leak testing are presented in **Table 6** below, and field forms and calibration certificates are provided in **Attachment F**.

Table 6 Helium Leak Testing Results

Bore ID	Date Tested	Bore Purge Rate (L/min)	Bore Volume Purged (L)	Highest Helium Reading in Bore	Pass/Fail
DP10	28/01/2022	1.0	4.0	125 ppm (0.013%)	Pass
DP11	28/01/2022	1.0	8.0	1,075 ppm (0.11%)	Pass
DP14	28/01/2022	1.0	8.0[1]	500 ppm (0.05%)	-[1]
DP15	28/01/2022	1.0	17.0	700 ppm (0.07%)	Pass
DP17	28/01/2022	1.0	15.0	475 ppm (0.048%)	Pass
DP19	28/01/2022	1.0	13.0	25 ppm (0.0025%)	Pass
GB6A	28/01/2022	1.0	10.0	25 ppm (0.0025%)	Pass

Notes:

1 The pump failed during leak testing at DP14, with only 8.0 L purged of the 12.0 L system volume.

Two rounds of underground services monitoring were also completed in the vicinity of the site and adjacent landfills during low barometric pressure on 27 January and 2 March 2022. The monitoring was undertaken by a GA5000 unit to monitor for methane, carbon dioxide and carbon monoxide (ppm). Field forms and equipment calibration records are provided in **Attachment F** and monitoring locations are shown on **Figure 7**.

All underground services reported non-detect concentrations of methane (0.0% v/v) and carbon monoxide (0 ppm), and only minor concentrations of carbon dioxide (up to 0.2% v/v) during both monitoring events, confirming that no landfill gas migration was occurring along the accessible underground services.

The barometric pressure data for the monitoring period was obtained for the Melbourne (Olympic Park) weather station (086338) from the Bureau of Meteorology, and is presented in **Attachment F**. A summary of the barometric pressure data for the period of landfill gas monitoring is presented in **Table 7** below.

Table 7 Summary of Barometric Pressure Data

Monitoring Date	9 am		3 pm		Direction of Change
	Barometric Pressure (hPa)	Wind speed (km/h) and Direction	Barometric Pressure (hPa)	Wind speed (km/h) and Direction	
27 January 2022	1009.5	17 N	1006.4	22 N	Decreasing
02 March 2022	1013.4	6 NNE	1011.4	4 S	Decreasing

Both monitoring events were conducted during periods of low to moderate and falling barometric pressure.

8 Proposed Scope of Next Stage of Works

Based on the investigations completed to date, the next stage of works is to address the identified data gaps from previous investigations, to delineate the identified petroleum hydrocarbon impacts at DP14 and DP15, and to increase the sampling density across the site to provide appropriate site coverage and to aid completion of the Environmental Audit.

The further proposed works are to:

- Further investigate the identified petroleum hydrocarbon impacted soils at DP14 and DP15 in the northwest of the site. This will comprise installation of groundwater wells, delineation soils bores, and general gas testing existing bores DP14 and DP15 to appropriately investigate the area.
- Further investigate soil conditions across the site by completing a higher density of soil bores to provide appropriate site coverage.
- Further investigate groundwater conditions across the site by installation and monitoring of additional targeted groundwater monitoring wells.
- Further investigate landfill gas conditions across the site by installation and monitoring of additional targeted landfill gas bores.

Our proposed scope of works and methodology are detailed in the following sections. Further works maybe required following the results of these further investigations. Our proposed additional locations are shown in **Figure 8**.

8.1 Further Desktop Review

Three completed Environmental Audit reports in the closest vicinity to the site will be reviewed to obtain data for the regional groundwater quality.

A groundwater data base search will be completed to confirm any groundwater extraction wells within 2 km of the site, with any wells presented on a CAD plan.

8.2 Scope and Methodology of Further Soil Investigation

8.2.1 Sample Locations

Based on the area of the site (approximately 13,285 m^2), 25 grid-based sample locations are recommended by Australian Standard AS4482.1-2005. Based on the density of previous sampling locations across the site, a further six grid-based sample locations are required to provide the required sample density.

We have also allowed for a further **20** soil bore locations to appropriately assess the site, including:

- Six soil bores locations to delineate the petroleum hydrocarbon contamination identified in the northwest of the site at DP14 and DP15.
- Two soil bores to target previous sampling locations DP10 and DP11 where natural soils were not intercepted.

- Six soil bores that will be converted into groundwater monitoring wells, including targeting DP14 and DP15 to vertically delineate the identified petroleum hydrocarbon impacts.
- Five soil bores to improve site coverage.
- One soil bore that will be converted into a landfill gas bore along the western site boundary.

The proposed locations are detailed in **Figure 8**. It is important to note that there is currently no access in the western part of the main building where Coles currently operates, hence the groundwater wells and landfill gas bores have been moved directly outside the building. The proposed soil bores within the building will be installed at a later date when site access is available.

8.2.2 Soil Sampling Methodology

Soil samples will be collected from a Geoprobe using disposable push tube liners for the top 2.0 – 3.0 m for all locations aiming to intercept the underlying natural soils or maximum depth of contamination for areas outside the buried waste mass, and from solid augers for any locations with a target depth greater that 3.0 m bgl (wells and landfill gas bores). The samples will be collected from all soil/fill horizons encountered, with the minimum sampling depths as follows: 0.2 m, 0.5 m, and 1.0 m, and at 1.0 m depth intervals thereafter to the target depth. All samples will be subject to testing in the field for volatile organics using a photoionisation detector (PID). The PID will be calibrated before each day of sampling.

Soil samples will be placed in sample jars with Teflon seals provided by the laboratory and appropriately prepared. PFAS samples will be placed into Teflon free jars provided by the laboratory specifically for PFAS analysis. All samples will be identified with a unique sample number, which will be documented on the sample label, bore log and chain of custody form. A bore log will be filled in for each bore including a description of materials encountered, olfactory and visual evidence of contamination, PID readings, moisture conditions and water levels, sample intervals and numbers.

All samples will be placed in an ice cooled cool box immediately after collection. The samples will be refrigerated overnight and transported on ice under chain of custody procedure to the analytical laboratory on the following day.

All field sampling equipment will be decontaminated prior to use at each location to prevent cross contamination. Decontamination of field equipment will involve scrubbing in clean potable water, scrubbing in a PFAS free solution and potable water, and rinse in clean potable water.

The soil investigation is proposed to be completed in two separate mobilisations, due to no current access within the Coles occupied building in the west of the site.

8.2.3 QC Samples

As part of the soil sampling program, the following QC samples will be collected:

- Field duplicate and split samples at a rate of 1 in 20 samples collected.
- Equipment rinsate samples at a rate of 1 per day only if a hand auger is used (currently not expected).
- Trip blank samples at a rate of one per day.

8.2.4 Laboratory Analysis Program

The primary laboratory for the soil investigation program will be ALS, with Eurofins selected as the secondary laboratory.

The proposed analysis schedule has generally been based on the broad potential contaminants at the site based on the site history review, and soil and groundwater investigations completed to date. This schedule will be amended as required based on the observations made during soil sampling. The number of samples analysed will be governed by the number of fill/soil layers, any visual or olfactory evidence of contamination. We have allowed for two sample depths to be analysed for the shallow soil bores and four sample depths to be analysed for the wells and landfill gas bores.

A summary of the proposed analytical schedule is provided in **Table 8** below.

Table 8 Proposed Further Soil Investigation Laboratory Program

Analyte	Primary samples	Duplicate and split samples	Trip blank samples	Total
Gridded Soil Bores (5)				
EPA 1828.2 Screen[1]	5	-	-	5
Metals screen	5	2 (1+1)	-	7
TRH/BTEXN	5	2 (1+1)	1	8
PAH	5	2 (1+1)	-	7
PFAS (28)	5	-	-	5
ASLP (acetate buffer and DI water) metals	2	-	-	2
ASLP (acetate buffer and DI water) PAH	2	-	-	2
Target Locations of DP14 and DP15 (6)				
Metals screen	12	2 (1+1)	-	14
TRH/BTEXN	12	2 (1+1)	1	15
PAH	12	2 (1+1)	-	14
Vertical Delineation Bores of DP10 and DP11 (2)				
Metals screen	4	-	-	4
TRH/BTEXN	4	-	1	4
PAH	4	-	-	4
PFAS (28)	2	-	-	2
Groundwater Well and Landfill Gas Bore Locations (7)				
EPA 1828.2 Screen[1]	7	-	-	7
Metals screen	21	2 (1+1)	-	23
TRH/BTEXN	21	2 (1+1)	4	27
PAH	21	2 (1+1)	-	23
PFAS (28)	7	-	-	7
Sulphate (as SO4)	8	-	-	8
pH as CaCl2	8	-	-	8
% clay, CEC and TOC	6	-	-	6

Analyte	Primary samples	Duplicate and split samples	Trip blank samples	Total
ASLP (acetate buffer and DI water) metals	6	-	-	6
ASLP (acetate buffer and DI water) PAH	2	-	-	2

Notes:

1 EPA Publication 1828.2 Screen: metals (antimony, arsenic, barium, beryllium, boron, cadmium, chromium (VI), hexavalent chromium, cobalt, copper, lead, mercury, molybdenum, nickel, tin, selenium, silver and zinc), TBT, TRH, PAH, MAH, CHC, phenols (halogenated and non-halogenated, including cresols), OC, PCB, amenable and total cyanide, Di(2-ethyl-hexyl)phthalate, 2,4-DNT, hexachlorobutadiene, VOCs (incl TCB), formaldehyde, MEK, styrene, nitrobenzene, pH (as $CaCl_2$) and fluoride.

2 Metals: antimony, arsenic, barium, beryllium, boron, cadmium, chromium (III+VI), cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, tin, vanadium, and zinc.

8.3 Scope and Methodology for Further Groundwater Investigation

8.3.1 Well Locations

Six additional groundwater wells are proposed, including:

- ❒ Two monitoring wells to target bores DP14 and DP15, where petroleum hydrocarbon contamination was identified.
- ❒ One monitoring well in the southeast of the site, within the extent of the former quarry on-site, to assess groundwater conditions within the waste mass.
- ❒ Two monitoring wells adjacent to the southern site boundary to assess groundwater conditions cross-gradient of the site and for appropriate site coverage.
- ❒ One monitoring well along the western site boundary to assess groundwater conditions upgradient of the site in the north of the waste mass.

Soil samples will be collected from the proposed locations, as detailed above. The locations of the proposed monitoring wells will be dependent on underground services.

8.3.2 Well Installation

The proposed groundwater wells will be installed under a bore construction licence to be obtained from Southern Rural Water. The groundwater wells will be installed using a Geoprobe for the top 3.0 m, with a solid auger/air hammer thereafter, under the supervision of Compass Environmental scientist/engineer. The drilling equipment will be decontaminated prior to installation of each well to prevent cross contamination using high pressure water wash. The wells will target up to approximately 10.5 m depth, approximately 3.0 m below the standing water level and at the proposed maximum basement excavation extent.

The newly installed wells will be developed by surging and bailing of each well until extracted water has low turbidity. Additionally, the six existing wells (DP02B, DP08, FSG-BH01, FSG-BH03, FSG-BH05 and FSG-BH09) will be re-developed prior to the next sampling round due to the presence of colloidal material. In general, well development will continue until a minimum of 10 bore volumes are removed or the well is dry. Well development will be conducted using disposable bailers. A well development form will be filled in for the well.

All extracted groundwater will be stored in 20 L drums for off-site disposal.

8.3.3 Well Surveying

The six new groundwater wells will be surveyed by licensed surveyors. The well surveying will include the measurement of the elevation of top of bore casing and ground level at each well location referenced to the Australian Height Datum (AHD). A coordinate location of each bore will be to MGA coordinates.

8.3.4 Groundwater Sampling

We have allowed for **three** rounds of gauging and sampling of all wells (seven existing and six new) to allow for temporal groundwater data to be collected (will mean five rounds of sampling for six existing wells). We will also include well FSG-BH07 in the future monitoring events as this well is screened within the standing water level, while adjacent well DP02 has a significantly submerged screen.

The groundwater sampling will be conducted in accordance with EPA Publication 669 Groundwater Sampling Guidelines. Prior to sampling and purging the wells will be gauged to determine a standing water level in each to allow groundwater flow direction to be confirmed. Gauging will be undertaken using an interface meter.

The monitoring wells will be purged and sampled using a low flow sampling technique (micropurge). A bladder pump with disposable bladders will be used for pumping. New tubing (air lines and water lines) will be used for the sampling. PFAS free consumables will be used. During purging field water quality parameters will be collected including pH, REDOX, dissolved oxygen (DO), electrical conductivity and temperature. A flow through cell will be used for this purpose. The intake of the sampling pump will be placed within 1.0 m of the measured standing water level, with the drawdown being kept to the minimum (0.1 m).

Groundwater samples will be collected in appropriate containers provided by the analysing laboratories and placed immediately in ice cooled eskies. All samples for laboratory analysis for metals will be filtered in the field through a new 0.45 µm filter.

8.3.5 QC samples

As part of the groundwater sampling program, the following QC samples will be collected:

- ❒ One field duplicate and one split sample will be collected (at a rate of 1 in 20 samples) for the analytes specified in the table below.
- ❒ Equipment rinsate samples at a rate of one per day for the analytes specified in the table below.
- ❒ Trip blank samples at a rate of one day for the analytes specified in the table below.

8.3.6 Laboratory Analysis Program

The primary laboratory for the groundwater investigation program will be ALS Environmental, with Eurofins selected as a secondary laboratory. The proposed analytical schedule is based on exceedences reported from the two existing groundwater monitoring events and potential contaminants of concern.

A summary of the proposed analytical schedule is provided in **Table 9** below.

Table 9 Proposed Groundwater Investigation Laboratory Program – per event

Analyte	Primary samples	Duplicate and split samples	Rinsate Samples	Trip Blank Samples	Total
TRH/BTEXN	13	2 (1+1)	4	4	23
Metals (including hexavalent chromium)	13	2 (1+1)	4	-	19
HVOLs	13	2 (1+1)	4	-	19
PAH	13	2 (1+1)	4	-	19
Nitrogen screen	13	2 (1+1)	4	-	19
BOD	13	2 (1+1)	4	-	19
COD	13	2 (1+1)	4	-	19
Dissolved methane	13	2 (1+1)	4	-	19
Volatile Fatty Acids	13	2 (1+1)	4	-	19
TOC	13	2 (1+1)	4	-	19
PFAS (28 low level)	13	2 (1+1)	4	-	19
Non chlorinated solvents	13	2 (1+1)	4	-	19
TDS	13	-	-	-	13
Major anions and cations (includes sulphate)	13	-	-	-	13

Notes:

Metals (aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (III+VI), hexavalent chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, tin, vanadium and zinc).

The schedule will be amended as required based on any visual or olfactory evidence of contamination in the field during sampling.

8.4 Scope and Methodology for Further Landfill Gas Investigation

8.4.1 Landfill Gas Bore Locations

To further assess current risk of landfill gas to the site from the former adjacent landfills, additional landfill gas bores will be installed, including:

- One additional landfill gas bore is proposed in the west of the site adjacent well DP02 to assess risk from the western landfill. This bore will target to directly above the groundwater level (5.0 m) and will be screened from 1.5-5.0 m.

- Four groundwater wells will be installed as dual purpose landfill gas bore and groundwater wells, as shown in **Figure 8**. The bores will be installed with groundwater screens and sand to 0.5 m above the groundwater level, and with landfill gas screens and gravel above the groundwater table to a maximum of 1.5 m below ground level (will be confirmed during drilling).

The bores will comprise 50 mm diameter Class 18 uPVC casing (un-slotted) from the surface to a depth of 1.5 m below ground level (wells maybe screened deeper), followed by a screened (3 mm slotted) interval. A gravel pack (comprising 5-10 mm washed non-calcareous sub-rounded gravels) will be placed around the screened interval followed by a bentonite seal (granular form), which will be placed above the screened interval to 0.1 m depth to complete each bore. The bores will be finished with a 0.1 m collar of grout and a lockable monument. Each bore will be fitted with a screw gas cap (ex-cap) with an in-built brass sampling port that seals when the quick-connect fitting is not attached.

8.4.2 Leak Testing

Further leak testing using a helium tracer will be completed on all remaining existing landfill gas bore locations which have previously not been leak tested (DP08, DP12, DP13, DP16, FSG-BH01, FSG-BH03, FSG-BH05 and FSG-BH09), and including the new landfill gas bores detailed above. The helium leak testing will include:

- ❒ Each gatic will be sealed using an air-tight cover (shroud). The shroud will have one inlet point for the introduction of helium into the gatic surrounding the PVC casing. A helium meter (GasCheck 5000 IS) will be connected to the bore via a quick connect fitting extruding above the shroud.

- ❒ Helium will be introduced at the rate of 1.0 L/min, creating a helium enriched atmosphere within the shroud. The rate of helium introduction will be monitored via a flow regulator connected to the helium tank. Once a helium enriched atmosphere is achieved, a SKC Air Pump (or similar) will be connected to the bore via the quick connect brass fitting and approximately one bore volume of air purged from the bore at a maximum rate of 4.0 L/min.

- ❒ In order to detect any deficiencies within the bore construction, a helium meter will be connected to the cap of the bore (via the quick connect fitting) and readings of the helium concentrations within the bore taken (as ppm) for a minimum of 60 seconds and until stable. Detections of significant concentrations of helium (>5% or 50,000 ppm) within the bore is considered to represent a deficiency within the bore construction (e.g. inadequate seal, casing defect). A helium reading will be collected from each bore before helium is introduced to the shroud to confirm background conditions and assess the potential for cross-sensitivity with landfill gas.

- ❒ During the purging and introduction of helium into the bore, the ambient air will be measured using a helium reader to ensure minimum leakage.

- ❒ If a leak is detected, the bore will be repaired, and leak tested again prior to further monitoring events being completed.

8.4.3 Landfill Gas Bore Sampling Methodology

The newly installed landfill gas bores will be left for a period of one week to equilibrate with the surrounding formation. **Three** rounds of manual monitoring of the subsurface geology will be undertaken in accordance with EPA Publication 1684 – *Landfill Gas Fugitive Emissions Monitoring Guidelines*. Each monitoring round will comprise the 15 existing landfill gas bores and the new bores detailed above. Specifically, each landfill gas bore monitoring event will include:

- ❒ The monitoring of the landfill gas bores will be undertaken using a GA5000 Landfill Gas Analyser, which measures methane (% vol.), carbon dioxide (% vol.), oxygen (% vol.), flow (L/hr), carbon monoxide (ppm), hydrogen sulphide (ppm), and atmospheric and relative pressures (mb).

- ❒ All field equipment will be calibrated prior to use.

- An initial reading is to be undertaken in ambient air away from the site prior to the commencement of sampling to confirm the instrument is reading concentrations which are indicative of prevailing background conditions.

- Prior to commencing monitoring, all bores will be inspected for any obvious deficiencies in the bore construction (e.g. missing caps, broken casing, etc.).

- The GA5000 instrument will be purged with atmospheric air until a methane reading of 0.0% vol. and a carbon dioxide reading of approximately 0.0 – 0.1% vol. is obtained.

- Once connected to the bore the relative pressure (including whether the pressure is +/-) and a flow reading (in +/- L/hr) will be recorded.

- The monitoring will then commence for a minimum period of three minutes to obtain readings including peak and stabilised concentrations of the above parameters. If the monitored gas concentrations and flow have not reached stabilised concentrations after three minutes of continuous monitoring further monitoring will be completed.

- Each monitoring event of all bores is to occur when barometric pressure is low and falling. Meteorological data (including barometric pressure) is to be downloaded from the Bureau of Meteorology for the period of monitoring to verify field-monitoring results.

- Field observations are to be recorded during sampling including start and finish time, weather conditions, current ground conditions, appearance of monitoring site, signs of fugitive emissions (detectable odour etc.).

Additional analysis is also proposed for existing locations DP14 and DP15 to confirm the methane and carbon dioxide is cross-contamination from the identified petroleum hydrocarbons and not sourced from the adjacent former landfills. One round of general gases sampling will be completed for laboratory analysis. The samples will be collected in FlexFoil bags and will be transported to SGS's NATA registered Melbourne Laboratory under a chain of custody procedure. The samples will be analysed for general gases (argon, butane, carbon dioxide, carbon monoxide, ethane, ethene, methane, oxygen, helium, hydrogen, nitrogen and pentane).

Additionally two landfill gas bores will be selected for continuous gas monitoring for two weeks each using an Ambisense continuous monitor, to confirm the results of the manual monitoring events. The bores will be selected following the additional monitoring detailed above and will be confirmed with yourself prior to proceeding.

8.4.4 Underground Services Monitoring

Three further rounds of monitoring are proposed of any accessible underground services on and in the vicinity of the site, consistent with previous monitoring. The monitoring will be conducted using an Inspectra Laser for methane.

8.5 Reporting

Regular email updates will be provided following each stage of works for your review. Following the completed scope of works, a Detailed Site Investigation (DSI) report will be prepared, in accordance with NEPM 1999 (as amended) requirements, which will also include soil, groundwater and landfill gas concentration plans, and a detailed Conceptual Site Model cross section.

Please feel free to give us a call if you require any further information.

For and on behalf of
COMPASS ENVIRONMENTAL PTY LTD





Stephen Harvey
Senior Associate
Senior Environmental Scientist

Damon Scoffern
Director
Principal Environmental Scientist

Figures

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Figure 5	Cross Section – A-A’
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Figure 8	Proposed Additional Sample Locations

Attachments

Attachment A	DELWP Groundwater Resource Report
Attachment B	Historical Aerial Photographs
Attachment C	Drainage Plans
Attachment D	Available Historical Information
Attachment E	Bore Logs
Attachment F	Landfill Gas Monitoring Forms, BoM Data and Calibration Forms
Attachment G	Groundwater Monitoring Field Forms, Well Survey Data and Calibration Certificates
Attachment H	Tabulated Soil Results
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Attachment K	Compass Groundwater Laboratory Reports
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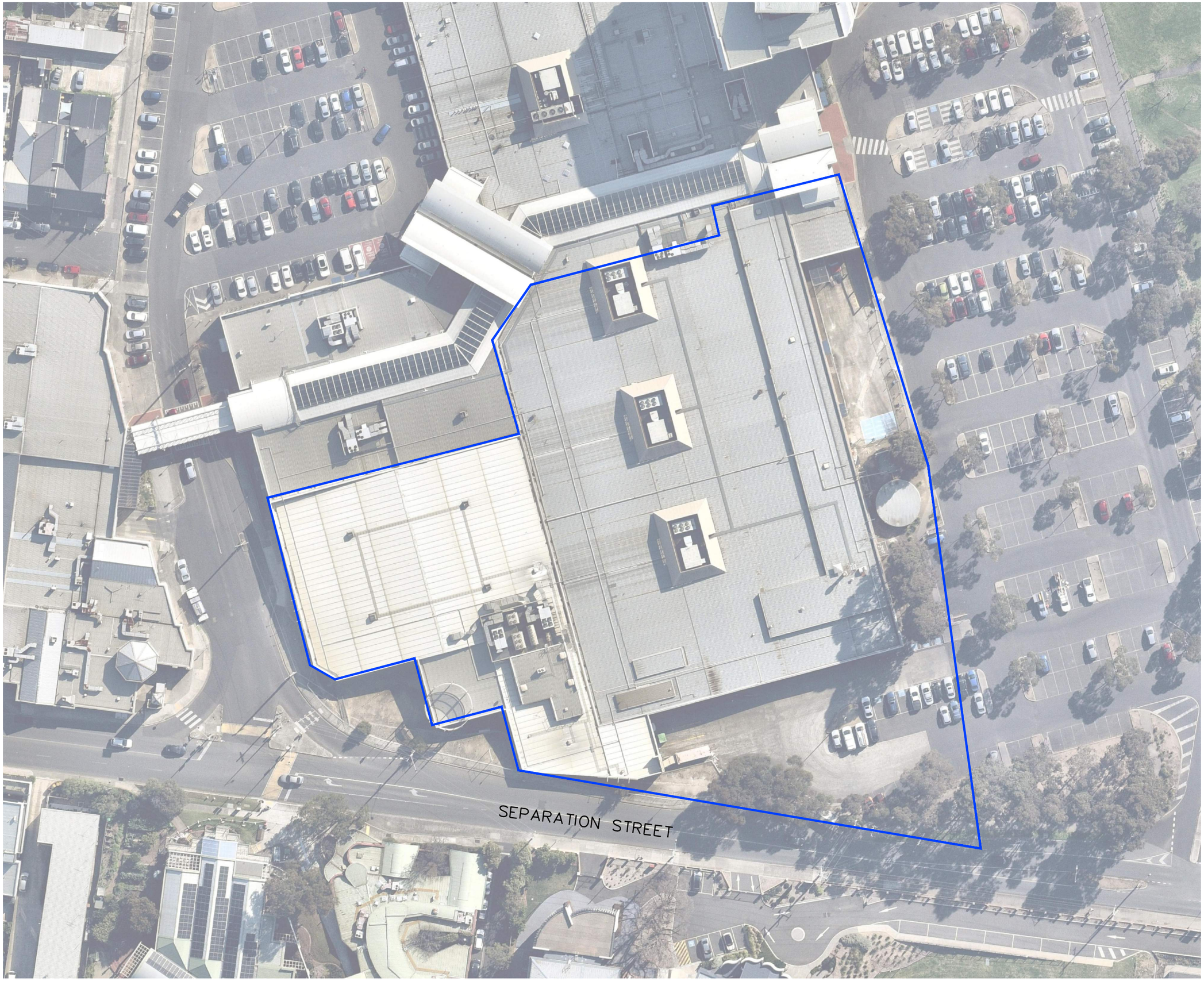
FIGURES



NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**SITE LAYOUT**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	21 October 2021
FILE REFERENCE:	21135_DRW01V01.DWG
FIGURE NUMBER:	**1**

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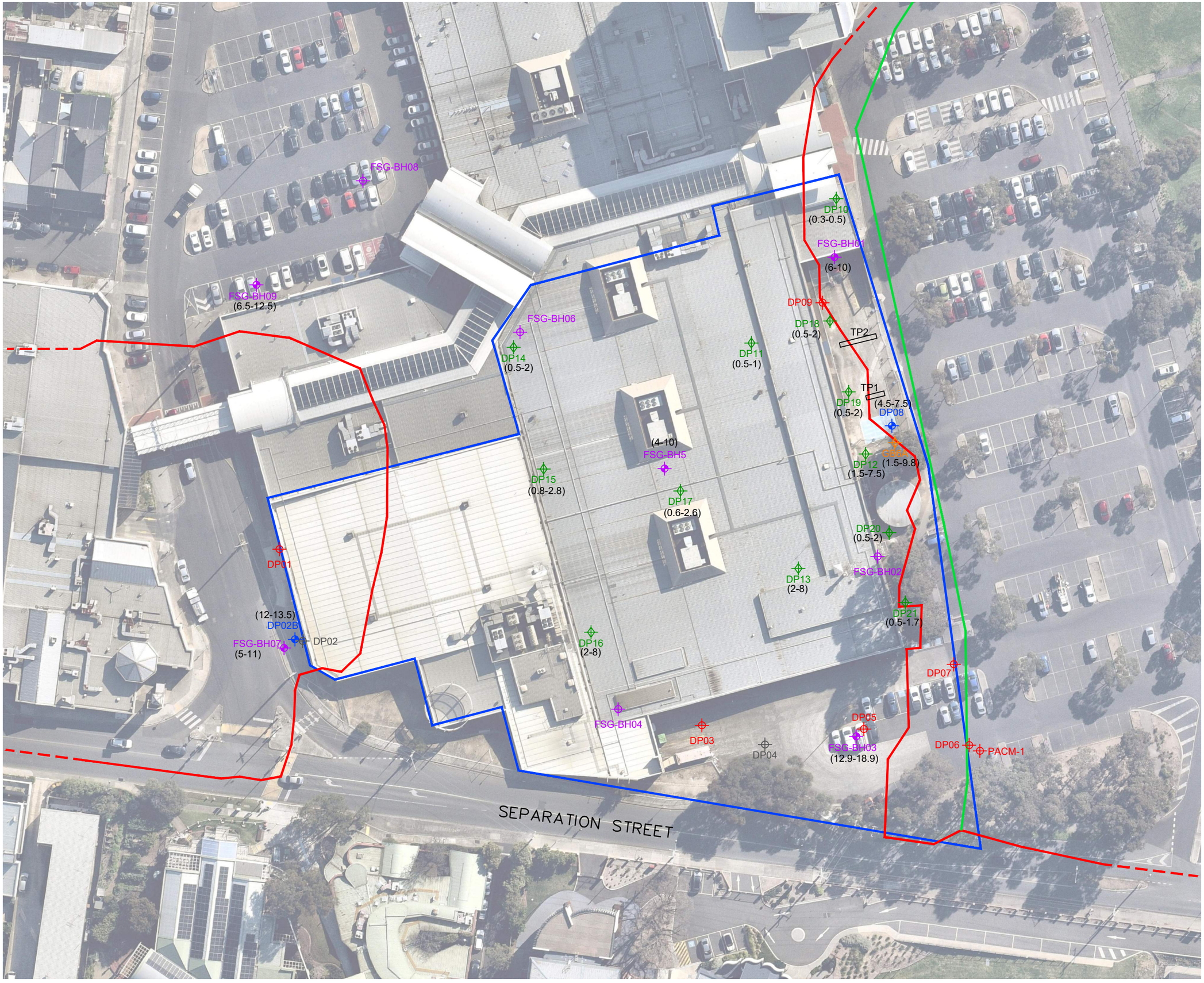

INFERRED CUT OFF TRENCH ALLIGNMENT:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

INVESTIGATION TRENCH:

SOIL BORE:

LANDFILL GAS BORE:

MONITORING WELL:

OTHER (GEO-TECHNICAL):

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL (FSG 2021):

LANDFILL GAS BORE (UNKNOWN) (FROM FIELD INSPECTION AND DAREBIN REPORT):

SCREEN INTERVAL (mBGL): (4-5.5)

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m SCALE 1:750 @ A3

BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **EXISTING SAMPLE LOCATIONS**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 28 April 2022

FILE REFERENCE: 21135_DRW01V01.DWG

FIGURE NUMBER: **2**

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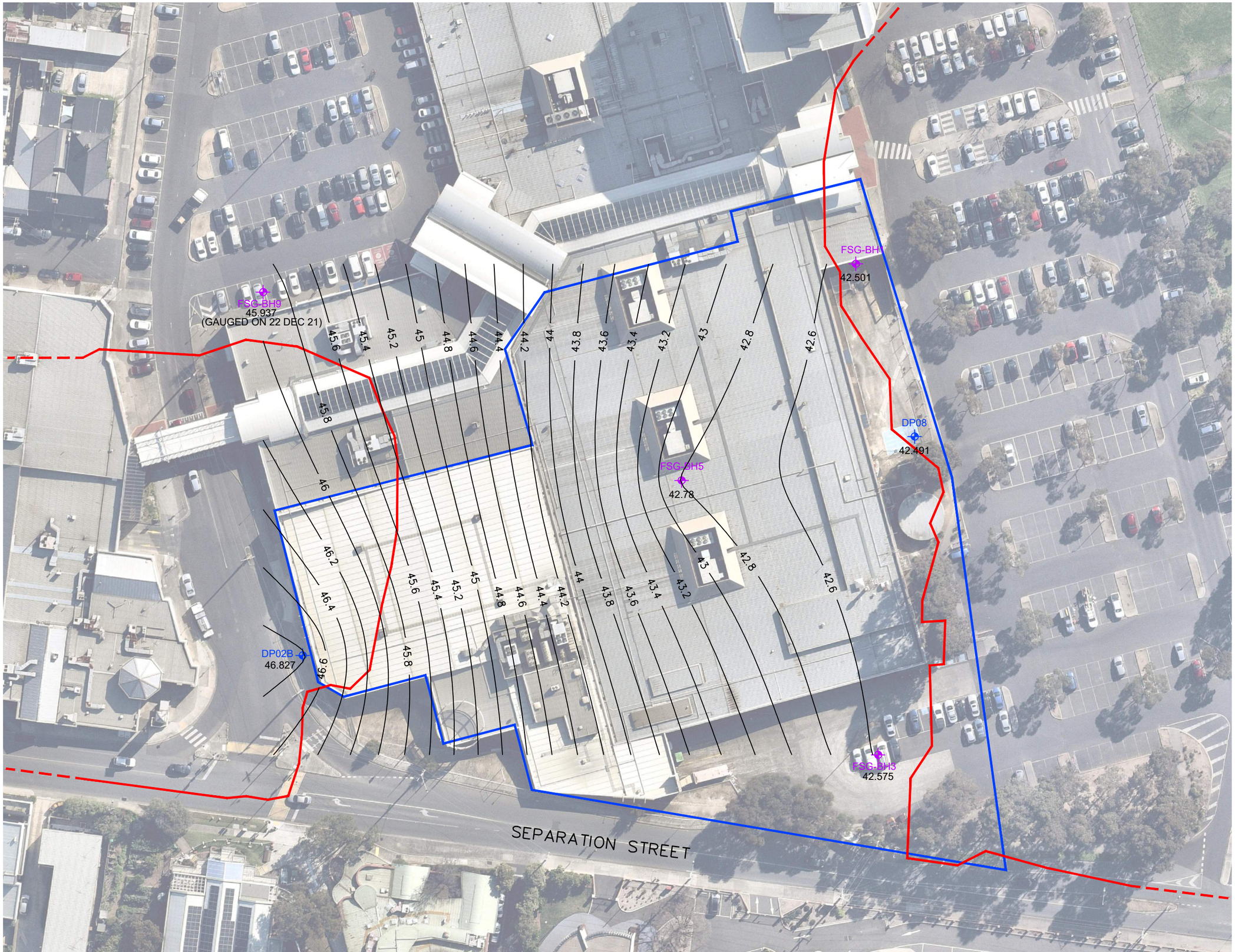

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

MONITORING WELL:

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL (FSG 2021):

GROUNDWATER ELEVATION CONTOUR (mAHD): 20

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**GROUNDWATER ELEVATION CONTOURS - 20 DECEMBER 2021**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	9 February 2022
FILE REFERENCE:	21135_DRW02V01.DWG
FIGURE NUMBER:	**3**

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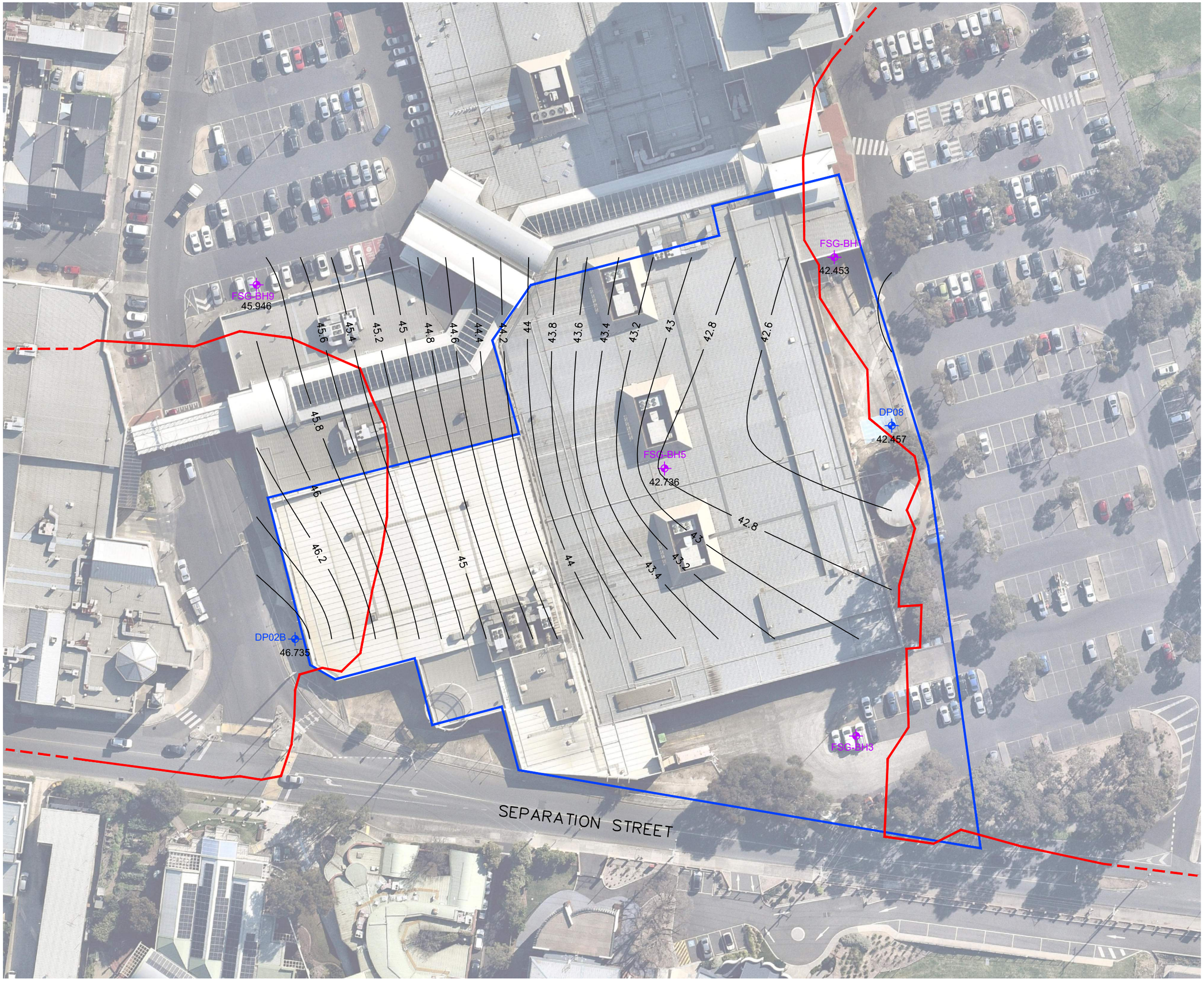

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

MONITORING WELL:

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL (FSG 2021):

GROUNDWATER ELEVATION CONTOUR (mAHD): 20

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **GROUNDWATER ELEVATION CONTOURS - 17 FEBRUARY 2022**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 21 February 2022

FILE REFERENCE: 21135_DRW02V01.DWG

FIGURE NUMBER: **4**

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HYDRAULIC HEAD
(20 DECEMBER 2021):

FILL AND SURFACE COVERING:

SILTY CLAY/
CLAYEY SILT:

SILTSTONE:

SANDSTONE/SILTSTONE LAYERS:

SANDSTONE:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

SOIL BORE:

LANDFILL GAS BORE:

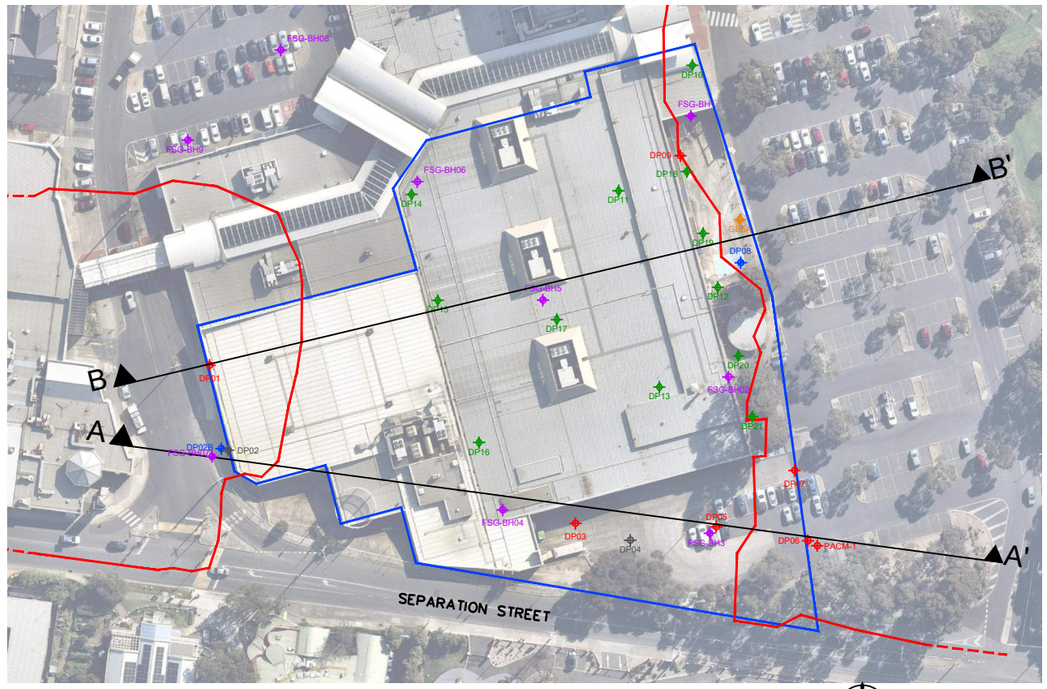
MONITORING WELL:

OTHER
(GEO-TECHNICAL):

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL
(FSG 2021):

LANDFILL GAS BORE
(UNKNOWN):



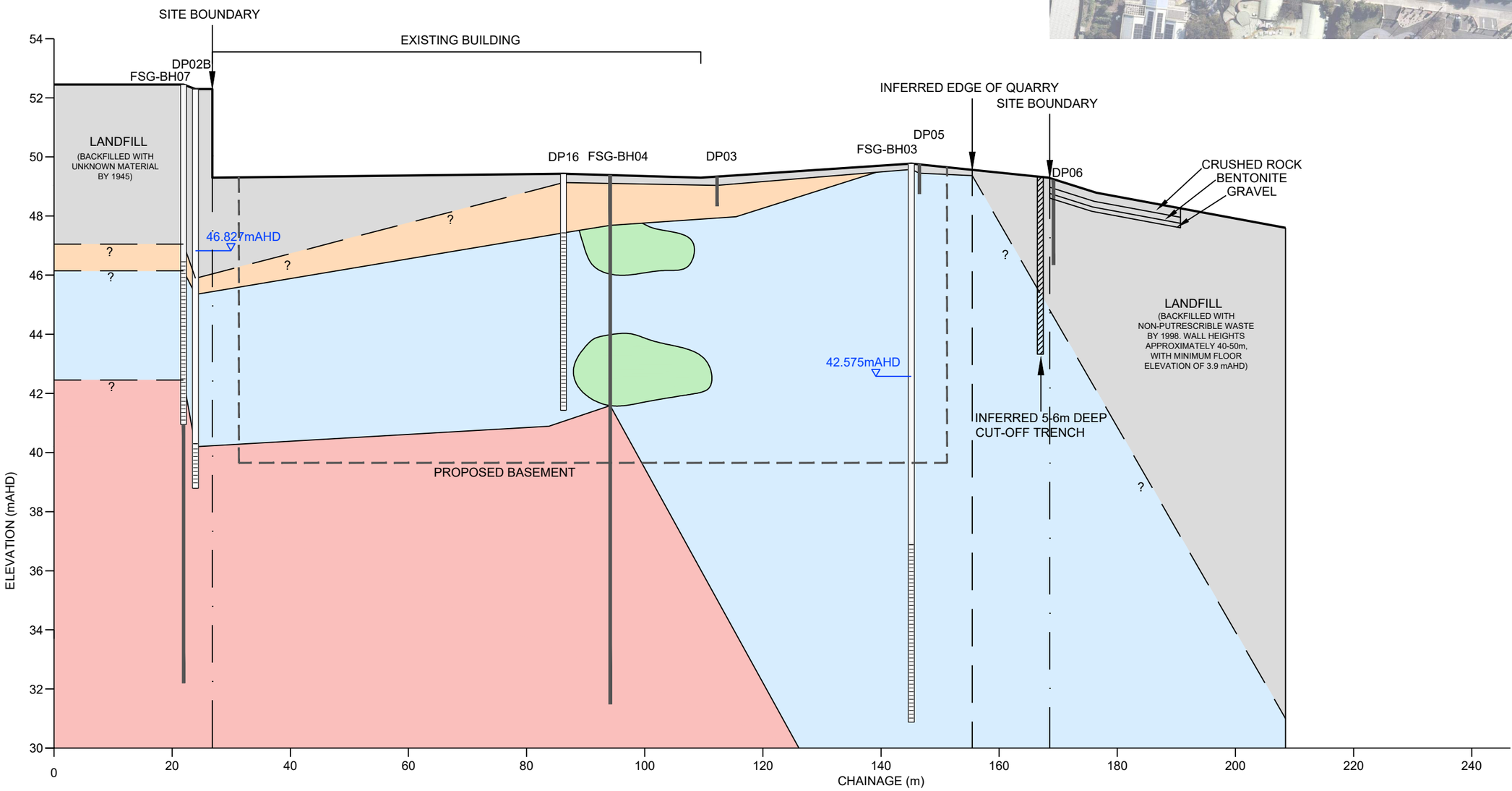
NORTH:

SITE BOUNDARY:

SCALE:

0 5 10 15m

SCALE 1:750 @ A3



BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **CROSS SECTION A-A'**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 28 April 2022

FILE REFERENCE: 21135_DRW03V01.DWG

FIGURE NUMBER: **5**

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HYDRAULIC HEAD
(17 FEBRUARY 2022):

FILL AND SURFACE COVERING:

SILTY CLAY/
CLAYEY SILT:

SILTSTONE:

SANDSTONE/SILTSTONE LAYERS:

SANDSTONE:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

SOIL BORE:

LANDFILL GAS BORE:

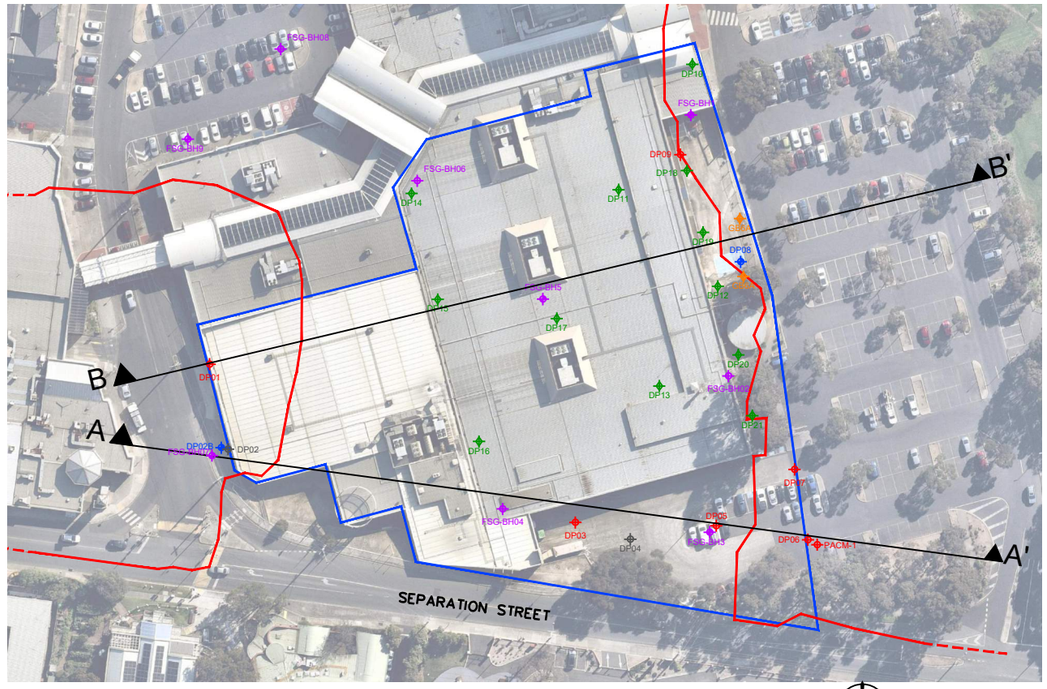
MONITORING WELL:

OTHER
(GEO-TECHNICAL):

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL
(FSG 2021):

LANDFILL GAS BORE
(UNKNOWN):



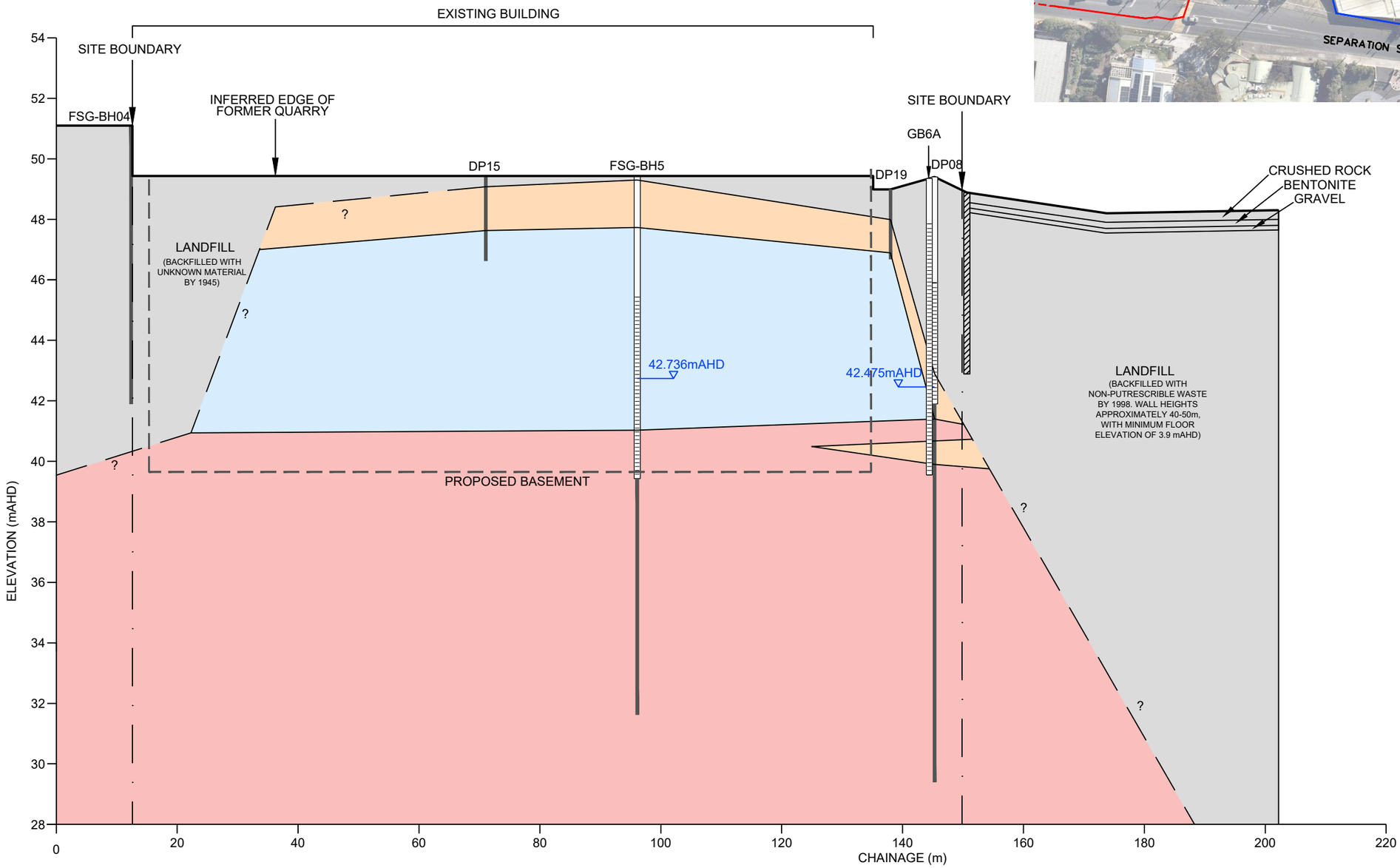
NORTH:

SITE BOUNDARY:

SCALE:

0 5 10 15m

SCALE 1:750 @ A3



BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **GEOLOGICAL CROSS SECTION B-B'**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 28 April 2022

FILE REFERENCE: 21135_DRW03V01.DWG

FIGURE NUMBER: **6**

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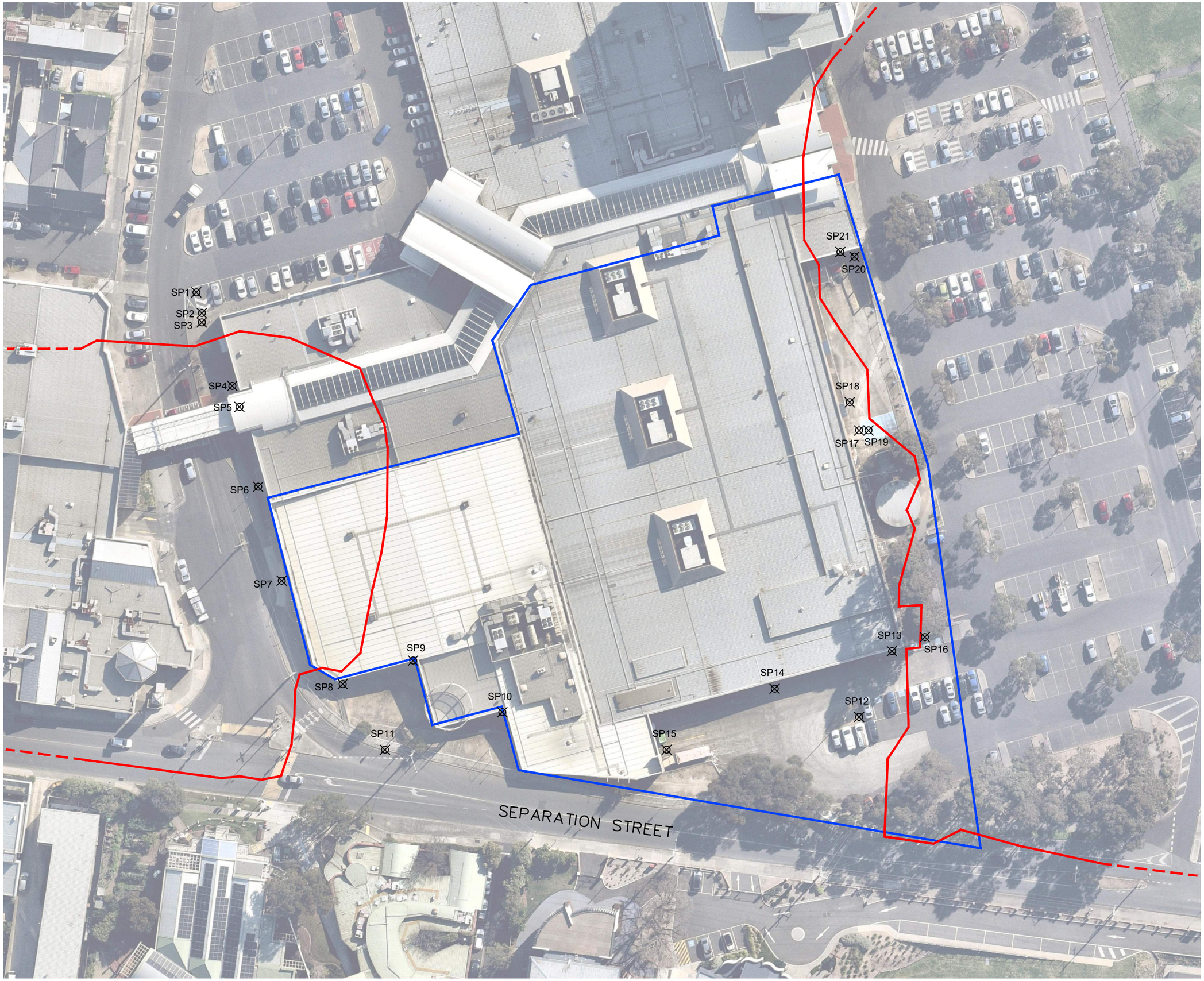

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

SERVICE GAS MONITORING LOCATION:

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN:	LANDATA/NEARMAP
CLIENT:	TIME AND PLACE DEVELOPMENTS PTY LTD
LOCATION:	**25 SEPARATION STREET, NORTHCOTE**
DETAIL:	**UNDERGROUND SERVICE GAS MONITORING LOCATIONS**
DRAWN BY:	MG
REVIEWED BY:	DS
DRAWING DATE:	1 February 2022
FILE REFERENCE:	21135_DRW01V01.DWG
FIGURE NUMBER:	**7**

compassenvironmental

COMPASS ENVIRONMENTAL PTY LTD
SUITE 6, 5 ROSE STREET HAWTHORN EAST VICTORIA 3123
PH: 9819 4704 FAX: 9819 4724 EMAIL: enquiry@compassenviro.com.au

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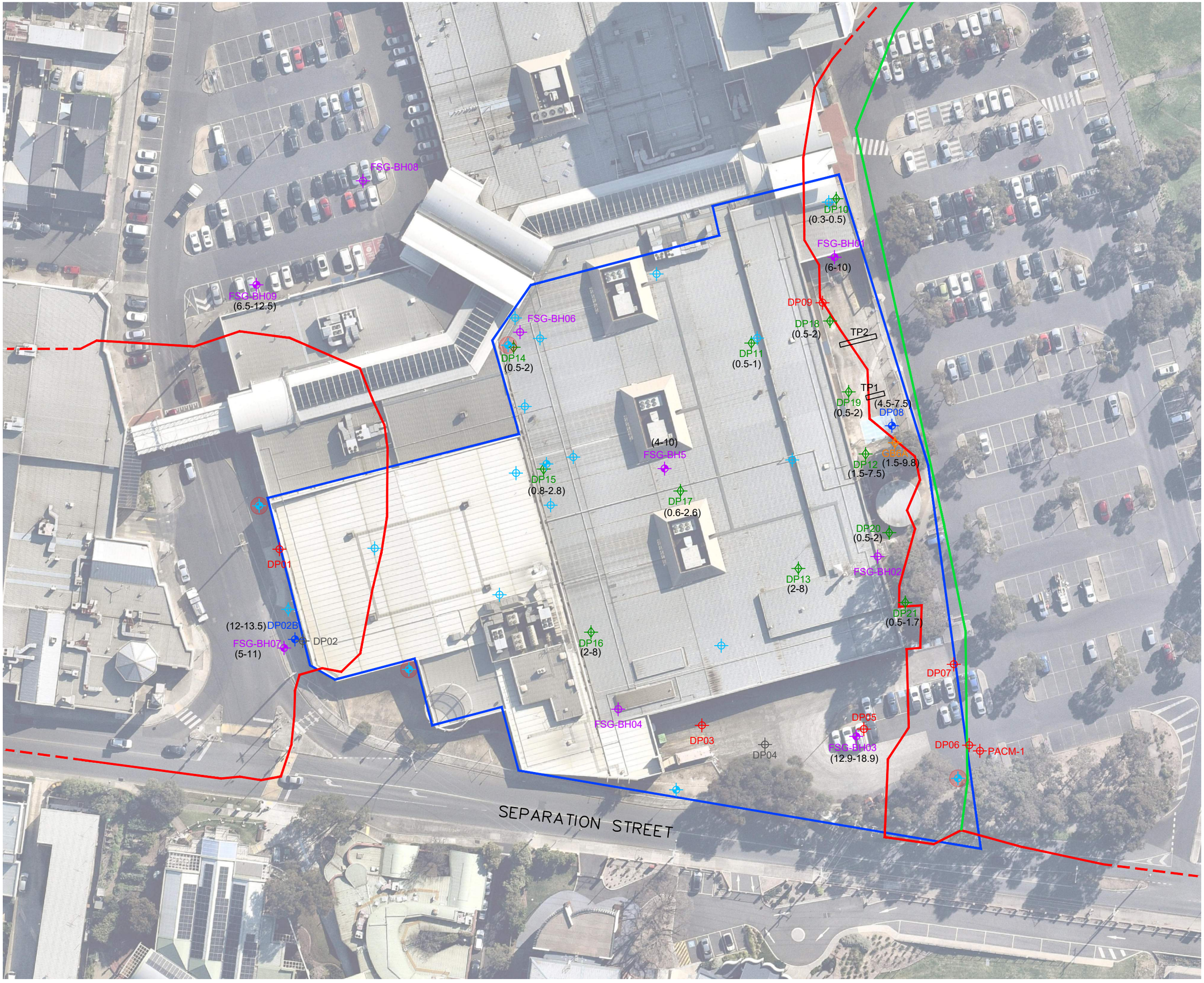

PROPOSED SOIL BORE:

PROPOSED LANDFILL GAS BORE:

PROPOSED MONITORING WELL:

DUAL PURPOSED WELL/GAS BORE:

INFERRED CUT OFF TRENCH ALLIGNMENT:

INFERRED MAXIMUM EXTENT OF FORMER QUARRIES:

QUARRY ALIGNMENT UNKNOWN:

INVESTIGATION TRENCH:

SOIL BORE:

LANDFILL GAS BORE:

MONITORING WELL:

OTHER (GEO-TECHNICAL):

NOTE: THE ABOVE SAMPLE LOCATIONS AND FEATURES DOUGLAS PARTNERS PLAN JULY 21 - PROJ 95409.02 DRW 1

MONITORING WELL (FSG 2021):

LANDFILL GAS BORE (UNKNOWN) (FROM FIELD INSPECTION AND DAREBIN REPORT):

SCREEN INTERVAL (mBGL): (4-5.5)

NORTH:

SITE BOUNDARY:

SCALE: 0 5 10 15m
SCALE 1:750 @ A3

BASE PLAN: LANDATA/NEARMAP

CLIENT: TIME AND PLACE DEVELOPMENTS PTY LTD

LOCATION: **25 SEPARATION STREET, NORTHCOTE**

DETAIL: **PROPOSED ADDITIONAL SAMPLING LOCATIONS**

DRAWN BY: MG

REVIEWED BY: DS

DRAWING DATE: 28 April 2022

FILE REFERENCE: 21135_DRW01V01.DWG

FIGURE NUMBER: **8**

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COMPASS ENVIRONMENTAL PTY LTD
SUITE 6, 5 ROSE STREET HAWTHORN EAST VICTORIA 3123
PH: 9819 4704 FAX: 9819 4724 EMAIL: enquiry@compassenviro.com.au

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ATTACHMENT A

DELWP Groundwater Resource Report

Groundwater Resource Report

Groundwater catchment: East Port Phillip Bay **VICGRID94 Easting: 2500155 Northing: 2414646**

Depth to water table: 5 - 10m **Water table salinity (mg/L): 501 - 1000**

Groundwater layers (Aquifers and Aquitards)	Depth below surface (m)	Groundwater salinity (mg/L)
BSE Mesozoic and Palaeozoic Bedrock (basement) sedimentary (fractured rock): Sandstone, siltstone, mudstone, shale. Igneous (fractured rock): includes volcanics, granites, granodiorites.	0 - 200	1001 - 3500

There are no GMUs at this location

For further information about this report contact:
Department of Environment, Land, Water & Planning
Email: ground.water@delwp.vic.gov.au

For further information on groundwater licensing in this area contact:
Southern Rural Water Corporation
Phone: 1300 139 510
Email: srw@srw.com.au
Website: www.srw.com.au

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Printed: 08 April 2022
Date Updated: 11 January 2019

VICTORIA State Government | Environment, Land, Water and Planning

How to read this report

Introduction

Groundwater is part of the water cycle. When rain or snow falls on land, some of it evaporates, some flows to streams and rivers, and some seeps into the soil. Some of the water in the soil is used by plants but some continues to move down through the soil and rock until all the pores and cracks are full of water. This is known as the water table and this water is called groundwater.

Groundwater is a finite resource that, like surface water, is allocated under the Water Act (1989). A Bore Construction Licence is required to drill for groundwater including for domestic and stock purposes. Taking and using groundwater for commercial or irrigation purposes requires an additional licence.

Purpose of this report

This report has been prepared to provide potential groundwater users with basic information about groundwater beneath their property. This includes the different geological layers, the depths of the layers and the salinity of groundwater in the layers. Information on the groundwater management units (GMU) and any associated caps on the volume that can be licensed (the PCV) are also provided.

Definitions and context

Term	Description
Groundwater Catchment	An identified area of the State within which groundwater resources are connected.
Easting / Northing	The VICGRID 94 coordinates of the spot that was selected on the interactive map.
Groundwater Salinity	Indicates the possible concentration of salts within the groundwater. The salt content indicates the possible uses of the water (see the Beneficial Use Table below). Fertilisers and other contaminants can also enter groundwater and affect its use. It is up to you to make sure that the groundwater you use is suitable for your purpose.
Aquifer	An aquifer is a layer of soil or rock which stores usable volumes of groundwater. Aquifers are generally limestones, gravels and sands, as well as some fractured rocks where the cracks in the rock are open and connected (some basalts, sandstones and limestones). How much water can be pumped from an aquifer depends on how much water is stored in pores and cracks, how well connected the pores and cracks are, and how thick the layer is. It is more likely that volumes of water for irrigation and urban water supply will come from gravels, sands, limestones and basalts that are at least 30 metres thick. Low volumes of water for domestic and stock use are likely from any aquifer greater than 10 metres thick. The advice above is a guide only, as the amount of water available can be highly variable. Actual pumping volumes can only be determined from drilling, appropriate construction and testing of a bore.
Aquitard	An aquitard is a layer of rock or soil that does not allow water to move through it easily, limiting its capacity to supply water. Aquitards are generally silts, clays and fractured rocks (where there are few cracks in the rock or the cracks are poorly connected).
Groundwater Management Unit (GMU)	A collective term for groundwater management areas (GMAs) and water supply protection areas (WSPAs). GMAs and WSPAs are defined areas and depths below the surface where rules for groundwater use may apply. WSPAs often have caps on groundwater use and plans describing how the resource is managed. GMAs usually have caps on groundwater use and may have local plans and rules. All other areas are managed directly through the Water Act (1989). Always check with your local Rural Water Corporation to be sure that the information on the GMU is correct for your specific location.
Permissible Consumptive Volume (PCV)	A cap that is set under the Water Act (1989) declaring the total volume of groundwater that may be taken from the area. Once the PCV is reached, no additional extraction can be licensed for use within the area unless traded from another groundwater licence holder.
Depth to Water Table	This is an indication of the depth at which groundwater might first be encountered when drilling a bore. The depth can vary from year to year, and from place to place and may vary significantly from that indicated in this report.

Beneficial Use Table

Salinity range (mg/L TDS)	Beneficial use as described by State Environment Protection Policy (Groundwaters of Victoria) s160							
	Potable water - preferred	Potable water - acceptable	Potable mineral water	Irrigation	Stock water	Industry	Ecosystem protection	Buildings and structures
<500	✓	✓	✓	✓	✓	✓	✓	✓
501-1000		✓	✓	✓	✓	✓	✓	✓
1001-3500			✓	✓	✓	✓	✓	✓
3501-13000					✓	✓	✓	✓
13001+						✓	✓	✓

Accessibility

If you would like to receive this publication in an alternate format, please telephone or email the DELWP Customer Service Centre 136 186, email customer.service@delwp.vic.gov.au, or via the National Relay Service on 133 677 www.relayservice.com.au.

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Printed: 08 April 2022

Date Updated: 11 January 2019

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ATTACHMENT B

Historical Aerial Photographs

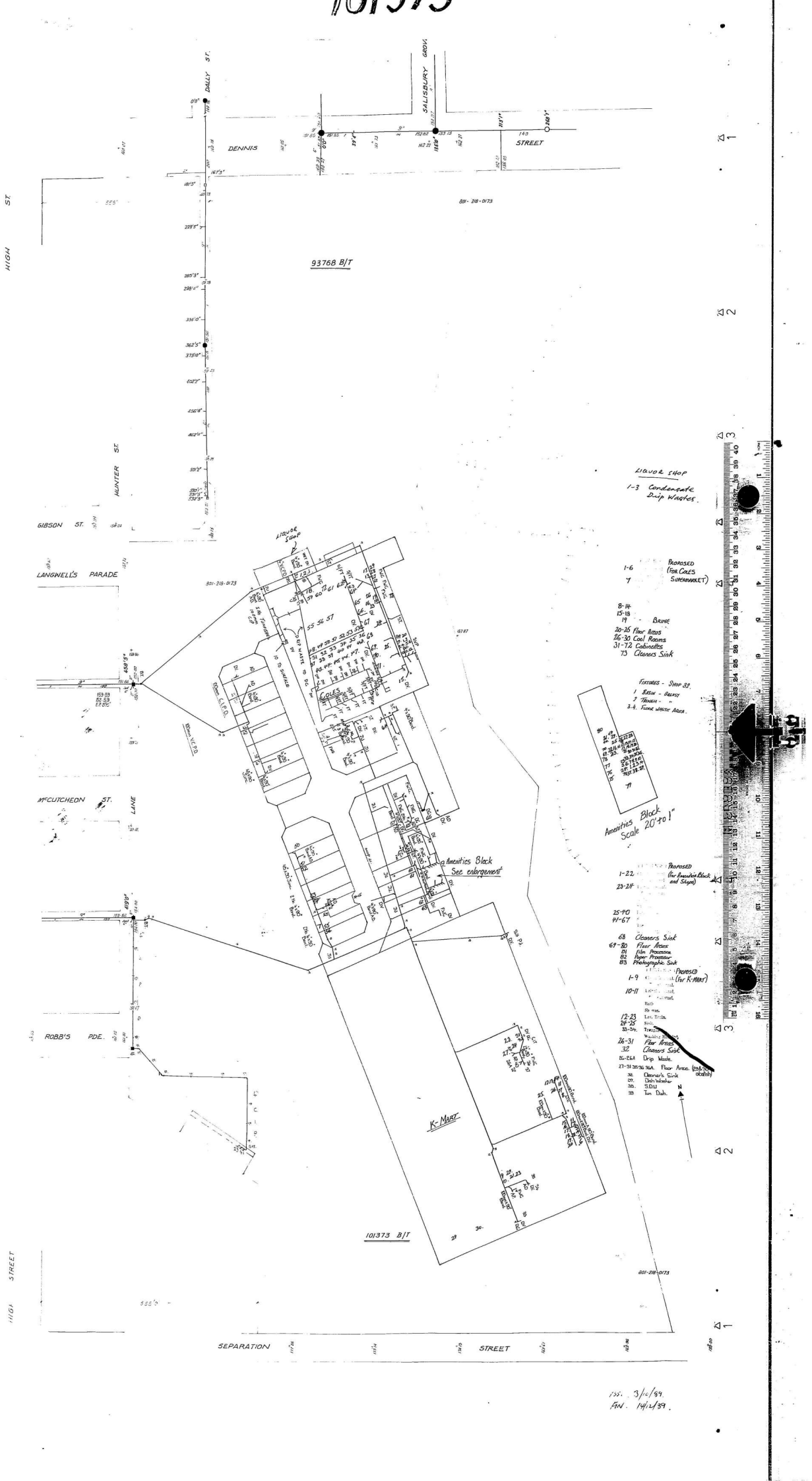


Aerial Photograph: December 1945

N

ATTACHMENT C

Drainage Plans



YARRA VALLEY WATER LIMITED ACN 066 902 501

APPROVAL IPSP

PLAN NUMBER 00101373

© Yarra Valley Water Ltd 1996

WARNING: This property sewerage plan (IPSP) is for property information only. Yarra Valley Water Limited does not warrant the accuracy or scale of this plan. The company accepts no liability for any loss, damage or costs which may be incurred as a result of any inaccuracy or omission in this plan.

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155. 3/12/89.
FIN. 14/12/89.

ATTACHMENT D

Available Historical Information

Information from Darebin Library

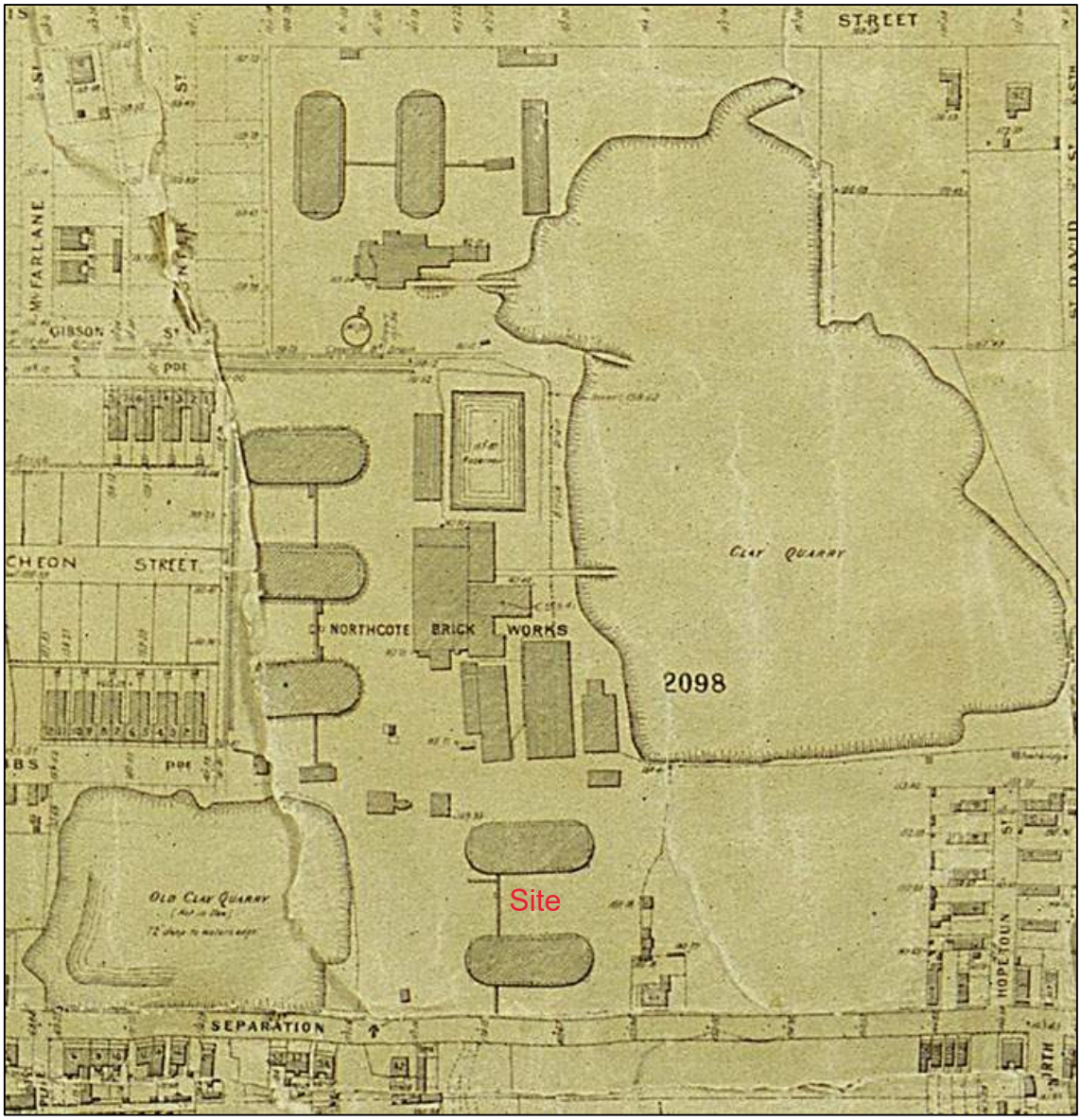


Figure 1 Historical Map, circa 1912

(Source: https://heritage.darebinlibraries.vic.gov.au/article/294, accessed 12 April 2022)



Figure 2 Historical photograph of Northcote Brickworks, dated 1957
(Source: https://heritage.darebinlibraries.vic.gov.au/article/294, accessed 12 April 2022)

ATTACHMENT E

Bore Logs

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 52.4 m AHD
EASTING: 323940
NORTHING: 5817898
DIP/AZIMUTH: 90°/--

BORE No: DP 02B
PROJECT No: 95409.00
DATE: 22/11/2019
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Water	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
52	0	FILL / SILTY CLAY (CI): dark brown, mottled grey, with fine to medium sand, M>Wp, soft to firm.							
51	1	1.5 m: with brick and concrete fragments.				S / D			1,2,2 N = 4
50	2	2.5 m: becoming stiff to very stiff.				S			3,8,10 N = 18
49	3	3.5 m: becoming stiff.				S / D			7,8,6 N = 14
48	4								
47	5	5.0 m: becoming very stiff.				S			6,10,10 N = 20
46	6								
	6.4	SILTY CLAY (CI): yellow brown, M=Wp, very stiff to hard, EW siltstone.							
45	6.95 7	SILTSTONE (HW): brown and grey, bedding ~70°, Dargile Formation.			7.0 - 7.15 m: Bp, 70°, pl, ro, fe sn 7.2m: EW seam, 30 mm 7.25m: Cs, 20 mm 7.6m: Cs, 50 mm 7.7m: EW seam, 10 mm 7.8m: Cs, 100 mm 8.05 - 8.15 m: Bp, 70°, pl, ro, fe sn	C	100	51	Saturated moisture content = 11.2%
44	8					C	89	25	Saturated moisture content = 10.9%
	8.4	Core Loss.			8.4m: CORE LOSS: 1600mm				
43	9					C	0	0	
	10.0					C	0	0	

Degree of Weathering: EW HW MW SW FS FR
Rock Strength: Ex Low, Very Low, Low, Medium, High, Very High, Ex High
Fracture Spacing (m): 0.01, 0.05, 0.10, 0.50, 1.00

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 3 m

TYPE OF BORING: Solid flight auger to 2.5 m; coring to end.

WATER OBSERVATIONS: No free groundwater observed in top 2.5 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 52.4 m AHD
EASTING: 323940
NORTHING: 5817898
DIP/AZIMUTH: 90°/--

BORE No: DP 02B
PROJECT No: 95409.00
DATE: 22/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
42		Core Loss.						10m: CORE LOSS: 2100mm	C	0	0	
11									C	0	0	SPT= 15/100 mm double bouncing
41									C	0	0	
12	12.1	SANDSTONE (HW): orange brown, minor interbedded siltstone (20%), bedding ~70°, Dargile Formation.						12.05m: EW seam, 50 mm 12.15m: Cs, 100 mm 12.45m: Sheared surface, 70°, cu, sm, fe sn 12.6m: Sheared surface, 60°, cu, sm, fe sn 12.88m: Cs, 90 mm 13m: Sh, 100 mm 13.17m: Sh, 140 mm	C	90	11	Saturated moisture content = 11.0% PL(D) = 0.26
40	13								C	100	0	Saturated moisture content = 12.8%
39	13.5	Bore discontinued at 13.5m										
14												
38												
15												
37												
16												
36												
17												
35												
18												
34												
19												
33												

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 3 m

TYPE OF BORING: Solid flight auger to 2.5 m; coring to end.

WATER OBSERVATIONS: No free groundwater observed in top 2.5 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.4 m AHD
EASTING: 324068
NORTHING: 5817946
DIP/AZIMUTH: 90°/--

BORE No: DP 08
PROJECT No: 95409.00
DATE: 12/11/2019
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Type	Core Rec. %	RQD %	Test Results & Comments
49	0.2	Concrete.		E			
		FILL / SANDY GRAVEL (GP): fine to medium grained sand, grey brown, moist, medium dense.		S			13,7,6 N = 13 disiturbed and enviro sample at 0.5 m
48	1	0.9 m: with brick and concrete fragments.					
		1.5 m: becoming loose.		S			1,5,2 N = 7
47	2						
46	3						
45	4			S			5/450 mm
44	5			S			7,3,4 N = 7
43	6						
	6.5	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		S			13,15,16 N = 31
42	7.0	Core Loss.					7m: CORE LOSS: 300mm
	7.3	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		C	70	14	
41	8.0	SANDSTONE (HW): orange-brown, grey mottled, Dargile Formation.					Saturated moisture content = 15.5%
	8.5	SILTY CLAY (CI): yellow brown, mottled grey, with fine to medium grained sand, very stiff to hard, EW siltstone.		C	100	17	
40	9.5	SANDSTONE (HW): orange brown, with interbedded siltstone (30%), Dargile Formation.		C	100	44	
	10.0						

Degree of Weathering: EW, HW, MW, SW, FS, FR
Rock Strength: Ex Low, Very Low, Low, Medium, High, Very High, Ex High
Water
Fracture Spacing (m): 0.01, 0.05, 0.10, 0.50, 1.00
Discontinuities: B - Bedding, J - Joint, S - Shear, F - Fault
Sampling & In Situ Testing

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 2.4 m

TYPE OF BORING: Solid flight auger 3 m; washboring to 3.5 m; HQ coring to end

WATER OBSERVATIONS: No free groundwater observed in top 3 m, further observation obscured by drilling fluid.

REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: River Street Developments Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: Unit 33, 25 Separation Street, Northcote

SURFACE LEVEL: 49.4 m AHD
EASTING: 324068
NORTHING: 5817946
DIP/AZIMUTH: 90°/--

BORE No: DP 08
PROJECT No: 95409.00
DATE: 12/11/2019
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
39		SANDSTONE (HW): orange brown, with interbedded siltstone (30%), bedding ~30°, Dargile Formation.							C	100	44	Saturated moisture content = 11.6%
38	11							10.75m: ls, 10mm, 40° 10.8m: ls, 10mm, 40° 10.88m: ls, 10mm, 40° 10.95m: ls, 10mm, 40°	C	100	0	
37		11.3 m: bedding ~60-70°.						11.14m: Bp, 30°, pl, sm, fe sn	C	100	91	
36	12							11.81 - 11.92m: Bp, 70°, pl sm fe sn	C	100	55	
35	13							12.58m: J, 30°, pl, ro, fe sn 12.65m: J, 30°, ir, ro, fe sn	C	100	100	PL(D) = 0.27
34	14								C	100	88	
33	15 15.0	SILTSTONE (MW): grey brown, with interbedded sandstone (20%), Dargile Formation.							C	100	20	Saturated moisture content = 8.8%
32	16							16.05m: Bp, 70°, pl, sm, fe sn, discon 16.4m: Bp, 70°, pl, sm, fe sn	C	100	58	
31	17							17.8m: Bp, 70°, pl, sm, fe sn	C	100	35	Saturated moisture content = 8.1%
30	18							18.6m: Cs, 400 mm	C	100	54	Saturated moisture content = 7.2%
	19							19.3m: Cs, 100 mm				
	20.0	Bore discontinued at 20.0m										

RIG: Comacchio GEO 205 **DRILLER:** Urban Drilling **LOGGED:** AP **CASING:** HWT to 2.4 m

TYPE OF BORING: Solid flight auger 3 m; washboring to 3.5 m; HQ coring to end

WATER OBSERVATIONS: No free groundwater observed in top 3 m, further observation obscured by drilling fluid.

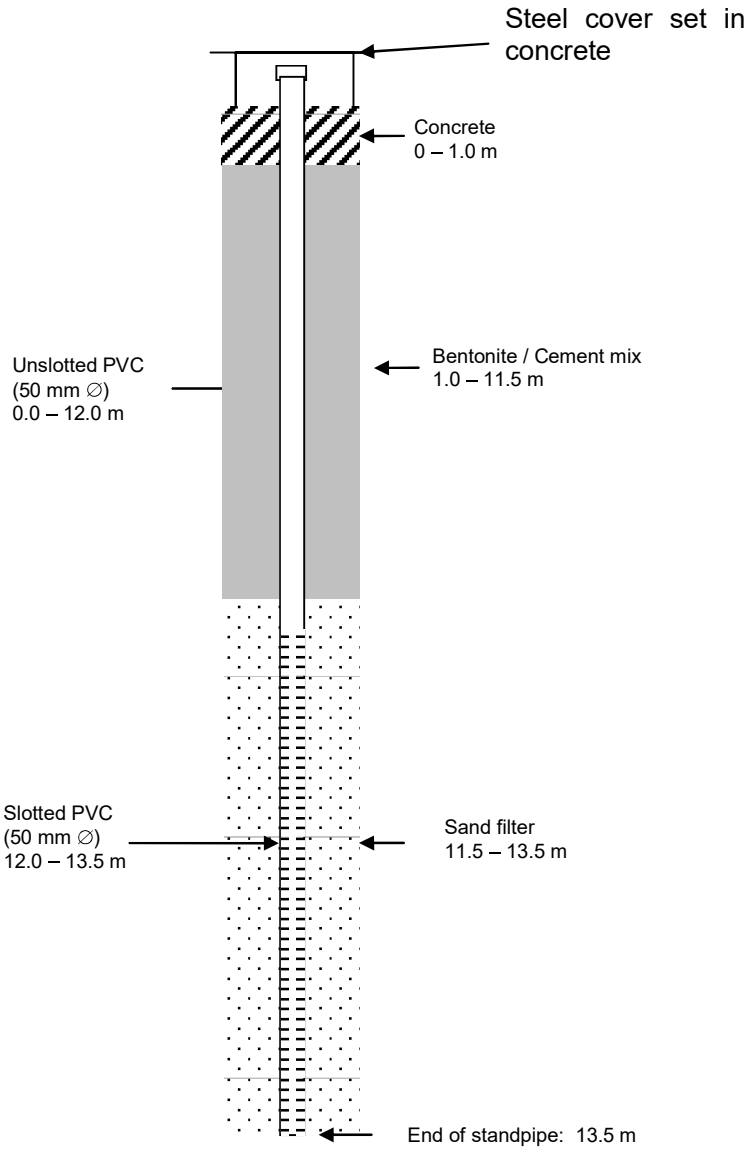
REMARKS: Location coordinates are in WGS 84 Zone 55 H. Standpipe installed on completion.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

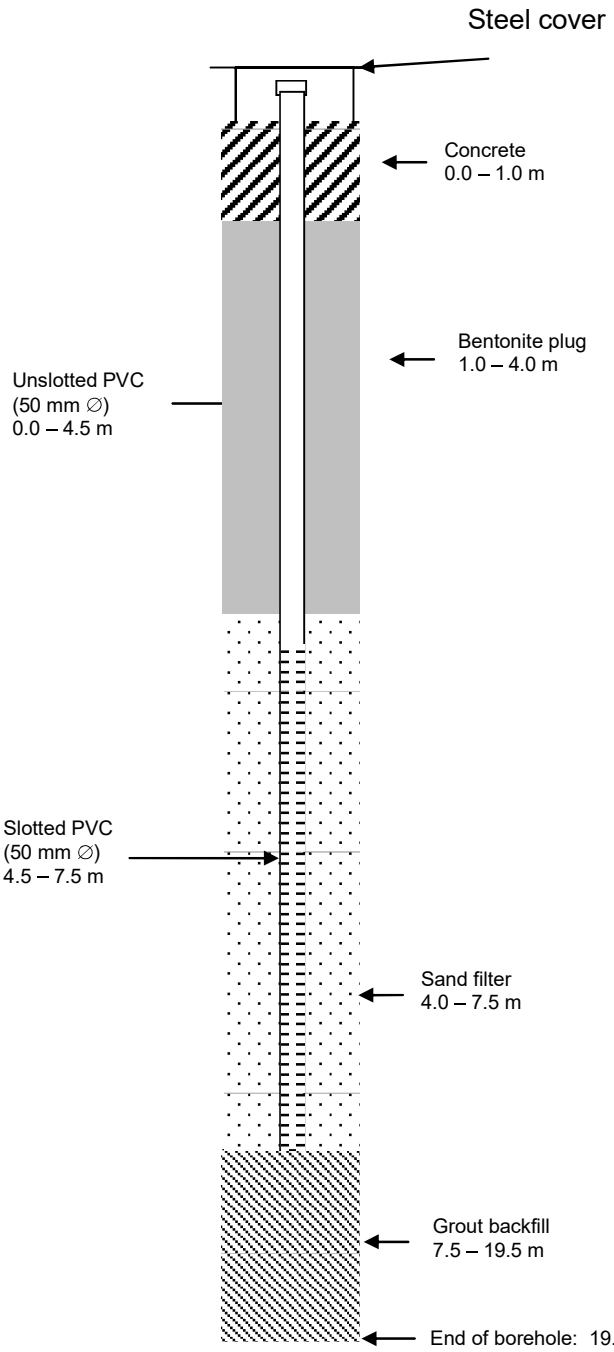
Douglas Partners
Geotechnics / Environment / Groundwater

DP02b



Douglas Partners Geotechnics / Environment / Groundwater	**Indicative Standpipe Construction Details** **Lot 50,51 and 76, 25 Separation Street** **Northcote**	PROJECT: 95409.0 DRAWING No. 2 REV: 0
	CLIENT: LAS Project Management Pty Ltd	DATE: Mar 2020

DP08



Douglas Partners Geotechnics / Environment / Groundwater	**Indicative Standpipe Construction Details** **Lot 50,51 and 76, 25 Separation Street** **Northcote**	PROJECT: 95409.0 DRAWING No. 3 REV: 0
	CLIENT: LAS Project Management Pty Ltd	DATE: Mar 2020

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324056
NORTHING: 5817992
DIP/AZIMUTH: 90°/--

BORE No: DP 10
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49		CONCRETE							Flush gatic cover
	0.25	FILL / Sandy GRAVEL (GP): fine to coarse, angular, dense, well graded gravel, fine to coarse sand; FILL (Crushed Rock)							Unslotted PVC to 0.3 m
	0.35	FILL / Gravelly CLAY (CP): brown, w<PL, stiff, with medium to coarse angular basalt grave and crushed rock, trace concrete and brick fragments; FILL		E	0.35 0.45	DP10 - 0.35	DP10 - 0.35		Bentonite 0.1 to 0.25 m Sand filter pack 0.25 to 0.5 m Slotted PVC Screen 0.3 to 0.5 m
	0.5	Bore discontinued at 0.5m. Auger refusal on concrete block							
48	1								1
47	2								2

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.25 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324037
NORTHING: 5817962
DIP/AZIMUTH: 90°/--

BORE No: DP 11
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.13	CONCRETE							Flush gatic cover
	0.15	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.15	DP11 - 0.15	DP11 - 0.15		Unslotted PVC to 0.5 m
					0.25				
		FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, reworked natural; FILL		E	0.4	DP11 - 0.4	DP11 - 0.4		Bentonite 0.2 m to 0.4 m
					0.5				
				E	0.7	DP11 - 0.7	DP11 - 0.7		Sand filter pack 0.4 to 1 m
		at 0.9 m: with medium brown sands			0.8				Slotted PVC screen 0.5 to 1 m
48	1 1.0	Bore discontinued at 1.0m							1
	2								2
47									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.40 m AHD
EASTING: 324062
NORTHING: 5817935
DIP/AZIMUTH: 90°/--

BORE No: DP 12
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.15	FILL / Sandy GRAVEL (GW): fine to coarse, angular, well graded, grey, fine to coarse sand, dense; FILL (Crushed Rock)		E	0.05 0.15	DP12 - 0.05	DP12 - 0.05		Flush gatic cover
		Clayey SILT (ML): low plasticity, orange, brown to grey, with medium to coarse subangular siltstone gravel, trace medium sand, w<PL, very stiff; Residual (Melbourne Formation)		E	0.4 0.5	DP12 - 0.4	DP12 - 0.4		Bentonite 0.2 to 1.2 m
48	1.15	Clayey SILT (ML): low plasticity, pale red, yellow, brown to pale grey, w<PL, very stiff; Extremely weathered material (Melbourne Formation)		S	1.0 1.4		12,27,27 N = 54		Unslotted PVC to 1.5 m Spoil 0.5 to 1.2 m
	1.5	SILTSTONE (XW-HW) / Clayey SILT (ML): fragmented to highly fractured, pale brown to pale grey and pale red, very low strength / very low plasticity, pale brown to pale grey and pale red, w<PL, very stiff to hard; Melbourne Formation		C	1.5 1.6 1.9 2.1 2.2 2.3 2.4 2.7 2.8 2.9		pp = 180 pp = 480 pp >600 pp = 370 pp >600 pp = 320 pp = 260 pp = 320 pp = 380		
47	3.0	(HW): very low to low strength			3.0 3.2		pp = 120		
	3.3	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / stiff to very stiff			3.5 3.6		pp = 300 pp = 320		
	3.7	(HW): very low to low strength		C					
46	4.0	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / very stiff							
45	4.5	(HW): very low to low strength			4.5 4.6		pp = 200		Slotted PVC screen 1.5 to 7.5 m
44				C					Sand filter pack 1.2 to 7.5 m
					5.8		pp = 220		
		from 6 m: very low strength			6.0 6.1 6.2 6.3 6.4 6.6		pp = 300 pp = 520 pp = 470 pp = 500 pp = 480		
43	6.4	SILTSTONE (XW-HW) / Clayey SILT (ML): extremely low to very low strength / very stiff		C	6.8		pp = 520		
42	7.5	Bore discontinued at 7.5m - target depth reached			7.4 7.5		pp = 470		End cap
41									
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 1.5 m

TYPE OF BORING: Solid flight auger to 1.5 m; NMLC to 7.5 m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), location coordinates recorded by handheld GPS.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324047
NORTHING: 5817913
DIP/AZIMUTH: 90°/--

BORE No: DP 13
PROJECT No: 95409.02
DATE: 22/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.15	CONCRETE		E	0.15	DP13 - 0.15	DP13 - 0.15		Flush gatic cover
	0.2	FILL / Sandy GRAVEL (GW): fine to coarse, angular, dense, well graded, grey, fine to coarse sand; FILL (Crushed Rock)			0.2				
	0.5			E	0.4	DP13 - 0.4	DP13 - 0.4		
					0.5				
		FILL / Clayey SILT (ML): low plasticity, pale brown to grey, w<PL, stiff; FILL (reworked natural)							
48	1			E	1.0	DP13 - 1.0	DP13 - 1.0		Unsloted PVC to 2.0 m
					1.1				Bentonite 0.2 to 1.8 m
	1.5	Clayey SILT (ML): low plasticity, pale grey, trace medium to coarse subangular siltstone gravel, w<PL, very stiff; Residual (Melbourne Formation)							
		from 1 m: with Siltstone gravel		E	1.7	DP13 - 1.7	DP13 - 1.7		
	2				1.8				
	2.0	Clayey Sandy SILT (ML): low plasticity, pale grey, fine to medium sand, w<PL, very stiff; Extremely weathered material (Melbourne Formation)			2.0				
47		SANDSTONE (XW-HW) / Clayey Sandy SILT (ML): very low to low strength, fragmented to fractured, pale grey - pale brown and pale red, interbedded with Siltstone, highly fractured / low plasticity, pale grey - pale brown and pale red, fine to medium sand, w<PL, very stiff; Melbourne Formation		C					
	3				3.1		pp = 350		
					3.2		pp = 240		
46					3.4		pp = 300		
					3.5				
					3.8		pp = 500		
	4	3.8-3.94 m: fragmented			3.9		pp = 340		
					4.1		pp = 360		
	4.3	from 4.15 m: highly fractured		C	4.2		pp = 180		
45	4.5	Core loss							
	4.75	SANDSTONE (XW-HW) / Clayey Sandy SILT (ML): very low strength / very stiff (as above)			4.55		pp = 300		
					4.6		pp = 220		
	5	SANDSTONE (HW): low strength			5.0				Slotted PVC screen 2 m to 8 m
44				C					Sand filter pack 1.8 to 8 m
	6								
43	6.5	Core loss			6.5				
	6.9	SANDSTONE (HW): low strength		C					
42	7								
	7.55	Core loss							
	8								
	8.0	Bore discontinued at 8.0m - target depth reached			8.0				End cap
41	9								
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 2 m

TYPE OF BORING: Solid flight auger to 2 m; NMLC coring to 8 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324987
NORTHING: 5817961
DIP/AZIMUTH: 90°/--

BORE No: DP 14
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.11	CONCRETE							Flush gatic cover
		FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.11	DP14 - 0.11	DP14 - 0.11		Unslotted PVC to 0.5 m
	0.26	FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, strong hydrocarbon odour; Reworked Natural; FILL			0.25				Bentonite 0.2 to 0.4 m
49				E	0.4	DP14 - 0.4	DP14 - 0.4		
	0.5	Clayey SILT (CL): slight moist, w<PL, stiff, strong hydrocarbon odour			0.5				
	1			E	0.9	DP14 - 0.9	DP14 - 0.9		1
					1.0				
		from 1.2 m: pale grey to brown, with low strength Siltstone gravel							Sand filter pack 0.4 to 2 m
48				E	1.4	DP14 - 1.4	DP14 - 1.4		Slotted PVC screen 0.5 to 2 m
	1.6	SILTSTONE (XW): pale grey to brown coarse low to medium strength siltstone gravel, moderate hydrocarbon odour			1.5				
	2			E	1.9	DP14 - 1.9	DP14 - 1.9		2
	2.0	Bore discontinued at 2.0m			2.0				
47									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.11 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324993
NORTHING: 5817935
DIP/AZIMUTH: 90°/--

BORE No: DP 15
PROJECT No: 95409.02
DATE: 25/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		CONCRETE							Flush gatic cover
	0.13								
	0.17	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL		E	0.18	DP15 - 0.18	DP15 - 0.18		Cement 0.18 to 0.3 m
					0.28				
	0.35	FILL / Clayey SILT (CL) pale brown, slightly moist, w<PL, stiff, strong hydrocarbon odour; Reworked Natural; FILL							
49		Clayey SILT (CL): slight moist, w<PL, stiff, strong hydrocarbon odour		E	0.4	DP15 - 0.4	DP15 - 0.4		Bentonite 0.3 to 0.6 m
					0.5				Unslotted PVC to 0.8 m
				E	0.9	DP15 - 0.9	DP15 - 0.9		
	1	from 1 m: pale grey to brown, wit fine staining, hard, moderate hydrocarbon odour			1.0				1
48				E	1.4	DP15 - 1.4	DP15 - 1.4		Sand filter pack 0.6 to 2.8 m
					1.5				
	1.8	SILTSTONE (XW): pale grey to brown to pink, coarse low to medium strength gravel, moderate hydrocarbon odour							
	2								2 Slotted PVC screen 0.8 to 2.8 m
47				E	2.6	DP15 - 2.6	DP15 - 2.6		
					2.7				
	2.8	Bore discontinued at 2.8m. Auger refusal on HW Siltstone							

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324003
NORTHING: 5817900
DIP/AZIMUTH: 90°/--

BORE No: DP 16
PROJECT No: 95409.02
DATE: 23/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.13	CONCRETE		E	0.13	DP16 - 0.13	DP16 - 0.13		Flush gatic cover
	0.18				0.18				
	0.3	FILL / Sandy GRAVEL (GW): fine to coarse, angular, well graded, grey, fine to coarse sand, dense; FILL (Crushed Rock)		E	0.4	DP16 - 0.4	DP16 - 0.4		
					0.5				
48	1.0	FILL / Clayey SILT (ML): low plasticity, moist, pink and grey, with medium subangular siltstone gravel, stiff, w<PL; FILL (reworked natural)		E	1.0	DP16 - 1.0	DP16 - 1.0		Unsloted PVC to 1.9. m Bentonite 0.2 to 1.8 m
		Clayey SILT (ML): low plasticity, moist, pale pink to grey, trace medium subangular siltstone gravel, w<PL, very stiff; Residual (Melbourne Formation)			1.1				
47	2.0	from 1m: grading to pale grey extremely weathered material (Melbourne Formation)			2.0	DP16 - 2.0	DP16 - 2.0		
	2.6	SILTSTONE (XW-HW) / Clayey SILT (ML): extremely low to low strength, fragmented to fractured, pale brown - pale red and pale grey / slightly moist, pale brown - pale red and pale grey, very stiff, w<PL; Melbourne Formation		C					
46	3	(HW): low to medium strength, highly fractured to fractured, with clay in parts			3.5				
					3.7		pp = 310		
45	4			C	4.15		pp = 220		
	5				5.0				Slotted PVC screen 2 m to 8 m
44				C					Sand filter pack 1.8 m to 8 m
43	6				6.5				
42	7			C					
41	8	Bore discontinued at 8.0m - target depth reached			8.0				End cap
40	9								

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 2 m

TYPE OF BORING: Solid flight auger to 2 m; NMLC coring to 8 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 49.43 m AHD
EASTING: 324022
NORTHING: 5817930
DIP/AZIMUTH: 90°/--

BORE No: DP 17
PROJECT No: 95409.02
DATE: 23/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
49	0.1	CONCRETE		E	0.15	DP17 - 0.15	DP17 - 0.15		Flush gatic cover
	0.25	FILL / Clayey SILT (ML): low plasticity, moist, pink and grey, with medium subangular siltstone gravel, stiff, w<PL; FILL (reworked natural)			0.25				
				E	0.5	DP17 - 0.5	DP17 - 0.5		Bentonite 0.2 to 0.5 m
					0.6				Unslotted PVC to 0.6 m
		Clayey SILT (ML): low plasticity, moist, very stiff, pale pink to grey, trace medium to coarse subangular siltstone gravel, w<PL, stiff; Residual (Melbourne Formation)		E	0.8	DP17 - 0.9	DP17 - 0.9		
1	1.0			S	1.0		18,5/0 mm bouncing refusal		1
					1.15				
48	1.5	Clayey SILT (ML): low plasticity, moist, very stiff, pale grey, trace medium to coarse subangular siltstone gravel, w<PL, stiff; Extremely weathered material (Melbourne Formation)		E	1.4	DP17 - 1.4	DP17 - 1.4		
					1.5				Sand filter pack 0.5 to 2.6 m
2		SILTSTONE (HW): very low to low strength, fragmented to highly fractured, pale brown, brown, pale grey and pale red (Melbourne Formation)		C					2 Slotted PVC screen 0.6 to 2.6 m
47	3.0	Core loss			3.0				3
	3.4	(HW): very low to low strength		C					
4									4
46	4.5	Core loss			4.5				
	4.9	(HW): very low to low strength							
5									5
45	5.2	Core loss		C					
	5.3	(HW): very low to low strength							
					5.8		pp = 260		
					5.9		pp = 280		
6					6.0				6
44	6.45	SILTSTONE (XW-HW) / Clayey SILT (ML): very low strength / moist, pale brown, pale grey and pale red, very stiff, w<PL (Melbourne Formation)		C	6.5		pp = 180		
					6.6		pp = 240		
7									7
					7.1		pp = 550		
					7.3		pp = 580		
43					7.4		pp = 380		
					7.5				
					7.8		pp = 480		
8									8
					8.1		pp = 200		
42				C	8.2		pp = 240		
					8.4		pp = 260		
					8.5		pp = 270		
					8.7		pp = 400		
9	9.0	Bore discontinued at 9.0m - target depth reached			9.0				9
41									
40									

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS / TT **CASING:** HWT to 1.5 m

TYPE OF BORING: Solid flight auger to 1.5 m; NMLC coring to 9 m

WATER OBSERVATIONS: No free groundwaer observed

REMARKS: Location coordinates are in MGA94 Zone 55 H. Surface level obtained from client supplied survey plan (6561FL2), coordinates recorded from existing site features.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Time & Place Development Consulting Pty Ltd
PROJECT: Proposed Mixed Use Development
LOCATION: 25 Separation Street, Northcote

SURFACE LEVEL: 48.99 m AHD
EASTING: 324058
NORTHING: 5817951
DIP/AZIMUTH: 90°/--

BORE No: DP 19
PROJECT No: 95409.02
DATE: 21/6/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							Flush gatic cover
	0.25	FILL / Sandy GRAVEL (GP): fine to coarse, dense, poorly graded gravel, fine to coarse sand; Crushed Rock Origin; FILL							
		FILL / Gravelly CLAY (CI): brown, fine to coarse subrounded basalt gravel, w<PL, firm, with fine to coarse brick fragments, trace ceramic fragments, trace ash; FILL		E	0.25 0.35	DP19 - 0.25	DP19 - 0.25		Unslotted PVC to 0.5 m Bentonite 0.15 to 0.45 m
	0.5	Silty CLAY (CH): high plasticity, brown, with fine to coarse siltstone, brick and basalt gravel, w<PL, very stiff							
48	1.0	Clayey SILT (ML): very low plasticity, orange to brown to grey, trace medium sand, with medium to coarse subangular siltstone gravel, w<PL, very stiff; EW Siltstone		E	0.75 0.85	DP19 - 0.75	DP19 - 0.75		1
				E	1.3 1.4	DP19 - 1.3	DP19 - 1.3		Sand filter pack 0.5 to 2 m Slotted PVC Screen 0.5 to 2 m
47	2.1	SILTSTONE (XW): yellow to brown to pale grey, very low strength, with coarse gravel							2
	2.3	Bore discontinued at 2.3m							

RIG: Comacchio GEO 105 **DRILLER:** Urban Drilling **LOGGED:** FS **CASING:** Uncased

TYPE OF BORING: Concrete coring to 0.13 m; solid flight auger to end

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 55 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

Engineering Borehole Report

FSG-BH01

Commenced: 2/12/2021
Completed: 6/12/2021
Logged By: SYL
Checked By: ALH
Final Depth: 21.40 m

Surface RL: 48.20 m AHD
Inclination: -90°

Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T DT	Not Observed			48	0			FILL CONCRETE: 170 mm thick, reinforced			FILL
							GM	FILL Sandy Silty GRAVEL with cobbles: medium to coarse grained, angular, dark brown; silt low plasticity; sand coarse grained; cobbles less than 20 mm in diameter, angular; trace brick fragments	M-W	D	
				47	1			Continued as Cored Borehole			
				46	2						
				45	3						
				44	4						
				43	5						
				42	6						
				41	7						
				40	8						
				39	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH01
Sheet 2 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING GROUP SYMB	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS (PARTICULAR / GENERAL)
				48	0		Continuation from non-cored borehole				
NMLC		0 0		47	1		FILL CONCRETE				FILL 0.90: inferred solid slab from auger refusal
		0 0	**SPT** 1.50-1.95 m 4,4,10 N=14				CI-CH CLAY: medium to high plasticity, pale red and orange brown; stiff to very stiff; moist, dry of plastic limit	CI-CH			RESIDUAL SOIL: Anderson Creek Formation
		0 0		46	2						
		20 0	**SPT** 2.50-2.95 m 5,4,6 N=10		3		Becoming orange brown mottled grey				
		50 0		45							
		40 0	**SPT** 4.00-4.45 m 8,15,18 N=33	44	4		ML Sandy SILT: low plasticity, orange brown mottled grey; sand fine grained; hard; moist, dry of plastic limit	ML			
		45 0		43	5		SILTSTONE: orange brown, bedding indiscernable, highly fractured	XW-HW			4.63-5.00 JTx 2 80-90° Un Ro cn <5mm intersecting multiple sub-horizontal joints 4.95-5.00 XS 10-20° recovered as clay 5.00-5.32 SZ 10-20° Ir Sm cg clay 5.33-5.39 CS Ir Ro cg clay 5.40-5.51 JTx 2 80-0° Un Sm vn clay <3mm 5.55-5.71 XS >200mm recovered as clay
				42	6		NO CORE: 5.71-7.00 m				
		60 10	7.10 m UCS=2.10 MPa SMC=16.3%	41	7		SILTSTONE: orange brown, beddng indiscernable	XW-HW			7.06-7.13 JTx 2 10-20° Pl Sm cg clay <10mm 7.25-8.30 XS recovered as clay
					8		Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey, hard	XW			
		35 0		40			NO CORE: 8.30-9.20 m				
		45 15		39	9		SILTSTONE: pale grey and pale brown, bedding indiscernable	XW-HW			9.20-9.30 JT 80-90° Pl Sm cg clay intersecting multiple sub-horizontal joints 9.35-9.42 XS 70-80° Ir Sm cg clay >50mm 9.42-9.43 JT 20-30° Pl Sm cg clay <5mm
					10		NO CORE: 9.54-10.00 m				

Comments

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Engineering Borehole Report

FSG-BH01
Sheet 3 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING GROUP SYMB	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
NMLC		90 / 75	10.30 m SMC=12%	38	10		SILTSTONE: pale grey and pale brown, bedding at about 75 degrees	HW			10.07-10.09 BP 70-80° Pl Ro cg clay <10mm
							NO CORE: 10.46-10.50 m				10.50-10.62 BP 70-80° Pl Sm cg clay >20mm
		100 / 25					SILTSTONE: orange brown and grey, bedding at about 75 degrees	HW			10.74-10.84 JT 20-30° Pl Ro vn clay 10.85-11.23 SZx 2 20-70° Pl Sm cg clay
		100 / 35	11.00 m UCS=1.80 MPa SMC=11.4%	37	11						11.07-11.08 JT 10-20° Cu Ro cn
		70 / 0					Becoming pale grey	XW-HW			11.44-11.45 JT 10-20° Ir Vr cg clay <5mm 11.54-11.93 XS 10-20° Pl Sm cg clay <10mm recovered as very low to low strength rock
					12		NO CORE: 11.93-12.10 m				12.10-12.82 XS recovered as clay
		100 / 0		36			Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
		100 / 0	PP 12.50 m =250 kPa PP 12.70 m =180 kPa								
		100 / 0	PP 13.10 m =110 kPa	35	13		SILTSTONE: pale grey and pale brown, bedding indiscernable	XW-HW			12.83-12.92 JTx 2 10-20° Ir Sm cg clay 13.00-13.45 SZ 20-50° Pl Sm cg clay >450mm
		55 / 0					Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
					14		NO CORE: 13.77-14.00 m				14.00-14.30 XS recovered as clay
		100 / 0		34			Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			
		0 / 0					NO CORE: 14.50-15.50 m				
NMLC-SPT		0 / 0	SPT 15.00-15.18 m 27,8/30mm N=8/30mm practical refusal	33	15						15.00: practical refusal
		100 / 0	PP 15.55 m =200 - 230 kPa PP 15.75 m =300 - 360 kPa				Extremely weathered siltstone; CLAY (CI-CH): medium to high plasticity, pale grey and brown, hard	XW			15.50-15.80 XS recovered as clay
		100 / 0	PP 16.10 m =480 kPa	32	16		SANDSTONE: fine grained, pale grey and red-brown, bedding indiscernable, iron oxide staining	XW-HW			16.00-16.22 XS recovered as clay
							Extremely weathered zone up to 16.22 m, recovered as silty clay	XW XW-HW			16.23-16.45 SZ 10-25° Pl Ro sn FeO 16.47-16.57 JTx 3 10-20° Pl Ro cg FeO
		100 / 75	16.60 m SMC=12.1%								16.71-16.94 IS 75-85° Pl Sm cg clay iron oxide staining 16.74-16.75 JT 20-30° Pl Ro sn FeO
		100 / 0		31	17			HW			17.00-17.27 CSx 3 10-20° Un Ro sn FeO >90mm 17.30-17.61 CSx 2 10-20° Ir Ro sn FeO >100mm
		75 / 15									17.71-17.78 JTx 3 20-50° Pl Ro cg FeO intersecting multiple healed iron oxide joints
					18		NO CORE: 17.84-18.00 m				18.00-18.02 JT 10-20° Un Ro cg FeO 18.07-18.11 JT 60-70° Pl Ro cg FeO 18.17-18.18 JT 10-20° Pl Ro cg FeO
		100 / 30	18.15 m UCS=17.00 MPa SMC=6.3%	30			SANDSTONE: fine grained, pale brown and brown, bedding indiscernable, iron oxide coated joints	MW			18.33-18.45 JTx 4 30-50° Ir Ro cg FeO
							Becoming highly fractured, iron oxide stained and coated joints	HW			18.50-19.28 JTx multiple 50-70° Pl Ro cg FeO multiple intersecting joints, iron oxide stained
		100 / 0			19						
				29							19.30-19.60 SZ 10-40° Pl Ro cg FeO
		100 / 0									19.66-19.80 JTx 3 10-30° Pl Ro sn FeO 19.75-19.84 BP 75-85° Pl Ro sn FeO 19.86-20.15 XS 75-85° Pl Sm cg clay
					20		Extremely weathered siltstone seam up to 20.15	XW			

Comments

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Engineering Borehole Report

FSG-BH01
Sheet 4 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING GROUP SYMB	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
NMLC		100 0		28	20		m, recovered as clay SANDSTONE: fine grained, pale brown and brown, bedding indiscernable, iron oxide coated joints *(continued)*	HW			20.17-20.18 JT 10-20° Pl Vr vn FeO 20.30-20.35 JT 10-30° Ir Vr cg FeO 20.33-20.34 JT healed
		75 60	20.80 m UCS=1.80 MPa SMC=8.6%		21		SILTSTONE: grey and pale brown, interbedded with sandstone (30%), bedding at about 75 degrees	HW-MW			
				27			NO CORE: 21.10-21.40 m				
							Hole Terminated at 21.40 m Groundwater well installed				
				26	22						
					23						
				25	24						
				24	25						
				23	26						
				22	27						
				21	28						
				20	29						
				19	30						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH02
Sheet 1 of 4

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 10,16,20 N=36		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10		ML	FILL Sandy Clayey SILT trace gravel: low plasticity, pale brown; sand fine grained; gravel fine to medium grained, sub-angular	w<PL	F-St	FILL
							CL-CI	Silty CLAY: low to medium plasticity, pale grey		VSt-H	RESIDUAL SOIL: Anderson Creek Formation
		SPT 2.50-2.86 m 19,22,9/60mm HB N=31/210mm practical refusal						Pale grey and brown		H	2.50: practical refusal
								Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:57 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH02
Sheet 2 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
				49	0		Continuation from non-cored borehole				
				48	1						
				47	2						
				46	3						
NMLC		100 0	PP 4.35 m =110 kPa PP 4.45 m =130 kPa 4.50 m SMC=20.6%	45	4		Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			Anderson Creek Formation
		80 0			5		NO CORE: 4.90-5.00 m				
		100 30	PP 5.27 m =270 - 335 kPa	44			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		100 0		43	6		SILTSTONE: pale brown and pale red, bedding indiscernable	XW-HW			5.42-5.45 JT Cu Sm cn probable drilling induced 5.46-5.55 BP 60-70° Pl Sm cg clay <5mm intersecting diagonal joint 5.55 JT 0-10° Pl Sm cn <5mm 5.60-5.80 XS cg recovered as clay 5.81-6.18 JTx multiple 80-90° Pl Sm cg clay multiple intersecting sub-horizontal joints 6.22-6.60 JT 60-70° Pl Sm cg black cemented material
		80 15	6.40 m UCS=2.00 MPa SMC=21.6% PP 6.70 m =200 - 250 kPa								
					7		NO CORE: 6.82-7.00 m				
		75 0	PP 7.25 m =250 - 260 kPa	42			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		35 0			8		NO CORE: 7.47-8.32 m				
				41			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
		0 0			9		NO CORE: 8.70-9.30 m				
		100 15	PP 9.40 m =350 kPa	40			Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW			
			PP 9.80 m =250 kPa		10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH02
Sheet 3 of 4

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH) / AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
NMLC		70 0	10.20 m SMC=19.4%	39	10		NO CORE: 10.00-10.16 m			
							Extremely Weathered siltstone; CLAY (CI-CH): pale grey and pale brown, hard	XW		10.31-10.62 JTx multiple 0-10° Pl Sm cg clay
		55 0					NO CORE: 10.77-11.00 m			
		100 35		38	11		SILTSTONE: pale grey and brown, bedding at about 80 degrees	HW		11.34-11.39 SS 10-30° Pl Sm cn
							NO CORE: 11.40-11.89 m			
		55 0			12		SILTSTONE: orange brown and pale grey, bedding at about 80 degrees, interbedded with sandstone (30%)	HW		12.04-12.15 JTx 3 10-20° Pl Sm cn 12.15-12.40 CS crushed rock >350mm
				37			Becoming higly fractured			
							NO CORE: 12.50-12.63 m			
		85 0			13		SILTSTONE: pale grey and orange-brown, bedding at about 80 degrees, interbedded with sandstone (40%)	HW		12.78-13.57 JTx 12 0-15° Pl Sm vn clay
			13.25 m UCS=0.47 MPa SMC=14.4%	36						13.60-13.95 JTx 4 20-30° Pl Sm cg FeO 13.68-13.77 CS 20-30° Pl Ro cg crushed rock
		100 0			14			XW-HW		13.95-14.20 XS recovered as clay
				35				HW		14.20-14.22 BP 70-80° Pl Ro cn
		100 50								14.40-14.52 JTx multiple 10-30° Ir Ro sn FeO intersecting multiple healed iron oxide joints 14.52-14.60 BP 70-80° Pl Ro sn FeO 14.67-14.70 CS 10-20° Cu Ro cg crushed rock <30mm probable drilling induced 14.77-14.83 JT 10-30° Pl Ro sn FeO <10mm
					15		Pale grey and red-brown, bedding indiscernable, interbedded with sandstone (20%) clay seam up to 15.31 m	XW		
		100 40		34				XW-HW		15.68-15.69 JT 0-10° Pl Sm vn clay <3mm
			15.50 m UCS=0.28 MPa SMC=14.2%		16					15.95-15.97 XS recovered as clay 15.97-16.09 SZ 30-40° Pl Ro cg FeO 16.13-16.42 XS recovered as clay and low strength rock
		100 35		33				XW		16.40-16.60 JT 60-70° Pl Ro sn FeO
							SANDSTONE: fine grained, orange-brown and pale grey, interbedded with siltstone (20%)	HW		16.60-16.72 SZ 20-30° Ir Ro sn FeO 16.74 JT 10-20° Pl Sm sn FeO 16.85-16.90 XS probable drilling induced
					17		NO CORE: 16.90-17.24 m			
		70 0		32			SANDSTONE: fine grained, orange-brown and pale grey, highly fractured up to 17.7 m	XW-HW		17.75-17.90 JTx 3 10-20° Ir Ro cn intersecting sub-vertical joint 17.91-17.95 CS 10-20° Cu Ro cg crushed rock <30mm
					18		NO CORE: 18.00-18.10 m			
		90 75		31			SANDSTONE: fine grained	XW		18.33-19.10 JTx 4 20-30° Pl Ro cg FeO 18.43-18.67 JT 70-80° Pl Ro cg FeO healed, intersecting multiple healed sub-horizontal joints
							Healed iron oxide joints	HW-MW		
					19		SILTSTONE: brown-grey, bedding at about 80 degrees, intermittent healed iron oxide joints			18.81-18.82 JT 10-20° Pl Sm cg FeO 19.00-20.27 JTx 7 10-20° Pl Ro vn clay
		100 0	19.53 m UCS=3.30 MPa SMC=8.8%	30						
					20					

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 | Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH02
Sheet 4 of 4

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	7/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	8/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS (PARTICULAR / GENERAL)
NMLC		100 0	20.27 m SMC=6.7%	29 28 27 26 25 24 23 22 21 20	20 21 22 23 24 25 26 27 28 29 30	× × × × × × × × × × × ×	SILTSTONE: brown-grey, bedding at about 80 degrees, intermittent healed iron oxide joints *(continued)* Hole Terminated at 20.40 m Backfilled	HW-MW			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH03

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 7,16,20 N=36		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10		GP	FILL ASPHALT	D	MD	FILL
							CI-CH	FILL Sandy GRAVEL: fine to medium grained, poorly graded, sub-rounded to sub-angular, grey; sand fine to coarse grained	w<PL	H	RESIDUAL SOIL: Anderson Creek Formation
								CLAY: medium to high plasticity, pale grey mottled red and orange			
								Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH03
Sheet 2 of 3

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
				49	0						
					1						
				48	2		Continuation from non-cored borehole				
NMLC			**SPT** 2.50-2.65 m 45 HB 45,0/150mmHB				SILTSTONE: pale grey mottled pale red, bedding dipping 55 to 70 degrees	XW-HW			2.50-2.65 Jox2 55-65° Pl Vr clay <3mm Fe stain 2.50: 45,0/150mmHB 2.50-2.65 Jox2 55-65° Pl Vr clay <3mm Fe stain
		100 70	3.00 m SMC=18.4%	47	3						2.85-2.94 Jo 60-70° Pl Ro clay <3mm Fe stain 3.17-3.18 Jo 10-15° Pl Ro clay <5mm 3.18-3.35 Jo 75-85° Pl Ro vn clay truncating joints 3.57-3.60 XS 0-40° Ir Ro clay <15mm
			4.00 m SMC=16.8%	46	4						3.80-4.08 Jox5 5-10° Pl Ro possibly drilling induced
		100 50						XW			
				45	5			XW-HW			4.38-4.44 Jo 25-35° Pl Sm cg clay 4.45-4.55 SS 35-50° Pl Ro cg clay multiple intersecting joints 4.86-4.93 Jo 65-70° Pl Sm cg clay 5.09-5.23 CS 65-75° Pl Ro crushed rock 15mm 5.25-5.65 Jox3 65-70° Pl Ro vn clay
			5.45 m SMC=12.8%								5.70-5.77 SS 60-75° Pl Vr cg clay
		100 55		44	6		Pale grey with red	HW			6.14-6.25 Jo 60-70° Pl Ro vn clay healed 6.27-6.47 IS Ir Ro Fe disturbed bedding, 10% Fe 6.62-6.68 Jo 60-70° Pl Ro vn clay truncating joints
				43	7		NO CORE: 6.80-7.00 m				7.00-8.00 SS 35-50° Pl Ro vn clay multiple intersecting joints, recovered as gravelly siltstone
		80 0	7.00 m SMC=14.6%				SILTSTONE: pale grey mottled pink, red, orange, bedding dipping 55 to 70 degrees, iron stained 7.1-8.0 m: SHEARED ZONE	XW-HW			
				42	8						8.00-8.25 Jox3 30-50° Pl Ro sn 8.25-8.35 CS 50-70° Pl Vr clay multiple intersecting joints 8.47-8.63 SS 10-30° Pl Ro vn clay multiple intersecting joints
		100 15						HW			
				41	9			HW-MW			8.83-8.84 Jo 10-20° Pl Ro sn 8.84-11.20 Jox10 10-30° Pl Ro cn
		100 90	9.00 m SMC=11.4%				SILTSTONE: purple grey, bedding dipping 60 to 75 degrees, disturbed, iron stained				
			9.70 m UCS=2.90 MPa	40	10						

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

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FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
NMLC		100 *90*	10.00 m SMC=11%	39	10 11		SILTSTONE: purple grey, bedding dipping 60 to 75 degrees, disturbed, iron stained *(continued)*	HW-MW			10.44-10.73 Jo 80-90° Pl Ro sn Fe healed
		100 *90*	11.85 m UCS=6.40 MPa SMC=11.6%	38	12						11.20-11.26 Jo 10-30° Pl Ro sn multiple intersecting joints 11.26-13.56 Jox11 10-40° Pl Ro sn
		100 *90*	13.00 m SMC=9.4%	37	13						13.56-13.68 BP 50-70° Pl Ro Fe
		100 *90*		36	14						13.90-15.86 Jox9 10-30° Pl Ro sn
		100 *60*	14.72 m UCS=6.50 MPa SMC=9.2%	35	15						15.89-15.95 XS 10-30° Pl Ro clay <20mm 15.95-16.93 Jox7 20-70° Pl Ro sn
		100 *75*	16.00 m SMC=8.3%	34 33	16 17						16.93-16.97 Jo 20-40° Pl Ro Fe healed 16.97-18.30 Jox6 10-30° Pl Ro sn 17.25-17.55 IS 75-85° Pl Ro sn Fe
		100 *55*	17.75 m SMC=10.9%	32	18						18.30-18.55 XS 20-60° Pl Ro sn clay <25mm 18.55-18.95 Jox3 10-30° Pl Ro sn
				31 30	19 20		Hole Terminated at 18.95 m Groundwater well installed				

Comments

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FSG GEOTECHNICS +FOUNDATIONS

Engineering Borehole Report

FSG-BH04

Commenced: 9/12/2021
Completed: 10/12/2021
Logged By: SYL/MJF
Checked By: ALH
Final Depth: 17.90 m
Surface RL: 49.43 m AHD
Inclination: -90°
Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.15 m 33 HB practical refusal		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10			CONCRETE: 140 mm thick, reinforced, rebar about 8 mm thick			Fill
							CL-CI	Silty CLAY: low to medium plasticity, white and pale red	w<PL	St	RESIDUAL SOIL: Anderson Creek Formation
							CI	Extremely Weathered siltstone; Sandy CLAY: orange-brown mottled grey, sand is fine grained		H	1.00: practical refusal
								Continued as Cored Borehole			

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

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FSG GEOTECHNICS +FOUNDATIONS

Commenced:	9/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	10/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.90 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR — GENERAL
				49	0						
					1						
				48			Continuation from non-cored borehole				
NMLC		100 55			2		SANDSTONE: fine grained, pale grey and orange-brown, bedding indiscernable, fractured	XW-HW			1.78-1.90 JTx 6 10-20° Pl Ro cg clay intersecting sub-vertical joint 2.00-2.01 JT 0-10° Pl Sm cg clay probable drilling induced 2.05-2.15 JT 70-80° Un Ro cg clay 2.27-2.29 JT 20-30° Pl Ro vn clay
				47			Becoming orange-brown and pale red				2.45-2.62 JTx 5 10-20° Pl Ro cn
		30 0	2.50 m SMC=14.3%		3		NO CORE: 2.67-3.35 m				2.62-2.67 CS 10-20° Pl Ro crushed rock
				46			SILTSTONE: pale brown, bedding indiscernable	XW-HW			3.37-3.46 JT 70-80° Pl Sm vn clay 3.50-4.41 XS recovered as clay
		65 0			4						
				45			NO CORE: 4.41-5.40 m				
					5						
		60 0		44			SANDSTONE: fine grained, orange-brown and pale red, bedding at about 75 degrees, fractured up to 6.5 m	HW			5.40-6.34 JTx multiple 10-20° Pl Ro cn 5.60-5.64 JT 70-80° Pl Ro cg clay
		100 30			6						
		100 100	6.50 m UCS=0.40 MPa SMC=14.3%	43							6.50-6.75 JTx 2 0-10° Pl Ro sn FeO
					7						7.20-7.51 JTx 4 0-15° Pl Ro cn >5mm
		100 60		42							7.60-7.64 CS 0-10° Pl Ro cg crushed rock <40mm
					8		SILTSTONE: pale red and orange-brown, bedding at about 75 degrees, interbedded with sandstone (20%)	HW-MW			7.81-7.89 JTx 2 0-10° Pl Ro cn <3mm 8.05-8.18 JTx multiple 10-20° Pl Ro sn FeO
				41							8.32-9.61 JTx multiple 10-20° Pl Ro sn FeO
		100 45	9.06 m SMC=11.9%		9		Red and orange-brown, bedding at about 85 degrees, interbedded with sandstone (15%)				
				40							
		100 75			10						9.73-10.00 BP 70-80° Pl Vr cg FeO

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

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FSG GEOTECHNICS +FOUNDATIONS

Commenced:	9/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	10/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.90 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
NMLC		100 *75*	10.50 m UCS=2.10 MPa SMC=11.6%	39	10		SILTSTONE: red and orange-brown, bedding at about 85 degrees, interbedded with sandstone (15%)	HW-MW			10.10-10.11 JT 30-40° Ir Ro cn
											10.48-10.49 JT 20-30° Pl Ro sn FeO
		100 *65*		38	11						11.50-11.90 JTx10 10-20° Pl Sm cn
					12						12.00-12.40 SZx multiple 0-30° Pl Sm sn FeO
				37							12.43-13.53 JTx13 10-20° Pl Sm sn FeO
		100 *70*			13						
				36							13.60 JT 70° Pl Sm cg clay 10mm healed
			13.80 m UCS=1.60 MPa SMC=10.5%		14						
				35							14.25 JT 45-90° Un Sm cg Feo >20mm healed 14.30 JT 15° Pl Sm vn FeO >3mm
		100 *100*			15						
				34							15.50-15.67 JTx3 0° Pl Sm cn
			15.67 m UCS=3.20 MPa SMC=10%		16						
		100 *90*		33							16.40 JT 60° Cu Ro vn clay
					17						
											17.25 XS 0-10° Pl Sm cg clay healed
		100 *80*		32							17.60-17.83 JTx4 0-10° Pl Sm cn
					18		Hole Terminated at 17.90 m Grouted				
				31							
					19						
				30							
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH05
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FSG GEOTECHNICS +FOUNDATIONS

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**D** 1.00-1.15 m **SPT** 1.00-1.15 m 25/145mm		49 48 47 46 45 44 43 42 41 40	0 1 2 3 4 5 6 7 8 9 10		CI	FILL CONCRETE: 130 mm thick, reinforced CLAY trace sand: medium plasticity, pale brown and red brown; sand fine grained Continued as Cored Borehole	w<PL	VSt-H	FILL RESIDUAL SOIL: Anderson Creek Formation

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH05
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FSG GEOTECHNICS +FOUNDATIONS

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
				49	0						
					1		Continuation from non-cored borehole				
				48							
NMLC		100 30			2		SILTSTONE: pale grey and orange brown, massive, trace fine grained sand and trace iron staining	HW			1.70-4.30 JTmultiple defects 0-10° Pl Sm sn FeO 2.22-4.16 JTx7 40-50° Pl Sm sn FeO
		100 25	2.53 m SMC=14%	47	3						
				46	4			HW-MW			
		70 0						XW			
				45	5		NO CORE: 4.48-5.22 m				
		75 25	5.22 m SMC=14.3%	44	6		SILTSTONE: red-brown and orange-brown, bedding indiscernable, iron oxide staining	XW-HW			5.36-5.80 BP 60-70° Pl Ro cg clay 5.55 JT 10-20° Pl Ro sn FeO >5mm 5.65-5.68 CS 10-20° Pl Sm vn crushed rock 5.86-5.91 JT 10-20° Ir Sm cn <3mm 6.00-6.30 CS 50-60° Ir Ro cn crushed rock
				43	7		Bedding at about 75 degrees	HW			6.37-6.79 JTx 5 10-30° Pl Sm cn
		100 50	6.80 m UCS=0.36 MPa				SANDSTONE: fine grained, orange-brown and pale grey, highly fractured	XW-HW			7.22-7.35 JT 10-20° Pl Ro sn FeO 7.37-7.84 SZ 50-60° Pl Ro cg clay 7.50-7.63 XS 70-80° Pl Ro cg clay >50mm recovered as clay
		65 0		42	8		NO CORE: 7.84-8.40 m				
		85 60	8.85 m SMC=14.9%	41	9		SANDSTONE: fine to medium grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (20%), occasional fractured zones	HW			8.60-8.72 JT 20-30° Cu Ro vn clay 9.00-9.12 BP 70-80° Pl Sm cg clay <10mm 9.19-9.24 JT 70-80° Un Sm cn <3mm 9.33 JT 10-20° Pl Sm cn <3mm 9.47-9.63 SZ 50-60° Ir Ro sn crushed rock iron oxide staining 9.67-10.00 SZ sn crushed rock iron oxide staining
		100 45		40	10			XW-HW			

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH05
Sheet 3 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS — PARTICULAR / GENERAL
NMLC		100 45		39	10		SANDSTONE: fine to medium grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (20%), occasional fractured zones *(continued)*	HW			
							Becoming pale grey-red and orange-brown	XW-HW			10.34-10.50 JTx multiple 20-35° Pl Ro cg grey gravel <5mm healed
		100 85		38	11			HW			10.61-10.70 CS Ro cg 70% crushed rock, 30% clay <100mm
			11.35 m SMC=18.3%								10.75-10.89 JT 80-90° Un Ro sn FeO
		100 80									10.92-11.00 CS 80% crushed rock, 20% clay
					12		Becoming orange-brown and pale red				12.04-12.18 JTx 3 10-20° Pl Ro sn FeO
		100 30	12.60 m UCS=1.60 MPa SMC=13.4%	37	13						12.30-12.63 BPx 2 70-80° Pl Sm cg white clay <5mm intersecting multiple sub-horizontal joints
											12.78-12.95 XS 70-80° Ir Ro cg 80% clay, 20% crushed rock intersecting multiple joints
											13.00-13.02 JT 10-30° Un Sm cn
		90 45	13.86 m SMC=10%	36	14						13.44-13.54 BP 70-80° Pl Sm cg clay iron oxide staining
											13.55-13.56 JT 10-20° Cu Sm cn <5mm
											13.74-13.79 JTx 2 30-40° Pl Sm vn white clay intersecting sub-vertical joint
											13.80-13.92 SZ Pl Sm cg clay
											14.06-14.18 JTx multiple 10-20° Pl Sm sn FeO
											14.30-14.35 CS probable drilling induced
				35			NO CORE: 14.35-14.50 m				14.50-15.15 JTx multiple 80-90° Pl Ro sn FeO intersecting multiple sub-horizontal joints
		60 0			15		SANDSTONE: fine grained, orange-brown, bedding indiscernable	HW			15.15-15.24 JTx multiple 10-20° Pl Ro sn FeO
				34			NO CORE: 15.24-15.70 m				15.76-15.87 JTx 4 10-30° Un Ro sn FeO clay veneer
		100 60			16		SANDSTONE: fine to medium grained, orange-brown, bedding indiscernable, healed iron oxide joints	HW-MW			15.88-16.49 JTx multiple 10-70° Pl Ro cg FeO healed
											16.14 JT 20-30° Pl Ro sn FeO
				33							16.32-16.34 JT 10-20° Ir Ro cn
							SILTSTONE: pale grey-brown, bedding at about 75 degrees, interbedded with sandstone (10%)	XW			16.56-16.70 XS 70-80° Pl Ro cg >50mm recovered as clay
		100 85	17.00 m UCS=2.10 MPa		17			HW-MW			16.75-16.80 JT 10-20° Ir Ro cg FeO healed
											16.90-16.95 JT 10-70° Ir Sm cn <3mm
											17.00 JT 10-20° Ir handling induced
		100 95		32							
					18		Hole Terminated at 17.77 m Groundwater well installed				
				31							
					19						
				30							
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION						
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
DT	Not Observed			49	0			FILL CONCRETE: 120 mm thick, reinforced			FILL
							SP	FILL SAND trace gravel: fine to medium grained, pale brown; gravel coarse grained, angular	D	L-MD	0.12: Strong hydrocarbon odour
							ML		w<PL-w~PL	F-St	
AD/T							CI	FILL Gravelly SILT WITH COBBLES with sand: low plasticity, dark brown; gravel fine to medium grained, sub-angular to angular; cobbles less than 30 mm in diameter, sub-angular to angular; sand fine grained; with clumps of low plasticity clay			0.50: 100 mm layer of rubble comprising concrete, brick and ballast cobbles, trace metal fragments
		SPT 1.05-1.30 m 12,18/100mm HB N=18/100mm practical refusal		48	1		CL-CI	FILL Gravelly CLAY: medium plasticity, dark brown; gravel fine grained, angular; hydrocarbon odour	w<PL	H	EXTREMELY WEATHERED MATERIAL: Anderson Creek Formation
								Extremely Weathered siltstone; Gravelly CLAY: low to medium plasticity, pale grey and orange-brown; gravel coarse grained, angular			1.05: practical refusal
				47	2			Continued as Cored Borehole			
				46	3						
				45	4						
				44	5						
				43	6						
				42	7						
				41	8						
				40	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06
Sheet 2 of 4

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS (PARTICULAR / GENERAL)
				49	0						
				48	1		Continuation from non-cored borehole				
NMLC		80 / 20		47	2		SILTSTONE: orange-brown and pale grey, bedding indiscernable	XW-HW			
								HW			2.11-2.34 JTx 2 70-80° Un Ro cn truncating multiple sub-horizontal joints 2.30-2.35 BP 70-80° Pl Sm vn clay
							NO CORE: 2.50-2.70 m				2.70-2.95 BP 75-85° Cu Sm cg clay >5mm
		100 / 0	3.10 m SMC=16.5%	46	3		SILTSTONE: orange-brown and pale red, bedding at about 85 degrees, interbedded clay seams	HW			3.02-3.05 JT handling induced 3.11-3.12 JT 10-20° Pl Sm cn possible drilling induced 3.12-3.40 BP 75-85° Pl Sm cg clay >5mm 3.26-3.55 JT 25-35° Pl Sm cg clay >5mm
							NO CORE: 3.70-3.83 m				3.66-3.67 JT 15-20° Ir Ro cn
		90 / 10		45	4		Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			3.83-4.52 XS 70-80° Pl Ro cg clay recovered as clay
					5		SILTSTONE: becoming pale red and orange brown, bedding indiscernable	HW			4.73-4.80 SS 50-60° Pl Ro cg clay
							Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			4.92-5.10 XS recovered as clay
				44			NO CORE: 5.10-5.63 m				5.63-6.66 XS recovered as gravelly clay
		65 / 0	5.85 m SMC=14.4% **PP** 6.45 m =230 kPa	43	6		SILTSTONE: pale brown and pale grey, Extremely Weathered siltstone; CLAY (Cl): medium plasticity, orange-brown and pale grey, inferred hard	XW			
					7		NO CORE: 6.66-7.16 m				7.16-7.70 XS recovered as gravelly clay
		50 / 0		42			SILTSTONE: pale brown and pale grey, bedding indiscernable	XW-HW			7.70-7.73 JT 10-20° Pl Ro cg clay 7.75-8.04 JT 20-30° Pl Ro cg clay iron oxide staining
		100 / 0			8						
		50 / 0		41			NO CORE: 8.22-8.45 m				
		100 / 30					SILTSTONE: pale orange-brown, bedding indiscernable, clay seam up to 8.61 m	XW			8.64-8.95 JTx 5 10-30° Cu Sm cn probable drilling induced
					9			XW-HW			8.95-9.10 IS 70-80° Pl Sm cg clay >5mm 9.05-9.10 JT 60-70° Pl Sm cg clay
		100 / 20	9.06 m SMC=14.7%	40			Bedding at about 75 degrees, interbedded with sandstone (10%)	HW			9.18-9.32 JTx multiple 10-30° Ir Ro cg clay, sand
											9.49-9.51 CS 10-20° Pl Ro cg crushed rock
		100 / 60			10						9.61-9.70 JTx 2 20-30° Pl Sm cn >5mm 9.79-9.80 CS 10-20° Pl Ro cg crushed rock <10mm

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH06
Sheet 3 of 4

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS: PARTICULAR / GENERAL
NMLC		100 25		39	10		SILTSTONE: pale orange-brown, bedding indiscernable, clay seam up to 8.61 m *(continued)*	XW			9.91-10.03 XS recovered as clay 10.13-10.56 JTx 5 10-20° St Sm cg white clay
							Becoming orange-brown	HW			
		100 90		38	11		Becoming pale grey and orange-brown, healed iron oxide joints				10.92-11.81 JTx 6 10-20° Pl Sm cn possible drilling induced 11.02-11.03 JT handling induced
			11.66 m UCS=3.10 MPa SMC=11.8%		12						12.15-13.55 JTx 11 0-10° Pl Sm cn
		100 65		37	13		SILTSTONE: grey and orange-brown, bedding at about 75 degrees, interbedded with sandstone (5%), trace iron oxide staining	HW-MW			
				36			SANDSTONE: fine grained, orange-brown and pale grey, bedding at about 75 degrees, interbedded with siltstone (5%)				13.67-14.37 JTx multiple 0-10° Pl Sm sn FeO
		85 15	14.10 m UCS=0.26 MPa SMC=13.9%	35	14			HW			14.37-14.76 XS 0-10° Pl Ro recovered as clay
					15		NO CORE: 14.76-15.69 m				
		55 0		34	16		SILTSTONE: pale grey and orange-brown, iron oxide staining	XW-HW			15.90-16.35 XS recovered as gravelly clay
				33							16.35-16.47 SZ 70-80° Pl Ro lenticular rock 16.47-16.50 XS 16.60-16.66 JT 60-70° Pl Sm cg FeO 16.66-16.69 JT 20-30° Pl Sm cg FeO 16.75-17.00 SZ 10-20° Pl Ro cg lenticular rock iron oxide coating
		65 0	16.70 m SMC=15.2%		17		NO CORE: 17.00-17.28 m				
		100 0		32			SILTSTONE: orange-brown and pale grey, bedding at about 70 degrees, iron oxide staining, interbedded with sandstone (30%)	HW			17.33-17.42 JT 10-30° Pl Ro sn FeO 17.52-17.65 XS recovered as clay
		100 15			18		Becoming grey and orange-brown	XW HW			17.76-17.92 JTx 3 10-30° Pl Sm vn clay iron oxide staining, probable drilling induced 18.11-18.13 JT 40-50° Ir Sm vn clay
		100 25		31							18.37-18.96 JTx multiple 20-30° Pl Ro cg FeO 18.40-18.71 JTx multiple 60-70° healed iron oxide joints
		100 55			19						19.05-19.06 JT 20-30° Ir Ro cg FeO 19.29-19.32 XS 15-25° Pl Ro cg 90% clay, 10% crushed rock iron oxide staining
				30				HW-MW			19.52-19.63 JTx 2 10-20° Pl Sm cn
		100 85	19.63 m UCS=0.74 MPa SMC=11.3%		20		Becoming pale red				19.81-19.82 JT 10-20° Pl Sm cn probable drilling induced

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH06

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	15/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	17/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.71 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
NMLC		100 *85*		29	20		Becoming grey and orange-brown SILTSTONE: orange-brown and pale grey, bedding at about 70 degrees, iron oxide staining, interbedded with sandstone (30%) *(continued)*	HW-MW			20.00-20.29 JTx 3 10-30° Pl Ro cg FeO 20.43-20.50 CS 60-70° Pl Ro cg FeO <10mm
				28	21		Hole Terminated at 20.71 m Backfilled				
				27	22						
				26	23						
				25	24						
				24	25						
				23	26						
				22	27						
				21	28						
				20	29						
					30						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH07

Commenced: 31/1/2022
Completed: 1/2/2022
Logged By: SYL
Checked By: ALH
Final Depth: 20.26 m
Surface RL: 52.45 m AHD
Inclination: -90°
Client: Northcote Devco Pty Ltd
Project: 25 Separation Street
Project No.: 4067
Contractor: Rockwell Drilling; Comacchio Geo 205
Hole Location: Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed			52	0		CI	FILL Sandy Silty CLAY: medium plasticity, dark brown; sand fine to medium grained; trace brick fragments	w~PL	F	FILL
		SPT 1.00-1.45 m HW/50mm,1/100mm,2,4 N=6		51	1		CI-CH	FILL CLAY trace sand: medium to high plasticity, mottled grey dark brown; sand fine grained	w~PL	S-F	
		SPT 2.50-2.95 m HW/300mm,1		50	2			With sand: sand fine to medium grained			
				49	3			With gravel: gravel coarse grained, sub-rounded to sub-angular; with brick fragments			
WB		**SPT** 4.00-4.45 m HW/100mm,1/50mm,2,3 N=5		48	4						4.10: 100% water loss
		SPT 5.50-5.95 m HW/40mm,1/110mm,5,16 N=21		47	5		CH	Sandy CLAY: high plasticity, pale grey mottled orange brown; sand medium to coarse grained, of SILTSTONE origin	w~PL-w>PL	VSt	
				46	6		SC	Extremely Weathered siltstone; Clayey SAND: fine to medium grained, orange-brown; clay high plasticity	M-W	D	
				45	7			Continued as Cored Borehole			
				44	8						
				43	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:58 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

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Sheet 2 of 4

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
				52	0						
				51	1						
				50	2						
				49	3						
				48	4						
				47	5						
				46	6		Continuation from non-cored borehole				
NMLC	Water	100 50	**SPT** 6.50-6.57 m 20/65mm HB	45	7		Extremely Weathered siltstone; CLAY (Cl): brown mottled grey, hard	XW			6.50-6.60 XS SPT hole present 6.60-6.70 JT 70-80° Pl Sm cn intersecting sub-horizontal joint 6.74-6.80 IS 55-65° Pl Sm cg clay recovered as clay 6.86-7.71 JTx 6 0-10° Pl Sm cn
			7.00 m UCS=2.70 MPa				SILTSTONE: brown-grey, bedding at about 60 to 70 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%)	HW			
		100 40	7.42 m UCS=3.20 MPa SMC=9.9%	44	8			HW-MW			7.70-8.00 JT 70-80° Pl Sm cn intersecting multiple micro joints 8.20-8.66 JTx 4 0-10° Pl Sm cn <3mm 8.44-8.52 JTx multiple 10-40° Ir Sm cn multiple micro joints
		100 60		43	9		Extremely weathered seam up to 8.81 m	XW HW-MW			8.69-8.81 XS recovered as clay 9.00-9.15 JTx multiple 60-70° 9.15-9.30 JT 60-70° Pl Sm sn Fe
		100 50	9.54 m SMC=10.3%		10						9.54-9.64 JTx 2 10-20° Pl Sm vn Fe 9.68-10.20 JTx 5 10-20° Pl Sm sn FeO >5mm

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH07
Sheet 3 of 4

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
NMLC	Water	100 50	11.00 m SMC=11.5%	42	10		SILTSTONE: brown-grey, bedding at about 60 to 70 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%) *(continued)*	HW-MW			10.30-10.70 SZ 60-70° Ir Ro sn crushed rock iron oxide staining
							Sheared zone up to 10.77 m	XW-HW			10.71-10.77 CS 50-60° Pl Ro sn crushed rock <15mm iron oxide staining
				41	11		Fractured zone up to 11.69 m	HW			11.31-11.41 JTx 2 10-20° Pl Ro sn crushed rock <20mm iron oxide staining 11.50-11.52 IS 10-20° Pl Sm cg clay <20mm 11.58-11.71 JTx 2 10-20° Pl Ro sn FeO
		100 60		40	12						11.81-12.26 JTx 3 10-25° Pl Sm sn FeO <5mm
			12.90 m SMC=11.7%		13						12.90 JT 0-10° Pl Sm cn <10mm
		100 65		39			SILTSTONE: brown-grey, bedding at about 70 to 80 degrees, some iron oxide staining, interbedded SANDSTONE layers (5%)	XW HW-MW			13.18-13.27 XS 30-40° Pl Ro cg 60% crushed rock, 40% clay <100mm 13.45-13.46 JT 20-30° Pl Sm cn <3mm 13.53 JT probable drilling induced 13.72-13.75 CS 0-10° Ir Ro sn crushed rock iron oxide staining
					14						14.04-14.12 JTx 2 10-20° Pl Sm vn black material
		100 55	14.66 m UCS=2.70 MPa SMC=9.9%	38							14.59-14.66 JTx 2 10-20° Pl Sm sn Fe <10mm
					15		Fractured zone up to 15.2 m				14.90-15.20 SZ Ir Vr sn FeO
				37							15.28 JT 10-20° Pl Ro sn FeO <10mm 15.47-15.55 JTx multiple 40-60° Ir Ro sn FeO 15.62-15.63 JT 20-30° Pl Sm sn FeO <5mm 15.75 JT 0-10° Pl Sm cn <5mm
					16						16.17 JT 0-10° Pl Sm cn <3mm
		100 75		36							16.65-16.67 JT 0-10° Pl Ro sn FeO <10mm
					17						16.90-17.00 JTx multiple 10-20° Pl Ro sn crushed rock iron oxide staining 17.05-17.15 JTx 2 10-20° Pl Sm cg FeO
			17.05 m SMC=9.1%				Becoming grey-brown				
		100 100		35							
					18						18.03-19.37 JTx 7 0-10° Pl Sm cn <5mm
				34							
			18.90 m SMC=7.6%		19						
		100 85		33							19.66-19.69 JT 50-60° Pl Sm cn 19.82-20.00 JTx multiple 20-40° Pl Sm sn Fe
					20						

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH07
Sheet 4 of 4

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
		100 85			20	× × × × × × × × × × × ×					20.02 JT 0-10° PI
				32			Hole Terminated at 20.26 m Groundwater well installed				
					21						
				31							
					22						
				30							
					23						
				29							
					24						
				28							
					25						
				27							
					26						
				26							
					27						
				25							
					28						
				24							
					29						
				23							
					30						

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-05-02.Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH08

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY R STRENGTH	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 5,10,13 N=23 **PP** 1.10 m =500 kPa		49 48	0 1		SP	ASPHALT: 30 mm thick	M	MD	Fill FILL
							GP	FILL SAND with gravel: fine to coarse grained, red orange; gravel fine to medium grained, sub-angular to sub-rounded			
							CH	FILL Sandy GRAVEL with clay: fine to medium grained, sub-rounded to sub-angular, grey brown; sand fine to coarse grained; with brick fragments and building rubble			
								CLAY with gravel: high plasticity, red orange; gravel fine to medium grained, sub-rounded to sub-angular	w<PL	VSt-H	RESIDUAL SOIL: Anderson Creek Formation
				47	2			Extremely Weathered siltstone; CLAY (CH): high plasticity, red-orange		H	
		SPT 2.50-2.83 m 10,26,10/30mm HB N=36/180mm									
				46	3			Continued as Cored Borehole			
				45	4						
				44	5						
				43	6						
				42	7						
				41	8						
				40	9						
					10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH08
Sheet 2 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS
											PARTICULAR / GENERAL
				49	0						
				48	1						
				47	2						
							Continuation from non-cored borehole				
NMLC		100 0	**SPT** 2.50-2.83 m 10,26,10/30mm HB	46	3		Extremely Weathered siltstone; CLAY (CH): high plasticity, orange-brown and pale grey, hard	XW			2.80 XS
		100 0	3.00 m SMC=15.6%								3.10-3.20 SZ 70-80° Ir Ro cg white clay 3.20-3.50 Jox multiple Pl Sm cg white clay <3mm multiple intersecting joints
		100 0		45	4		SILTSTONE: orange brown and pale grey, bedding at about 80 degrees, iron stained, highly fractured, infilled with clay	XW-HW			3.50-3.80 SZ 70-80° Pl Sm cg clay >250mm 3.80-3.92 XS 70-80° Pl Sm cg clay <200mm 4.06-4.20 Jox 2 70-80° Pl Ro cn intersecting multiple micro joints 4.21-4.28 CS Ro sn Fe
		100 35	4.55 m SMC=13.3%		5		Becoming less fractured				4.36-4.52 ISx 2 10-20° Pl Ro cg 90% clay, 10% crushed rock <50mm iron stained 4.66 Jo 10-20° Pl Sm sn Fe <5mm 4.70-5.10 SZ 70-80° Pl Ro cg 80% clay, 20% crushed rock
		100 0		44	6		Extremely Weathered siltstone; CLAY (CH): high plasticity, orange-brown and pale grey, hard	XW			5.10-5.90 XS 60-80° Pl Ro clay recovered as gravelly clay 5.90-6.40 XS 40-60° Pl Ro clay
		100 45		43	7		SILTSTONE: orange-brown and pale grey, bedding at 80 degrees, disturbed	XW-HW			6.40-6.95 Jox2 20-40° Pl Ro cg clay <2mm 6.95-7.05 XS 10-20° Pl Ro clay
		100 55	7.65 m UCS=1.20 MPa SMC=12.2%	42	8			HW			7.25-7.38 SZ 10-80° Pl Ro sn Fe multiple intersecting joints 7.38-7.56 Jox1 70-80° Pl Ro sn Fe 7.56-8.10 Jox3 10-20° Pl Ro sn Fe 8.05-8.14 BP 70-80° Pl Ro sn Fe 8.10-8.50 Jo 10-80° Pl Ro cg Fe multiple truncating intersecting joints, healed 8.12-8.27 XS 70-80° Pl Ro clay >30mm 8.25-8.39 Jox2 60-70° Un Sm cg clay iron stained 8.39-8.84 Jox2 10-20° Pl Vr sn Fe 8.60-8.66 XS 50-60° Pl Ro clay >50mm 8.66-8.73 SS 20-40° Pl Ro sn Fe multiple intersecting joints 8.73-12.10 Jox11 20-60° Pl Ro sn Fe 8.84-8.86 XS 10-20° Pl Ro clay <20mm
		100 35	8.85 m SMC=11.9%	41	9						
		100 85		40	10						

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH08
Sheet 3 of 3

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	22/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	22/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.20 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR *RQD*	SAMPLING & TESTING	*RL (m)*	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS (PARTICULAR / GENERAL)
NMLC		100 *85*	10.00 m SMC=10.2%	39	10		SILTSTONE: orange-brown and pale grey, bedding at 80 degrees, disturbed *(continued)*	HW			10.00-10.10 BP 70-80° Pl Ro sn Fe healed
		100 *65*	11.20 m UCS=2.70 MPa SMC=10.5%	38	11						11.70-11.82 XS 70-80° Pl Ro clay <15mm
					12						12.10-12.20 XS 70-80° Pl Ro clay <20mm 12.11-12.50 SZ 40-60° Pl Ro cg clay iron stained
		100 *0*		37							
		100 *40*			13						12.75-12.90 Jo 30-80° Pl Ro sn Fe multiple truncating intersecting joints
				36			Hole Terminated at 13.20 m Backfilled				
				35	14						
				34	15						
				33	16						
				32	17						
				31	18						
				30	19						
					20						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH09

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION					
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB *WEATHERING*	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CON/DENSITY *R STRENGTH*	STRUCTURE & ADDITIONAL OBSERVATIONS
AD/T	Not Observed	**SPT** 1.00-1.45 m 4,7,9 N=16 **PP** 1.10 m =350 kPa		49 48	0 1		SP	ASPHALT	M	MD	Fill
								FILL SAND with gravel: fine to coarse grained, poorly graded, red orange; gravel fine to medium grained, sub-angular to sub-rounded			FILL
							GP	FILL Sandy GRAVEL with clay with: fine to medium grained, poorly graded, sub-rounded to sub-angular, grey brown; sand fine to corase grained; brick fragments and building rubble	M	L	
							CH	CLAY with gravel: high plasticity, pale brown; gravel fine grained, sub-rounded	w~PL	VSt-H	RESIDUAL SOIL: Anderson Creek Formation
		SPT 2.50-2.95 m 13,24,30 N=54		47	2 3			Extremely Weathered siltstone; CLAY (CH): high plasticity, pale grey with orange		H	
				46				Continued as Cored Borehole			
				45	4						
				44	5						
				43	6						
				42	7						
				41	8						
				40	9 10						

Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE NON-CORE 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:00 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Engineering Borehole Report

FSG-BH09
Sheet 2 of 3

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION	
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING GROUP SYMB	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR / GENERAL
				49	0						
				48	1						
				47	2						
							Continuation from non-cored borehole				
NMLC		30 0		46	3		NO CORE: 2.95-3.84 m				
				45	4		Extremely Weathered siltstone / sandstone; CLAY (CH): high plasticity, grey, hard	XW			
		100 25		44	5						
							SILTSTONE: pale grey and brown, bedding dipping 60 to 75 degrees, disturbed, multiple iron healed joints, iron stained	XW-HW			5.37-7.75 Jox14 20-30° Pl Ro sn Fe 5.40-5.72 XS 50-70° Pl Ro clay <35mm gravelly clay seam
		100 30	6.00 m SMC=11.5%	43	6			HW			5.85-5.93 SS 20-40° Pl Ro clay <3mm multiple truncating intersecting joints 6.47-6.90 Jo 75-85° Pl Ro cg clay <2mm
		100 40	7.45 m UCS=0.57 MPa SMC=10.2%	42	7						7.30-7.60 BP 70-80° Pl Ro sn Fe healed 7.70-8.00 Jo 60-80° Pl Ro cg clay multiple truncating intersecting joints
				41	8						8.08-8.25 Jo 50-70° Pl Ro vn clay multiple truncating intersecting joints 8.30-8.40 SS 20-80° Pl Ro vn clay multiple truncating intersecting joints 8.40-9.04 Jox6 20-40° Pl Ro sn Fe
		100 50	8.50 m UCS=0.48 MPa SMC=13.8%	40	9						9.30-9.50 Jo 70-80° Pl Ro vn clay multiple truncating intersecting joints 9.63-9.65 XS 10-20° Pl Ro clay <20mm 9.65-11.20 Jox9 10-20° Pl Ro sn Fe
					10						

Comments

FSG 1.01.2 LIB:GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 20190402 Prj: FSG 1.01.0 2019-05-02

Engineering Borehole Report

FSG-BH09
Sheet 3 of 3

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION				DEFECT INFORMATION		
METHOD	WATER	TCR RQD	SAMPLING & TESTING	RL (m)	DEPTH (m)	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING GROUP SYMB	INFERRED STRENGTH $Is_{(50)}$ MPa (VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	AVERAGE SPACING (mm) (30, 100, 300, 1000, 3000)	DEFECT DESCRIPTION & ADDITIONAL OBSERVATIONS PARTICULAR	GENERAL
NMLC		100 45	10.00 m SMC=11.3%	39	10		SILTSTONE: pale grey and brown, bedding dipping 60 to 75 degrees, disturbed, multiple iron healed joints, iron stained *(continued)*	HW				
				38	11						11.20-11.42 CS 40-60° Ir Ro sn Fe	
											11.42-13.00 Jox10 10-30° Pl Ro sn Fe	
		100 15	12.00 m SMC=8.8%	37	12			XW-HW				
					13		Hole Terminated at 13.00 m Groundwater well installed					
				36	14							
				35	15							
				34	16							
				33	17							
				32	18							
				31	19							
				30	20							

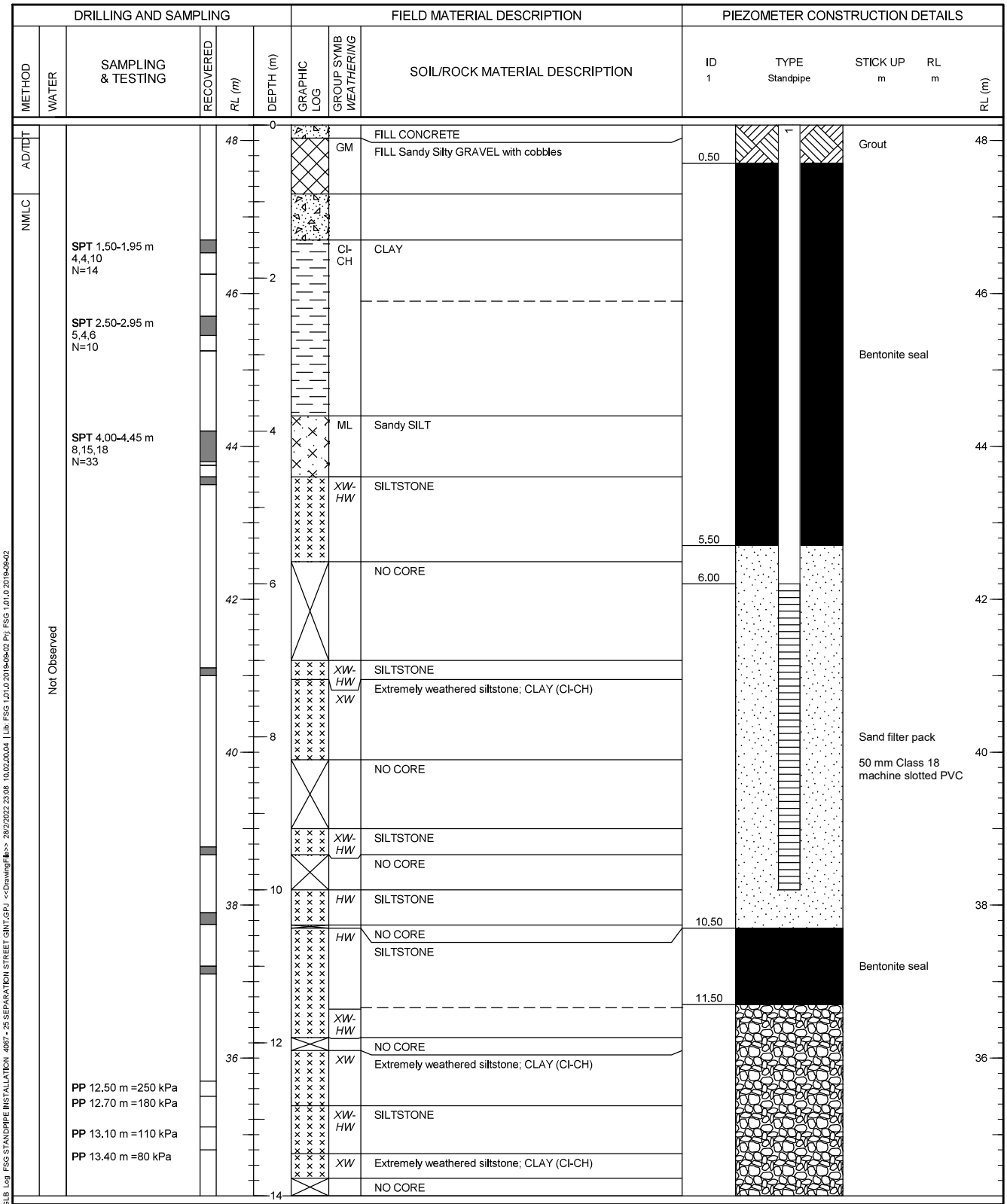
Comments

FSG 1.01.2 LIB.GLB Log FSG BOREHOLE CORED 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 22:59 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH01
Sheet 1 of 1

Commenced:	2/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	6/12/2021			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	48.20 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	21.40 m	**Inclination:**	-90°	**Hole Location:**	Northcote



Comments

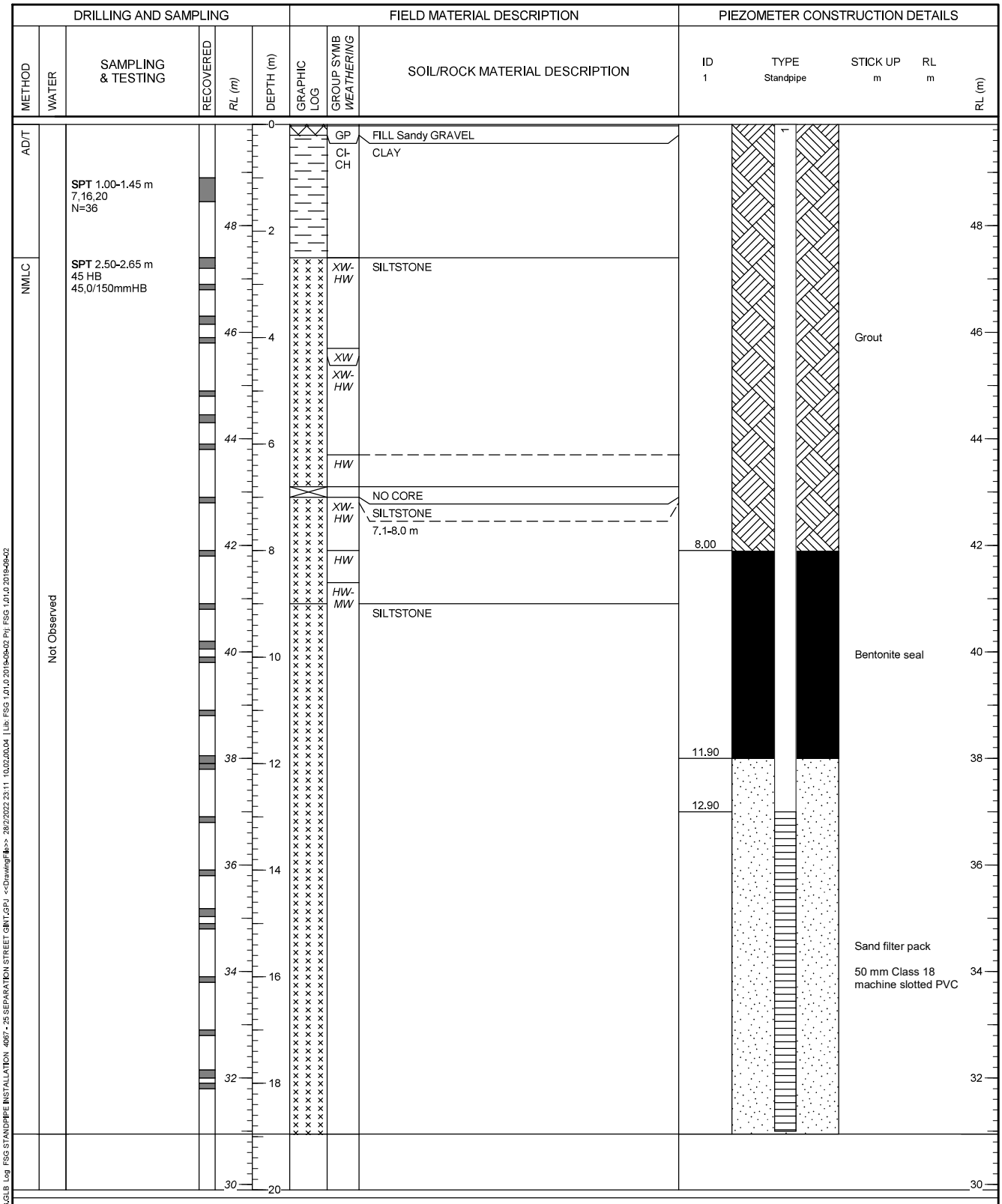
FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH03
Sheet 1 of 1

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	18/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	18/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.90 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	18.95 m	**Inclination:**	-90°	**Hole Location:**	Northcote



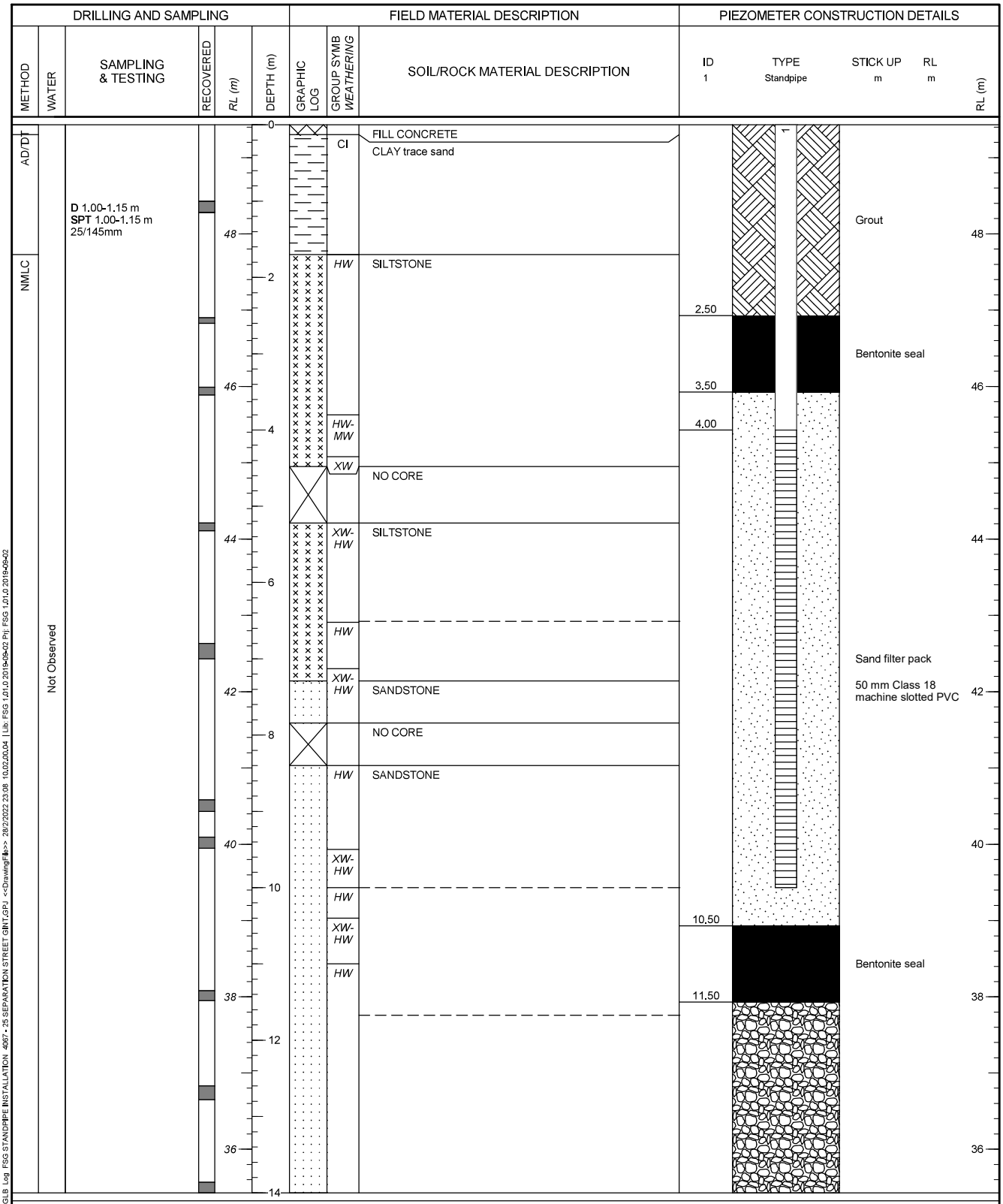
Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:11 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH05
Sheet 1 of 1

Commenced:	13/12/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	14/12/2021			**Project:**	25 Separation Street
Logged By:	SYL/MJF			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.43 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	17.77 m	**Inclination:**	-90°	**Hole Location:**	Northcote



Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH07
Sheet 1 of 1

FSG GEOTECHNICS +FOUNDATIONS

Commenced:	31/1/2022			**Client:**	Northcote Devco Pty Ltd
Completed:	1/2/2022			**Project:**	25 Separation Street
Logged By:	SYL			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	52.45 m AHD	**Contractor:**	Rockwell Drilling; Comacchio Geo 205
Final Depth:	20.26 m	**Inclination:**	-90°	**Hole Location:**	Northcote

DRILLING AND SAMPLING						FIELD MATERIAL DESCRIPTION			PIEZOMETER CONSTRUCTION DETAILS				
METHOD	WATER	SAMPLING & TESTING	RECOVERED	RL (m)	DEPTH (m)	GRAPHIC LOG	GROUP SYMB WEATHERING	SOIL/ROCK MATERIAL DESCRIPTION	ID 1	TYPE Standpipe	STICK UP m	RL m	RL (m)
AD/T				52	0		CI	FILL Sandy Silty CLAY					52
		SPT 1.00-1.45 m HW/50mm,1/100mm,2,4 N=6					CI-CH	FILL CLAY trace sand				Grout	
		SPT 2.50-2.95 m HW/300mm,1		50	2			With sand					50
								With gravel				Bentonite seal	
WB		**SPT** 4.00-4.45 m HW/100mm,1/50mm,2,3 N=5		48	4								48
		SPT 5.50-5.95 m HW/40mm,1/110mm,5,16 N=21			6		CH	Sandy CLAY					
NMLC	Not Observed	**SPT** 6.50-6.57 m 20/65mm HB		46			SC						46
							XW	Extremely Weathered siltstone; CLAY (CI)					
							HW	SILTSTONE					
					8		HW-MW					Sand filter pack	
				44								50 mm Class 18 machine slotted PVC	44
							XW						
							HW-MW						
	Water				10								
				42			XW-HW						42
							HW						
					12							Bentonite seal	
				40									40
							XW	SILTSTONE					
					14		HW-MW						

3.40
4.50
5.00
11.70
12.50

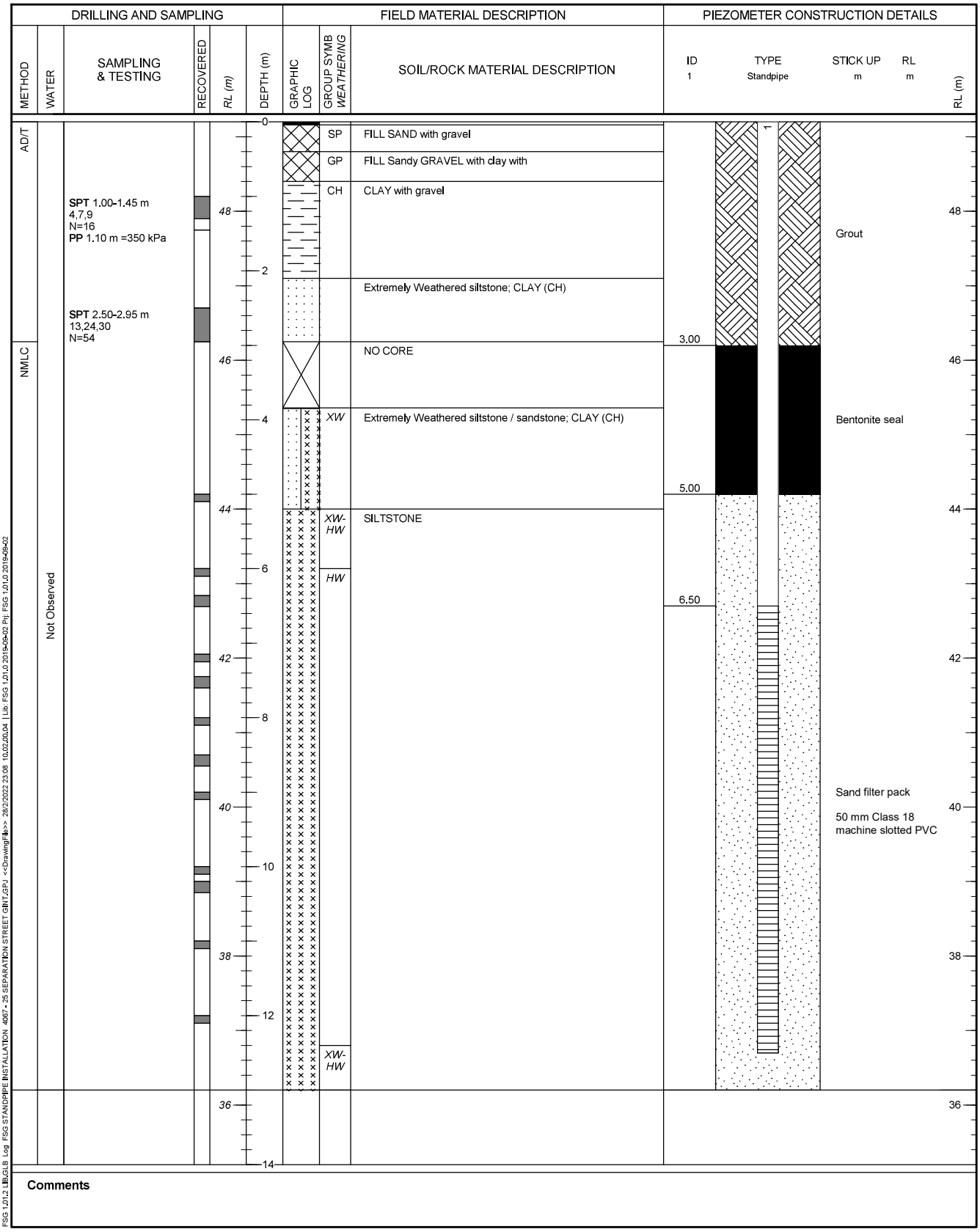
Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

Standpipe Installation Report

FSG-BH09
Sheet 1 of 1

Commenced:	19/11/2021			**Client:**	Northcote Devco Pty Ltd
Completed:	19/11/2021			**Project:**	25 Separation Street
Logged By:	CW			**Project No.:**	4067
Checked By:	ALH	**Surface RL:**	49.20 m AHD	**Contractor:**	APEX Drilling; Fraste ML
Final Depth:	13.00 m	**Inclination:**	-90°	**Hole Location:**	Northcote



Comments

FSG 1.01.2 LIB.GLB Log FSG STANDPIPE INSTALLATION 4067 - 25 SEPARATION STREET GINT.GPJ <<DrawingFile>> 28/2/2022 23:08 10.02.00.04 | Lib: FSG 1.01.0 2019-09-02 Prj: FSG 1.01.0 2019-09-02

compassenvironmental

Logged by : DR
Checked by : SH
Drilling contractor : Kingston
Drilling method : Excavator
Sampling method : Grab
Total depth : 3.0 m

Test pit number: TP1

Project number : 21135
Client : TIme & Place
Location : Northcote
Date : 11 March 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (100mm)
	TP1/0.3 TP110322A TP201/0.3	0.4			FILL: gravelly silt, brown, dry, loose, fine to coarse-grained gravels, red brick fragments and intact bricks, concrete, wood, no odour, no staining, no visible asbestos containing material
0.5	TP1/0.5	0.6			
1.0	TP1/1.0	0.3			
1.5					
2.0	TP1/2.0	0.6			increasing number of bricks at 2.0m
2.5					FILL: silty clay, high plasticity, dry, hard, red brick fragments, some bentonite, no odour, no staining
3.0	TP1/3.0	0.1			Testpit terminated at 3.0m BGL

compassenvironmental

Logged by	: DR
Checked by	: SH
Drilling contractor	: Kingston
Drilling method	: Excavator
Sampling method	: Grab
Total depth	: 3.2 m

Test pit number: TP2

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 11 March 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (100mm)
	TP2/0.3	0.2			FILL: gravelly silt, brown, dry, loose, fine to coarse-grained gravels, red brick fragments and intact bricks, concrete, no odour, no staining, no visible asbestos containing material
0.5	TP2/0.5	0.1			
1.0	TP2/1.0	0.6			
1.5					
2.0	TP2/2.0	0.4			
2.5					
3.0	TP2/3.0	0.1			
					Testpit terminated at 3.2m BGL

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-105927

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6eV			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm	N/A	N/A
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		95ppm Isobutylene		ME846		95ppm Isobutylene

Calibrated by: Hsien Rae Tang

Calibration date: 9/03/2022

Next calibration due: 5/09/2022

ATTACHMENT F

Landfill Gas Monitoring Forms, BoM Data and Calibration Forms

compassenvironmental

LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP08

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: ST
Client: Tire and Place		Project Location: Normcote	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: G505723	Calibrated (Y/N): Y	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.4	Balance%: 79.6	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1006		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	0.02	0.0	0.0	0.1	20.4	79.9	0	AP	AP	AP	AP	AP	Y		CO=0
30					0.0	0.1	20.3	79.6	0								CO=0
60					0.0	0.1	20.3	79.6	0								CO=0
90					0.0	0.1	20.3	79.6	0								CO=0
120					0.0	0.1	20.3	79.6	0								CO=0
150					0.0	0.1	20.3	79.6	0								CO=0
180					0.0	0.1	20.3	79.6	0								CO=0

compassenvironmental

LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP10

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Time and place			Project Location:	Northcote	Sampled by:	DA

Equipment:

Type of meter:	GA5000	Serial No.:	GA505723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	CO_2 (%): 0.2	O_2 (%): 20.2	Balance%: 79.5	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.00	0.0	0.0	0.3	19.9	79.8	0	—	—	AP	—	—	Y		CO=0
30					0.0	0.3	19.9	79.8	0			↓			↓		CO=0
60					0.0	0.3	19.9	79.8	0								CO=0
90					0.0	0.3	19.9	79.8	0								CO=0
120					0.0	0.3	19.9	79.8	0								CO=0
150					0.0	0.3	19.9	79.8	0								CO=0
180					0.0	0.3	19.9	79.8	0								CO=0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP11

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Time and Place			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	GA 505723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.2	O_2 (%): 20.2	Balance%: 79.7	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.05	6.0	0.0	6.2	20.2	79.7	0	—	—	AD	—	—	↓		CO = 0
30					0.0	0.1	20.2	79.7	0								CO = 0
60					0.0	0.1	20.2	79.7	0								CO = 0
90					0.0	0.1	20.2	79.7	0								CO = 0
120					0.0	0.1	20.2	79.7	0								CO = 0
150					0.0	0.1	20.2	79.7	0								CO = 0
180					0.0	0.1	20.2	79.7	0								CO = 0

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BORE ID: DP12

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client: Time and place		Project Location:	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: GA505723		Calibrated (Y/N): Y	Date of Calibration:	
Type of meter:	Serial No.:		Calibrated (Y/N):	Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.0	O_2 (%): 20.4	Balance%: 79.6	CH_4 (ppm): 0.0
	Atmospheric Pressure (mb): 1006		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):	clear	Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	0.02	0.00	0.0	0.1	20.4	79.8	0	AP	AP	AP	AP	AP	Y	—	CO=0
30					0.0	1.3	19.1	79.7	0								CO=0
60					0.0	1.3	19.0	79.7	0								CO=0
90					0.0	1.3	19.0	79.7	0								CO=0
120					0.0	1.3	19.0	79.7	0								CO=0
150					0.0	1.3	19.0	79.7	0								CO=0
180					0.0	1.3	19.0	79.7	0								CO=0
210					0.0	1.3	19.0	79.7	0								CO=0

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BORE ID: DP13

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: JH
Client: Time and Place		Project Location: Normanhurst	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: GA05723	Calibrated (Y/N): Y	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.2	Balance%: 79.7	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1004		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1004	0.0	0.0	0.0	0.1	20.2	79.7	0			AP					CO=0
30					0.0	2.0	17.6	80.5	0								CO=0
60					0.0	2.0	17.6	80.6	0								CO=0
90					0.0	2.0	17.2	80.8	0								CO=0
120					0.0	2.0	17.2	80.8	0								CO=0
150					0.0	2.0	17.2	80.8	0								CO=0
180					0.0	2.0	17.2	80.8	0								CO=0
									0								

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BORE ID: DP14

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Time and Place			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	G505723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.5	Balance%: 79.4	CH_4 (ppm): 0.
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.09	0.0	0.0	0.1	20.5	79.4	0	—	—	AD	—	—	↓	↑	CO=0
30					0.0	12.1	0.0	87.9	0								CO=0
60					0.0	12.0	0.0	88.0	0								CO=0
90					0.0	12.0	0.0	88.0	0								CO=0
120					0.0	12.0	0.0	88.0	0								CO=0
150					0.0	12.0	0.0	88.0	0								CO=0
180					0.0	12.0	0.0	88.0	0								CO=0

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BORE ID: DP15

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client: Time and Place		Project Location: Normcote	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: 4505723	Calibrated (Y/N): Y	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.0	O_2 (%): 20.5	Balance%: 79.4	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.12	0.0	0.0	0.0	20.5	79.4	0	—	—	AP	—		T		CO=0
30					13.8	5.8	4.5	79.2	0			↓					CO=1
60					13.9	5.8	0.0	80.3	0								CO=0
90					13.9	5.8	0.0	80.3	0								CO=0
120					13.9	5.8	0.0	80.3	0								CO=1
150					13.9	5.8	0.0	80.3	0								CO=1
180					13.9	5.8	0.0	80.3	0			↓			↓		CO=1

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP16

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client: Tine and Place		Project Location: Northcote	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: G505723	Calibrated (Y/N): Y	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.0	O_2 (%): 20.6	Balance%: 79.3	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	Q10	0.0	0.0	0.1	20.6	79.3	0	—	—	AP	—	—	Y		CO = 0
30					0.0	0.0	20.6	79.1	0								CO = 0
60					0.0	1.3	19.2	79.7	0								CO = 0
90					0.0	1.3	19.0	79.7	0								CO = 0
120					0.0	1.3	19.0	79.7	0								CO = 0
150					0.0	1.3	19.0	79.7	0								CO = 0
180					0.0	1.3	19.0	79.7	0								CO = 0

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BORE ID: DF17

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Fire and Place			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	GS057123	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):		CH_4 (%):	0.0	CO_2 (%):	0.2	O_2 (%):	20.4	Balance%:	79.4	CH_4 (ppm):	0
		Atmospheric Pressure (mb):	1006			Relative Pressure (mb):					

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	0.03	0.0	0.0	0.2	20.4	79.4	0			AP			Y		CO =0
30					0.0	0.2	20.2	79.6	0								CO =0
60					0.0	0.2	20.2	79.6	0								CO =0
90					0.0	0.2	20.2	79.6	0								CO =0
120					0.0	0.2	20.2	79.6	0								CO =0
150					0.0	0.2	20.2	79.6	0								CO =0
180					0.0	0.2	20.2	79.6	0								CO =0

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BORE ID: DP18

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 28.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client: Time and Place		Project Location: Northcote	Sampled by: DR

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	CO_2 (%):	O_2 (%):	Balance%:	CH_4 (ppm):
	Atmospheric Pressure (mb):		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
— Well decommissioned — Backfilled to TOP of casing —																	

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BORE ID: DP19

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client: Tire and Plate		Project Location: North Coast	Sampled by: DR

Equipment:

Type of meter: GA5000	Serial No.: GA505723	Calibrated (Y/N): Y	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.4	Balance%: 79.2	CH_4 (ppm): 0
	Atmospheric Pressure (mb): 1006		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	0.03	0.0	0.0	0.1	20.4	79.2	0	—		AP			Y		CO = 0
30					0.0	0.7	19.5	79.8	0								CO = 0
60					0.0	0.7	19.5	79.8	0								CO = 0
90					0.0	0.7	19.5	79.8	0								CO = 0
120					0.0	0.7	19.5	79.8	0								CO = 0
150					0.0	0.7	19.5	79.8	0								CO = 0
180					0.0	0.7	19.5	79.8	0								CO = 0

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BORE ID: FSG-BH1

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	ST
Client:	Time and Place			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	GA05723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	0.0	CO_2 (%):	0.0	O_2 (%):	20.3	Balance%:	79.7	CH_4 (ppm): 0
	Atmospheric Pressure (mb):	1006			Relative Pressure (mb):				

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	2.05	0.0	0.0	0.0	20.4	79.6	0	—	—	AP	—		Y		CO = 0
30					0.0	0.1	20.3	79.7	0								CO = 1
60					0.0	1.2	19.0	79.9	0								CO = 0
90					0.0	1.7	18.0	80.0	0								CO = 0
120					0.0	1.7	18.0	80.0	0								CO = 0
150					0.0	1.7	18.0	80.0	0								CO = 0
180					0.0	1.7	18.0	80.0	0								CO = 0

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BORE ID: FSG-BH3

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27.1.22	Start Time:	Project Number: 21175		Project Manager: SM	
Client: Time and Place		Project Location: Normoss		Sampled by: DR	

Equipment:

Type of meter: GA1000	Serial No.: GA505723	Calibrated (Y/N): Y		Date of Calibration:	
Type of meter:	Serial No.:	Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.6	Balance%: 79.1	CH_4 (ppm): 0.0	
	Atmospheric Pressure (mb): 1004		Relative Pressure (mb): 0.02			

Other observations:

Weather (recent / prevailing):	Clear	Bore Condition (sealed, headworks):	
Current Ground Condition:	wet.		

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0	—	1004	0.02	0.0	0.0	0.1	20.6	79.1	0	AP	AP	AP	AP	AP	Y		CO=0
30	=				0.0	0.2	20.3	79.5	0	↓	↓	↓	↓	↓	↓		CO=0
60	—				0.0	0.2	20.3	79.5	0								CO=0
90	=				0.0	0.2	20.3	79.5	0								CO=0
120	—				0.0	0.2	20.3	79.5	0								CO=0
150	=				0.0	0.2	20.3	79.5	0								CO=0
180	—				0.0	0.2	20.3	79.5	0								CO=0

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BORE ID: FSG – BH5

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date:	27.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Tire and Plane			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	GA05723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	0.0	CO_2 (%):	0.1	O_2 (%):	20.5	Balance%:	79.4	CH_4 (ppm):	0
	Atmospheric Pressure (mb):	1005			Relative Pressure (mb):					

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.02	0.0	0.0	0.1	20.5	79.4	0			AP			Y		CO=0
30					0.0	0.1	20.3	79.6	0								CO=0
60					0.0	0.1	20.2	79.7	0								CO=0
90					0.0	0.1	20.2	79.7	0								CO=0
120					0.0	0.1	20.2	79.7	0								CO=0
150					0.0	0.1	20.2	79.7	0								CO=0
180					0.0	0.1	20.2	79.7	0								CO=0

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BORE ID: FSG-BH9

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date:	28.1.22	Start Time:		Project Number:	21135	Project Manager:	SH
Client:	Time and Place			Project Location:	Northcote	Sampled by:	DR

Equipment:

Type of meter:	GA5000	Serial No.:	GA05723	Calibrated (Y/N):	Y	Date of Calibration:	
Type of meter:		Serial No.:		Calibrated (Y/N):		Date of Calibration:	

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	0.0	CO_2 (%):	0.1	O_2 (%):	20.5	Balance%:	79.4	CH_4 (ppm):	0
	Atmospheric Pressure (mb):	1003			Relative Pressure (mb):					

Other observations:

Weather (recent / prevailing):	clear	Bore Condition (sealed, headworks):	
Current Ground Condition:	wet		

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1003	0.02	0.0	0.0	0.1	20.5	79.4	0	—	—	AP	—	—	↓		CO=0
30					0.0	0.2	20.2	79.6	0								CO=0
60					0.0	0.2	20.0	79.7	0								CO=0
90					0.0	0.3	20.0	79.8	0								CO=0
120					0.0	0.3	19.9	79.8	0								CO=0
150					0.0	0.3	19.9	79.8	0								CO=0
180					0.0	0.3	19.9	79.8	0								CO=0

BORE ID: GB6A

LANDFILL GAS BORE MONITORING RECORD

Project details

Date	22.1.22	Start Time		Project Number	21135	Project Manager	SH
Client	Tweed Shire			Project Location	Mt. Nias	Sampled by	SH

Equipment

Type of meter	GA5000	Serial No	GA505723	Calibrated (Y/N)	Y	Date of Calibration	
Type of meter		Serial No.		Calibrated (Y/N)		Date of Calibration	

Background Reading (Away from Landfill Areas)

Location (description, easting and northing)		CH_4 (%)	0.0	CO_2 (%)	0.0	O_2 (%)	20.3	Balance%	79.6	CH_4 (ppm)	0
		Atmospheric Pressure (mb)	1006			Relative Pressure (mb)					

Other observations

Weather (recent + prevailing)		Bore Condition (sealed, headworks)	
Current Ground Condition			

Bore construction details

Casing/Screen dia. (mm)		Screened Interval (m)		Bentonite Seal (m)		Bore Annulus (mm)	
Casing Length (m)		Filter Pack Interval (m)		Bore Depth (m)		Bore Volume (L)	

Field measurements

Time	Volume Purged (L)	Atm. Press (mb)	Rel Press (+mb)	Flow Rate (L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1006	0.03	0.0	0.0	0.1	20.4	79.0	0	0	0	0	0	0	Y		CO=0
30					0.0	1.8	18.5	79.8	0								
60					0.0	1.8	18.5	79.9	0								
90					0.0	1.8	18.3	79.9	0								
120					0.0	1.8	18.3	79.9	0								
150					0.0	1.8	18.3	79.9	0								
180					0.0	1.8	18.5	79.9	0	0	0	0	0	0			

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UNDERGROUND UTILITY MONITORING RECOR

Project details:

Date: 27.1.22	Start Time:	Project Number: 21135	Project Manager: SH
Client:		Project Location: Northcote	Sampled by: DR

Equipment:

Type of gas meter:	Serial No.:	Calibrated (Y/N):	Type of gas meter:	Serial No.:	Calibrated (Y/N):
GA5000	GJ05723	Y			

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%):	CO_2 (%):	O_2 (%):	Balance %:	CH_4 (ppm):
	0.0	0.0	20.5	79.5	0
	Atmospheric Pressure (mb): 1006		Differential Pressure (mb):		

Other observations:

Weather (recent / prevailing):	Clear
Current Ground Condition:	Dry

Field measurements:

Time	Location ID	Service Type	Atm. Pressure (mb)	Peak Concentration						Stabilised Concentration						Stabilised ?	Comments (easting, northing, odour, air flow, observations, chemical storage)
				CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)		
	SP1/A		1006	0.0	0.0			0		AP	AP			AP		Y	
	I			0.0	0.0			0									
	SP2/A			0.0	0.0			0									
	I			0.0	0.1			0									
	SP3/A			0.0	0.1			0									
	I			0.0	0.0			0									
	SP4/A			0.0	0.2			0									
	I			0.0	0.1			0									
	SP5/A			0.0	0.0			0									
	I			0.0	0.0			0									
	SP6/A			0.0	0.0			0									
	I			0.0	0.1			0									
	SP7/A			0.0	0.1			0									
	I			0.0	0.1			0									
	SP8/A			0.0	0.1			0									
	I			0.0	0.2			0									

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Time	Location ID	Service Type	Atm. Pressure (mb)	Peak Concentration						Stabilised Concentration						Stabilised ?	Comments (easting, northing, odour, air flow, observations, chemical storage)
				CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)		
	SP9/A I			0.0	0.2			0		AP	AP			AP		Y	
	SP10/A I			0.0	0.2			0									
	SP10/A I			0.0	0.1			0									
	SP11/A I			0.0	0.1			0									
	SP11/A I			0.0	0.1			0									
	SP12/A I			0.0	0.0			0									
	SP12/A I			0.0	0.1			0									
	SP13/A I			0.0	0.0			0									
	SP13/A I			0.0	0.0			0									
	SP14/A I			0.0	0.1			0									
	SP14/A I			0.0	0.0			0									
	SP15/A I			0.0	0.1			0									
	SP15/A I			0.0	0.0			0									
	SP16/A I			0.0	0.0			0									
	SP16/A I			0.0	0.1			0									
	SP17/A I			0.0	0.2			0									
	SP17/A I			0.0	0.1			0									
	SP18/A I			0.0	0.1			0									
	SP18/A I			0.0	0.1			0									
	SP19/A I			0.0	0.2			0									
	SP19/A I			0.0	0.2			0									
	SP20/A I			0.0	0.1			0									
	SP20/A I			0.0	0.1			0									
	SP21/A I			0.0	0.1			0									
	SP21/A I			0.0	0.1			0									

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: GB6A

Project details.

Date: 2/3/22	Start Time:	Project Number: E1135	Project Manager: SH
Client: TLP		Project Location: Northland	Sampled by: T-C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.2	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	9.70 bgl depth
Current Ground Condition:			6.975 water

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1015	0.03	0.0	0.0	0.1	20.2	79.6	0						N/A		GW = 0
90		↓	↓	↓	0.0	1.8	18.2	79.8	0	App					Y		0
180		↓	↓	↓	0.0	1.8	18.4	79.8	0	↓	↓	↓	↓	↓	↓		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: BH08

Project details:

Date: 2/3/22	Start Time:	Project Number: 2135	Project Manager: JH
Client: TRF		Project Location: Nambour	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N): ~	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.2	O_2 (%): 20.4	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.0	0.0	0.0	0.2	20.4	79.6	0	ND					Y		CO=0
90		↓	↓	↓	0.0	0.1	20.3	79.6	0	↓	↓	↓	↓	↓	↓		0
180		↓	↓	↓	0.0	0.1	20.3	79.6	0	↓	↓	↓	↓	↓	↓		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP19

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: TEP		Project Location: Norlane	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.0	O_2 (%): 20.4	Balance%: 79.2	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	depth 1.79 bgl
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.0	0.0	0.0	0.1	20.5	79.2	0						N		0 = 0
90					0.0	0.6	19.6	79.8	0						Y		0
180					0.0	0.7	19.6	79.7	0						Y		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: BH1

Project details:

Date: 2/3/22	Start Time:	Project Number: 21173	Project Manager: BM
Client: TAP		Project Location: Northwood	Sampled by: T.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.1	CO_2 (%): 0.1	O_2 (%): 20.1	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.0^	0.0	0.0	0.0	20.5	79.5	0						N		OC = 0
90		↓	↓	↓	0.0	1.6	18.1	80.1	0	AP					Y		0
150		↓	↓	↓	0.0	1.7	18.1	80.1	0	1	1	1	1	1	Y		0

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BORE ID: DP13

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 27/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: TAP		Project Location: Narrow	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.3	Balance%: 79.2	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.0	0.0	0.0	0.2	20.3	79.5	0	~	~	~	~	~	N		Q = 0
90		↓	↓	↓	0.0	2.1	17.7	80.4	0	AP	~	~	~	~	Y		0
180		↓	↓	↓	0.0	2.0	17.7	80.4	0	1	1	1	1	-	1		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DP11

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: T&P		Project Location: Northcote	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.3	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	0.870 bgl depth
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.02	0.3	0.0	0.1	20.1	79.6	0	AP	~	~	~		Y		CO2 0
90		↓	↓	↓	0.0	0.1	20.1	79.6	0	↓	↓	↓	↓	↓	↓		0
180					0.0	0.1	20.1	79.6	0	↓	↓	↓	↓	↓	↓		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DH10

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: TRP		Project Location: Northwood	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.0	O_2 (%): 20.4	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1004		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	0.29 depth BGL
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1004	0.0	0.0	0.0	0.2	19.6	79.9	0	App					Y		CO=0
90		1	1	1	0.0	0.3	19.9	79.8	0	1	1	1	1	1	1		0
180		1	1	1	0.0	0.3	19.9	79.8	0	1	1	1	1	1	1		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: ~~BH19~~ DP14

Project details:

Date: 27/12	Start Time:	Project Number: 21135	Project Manager: CH
Client: T&P		Project Location: Northfe	Sampled by: J.L.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.2	O_2 (%): 20.3	Balance%: 79.4	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	1.030 depth
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.09	0.0	0.0	0.1	20.6	79.6	0						N		CO = 0
90		↓	↓	↓	0.0	11.9	0.0	87.5	0						Y		0
180		↓	↓	↓	0.0	12.0	0.1	87.5	0						Y		0

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BORE ID: DP16

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: CH
Client: TRP		Project Location: Northcote	Sampled by: J. C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.6	Balance%: 79.4	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.0	0.0	0.0	0.1	20.7	79.2	0						N/A		ΔW = 0
90		"	"	"	0.0	0.9	19.1	79.9	0	AP					Y		0
180		"	"	"	0.0	1.2	19.0	79.9	0	1	1	1	1	1	Y		0

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BORE ID: DP17

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: CM
Client: T+P		Project Location: Normanhoe	Sampled by: J. L

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.4	Balance%: 79.5	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	2.480 BGL Depth.
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.02	0.0	0.0	0.2	20.4	79.5	0	AP	~	~	~	~	Y		CO: 0
90		1	1	1	0.0	0.2	20.4	79.5	0	1	1	1	1	1	1		0
180		1	1	1	0.0	0.2	20.3	79.6	0								0

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BORE ID: FSaBH5

LANDFILL GAS BORE MONITORING RECORD

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: T&P		Project Location: Norwood	Sampled by: T.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.4	Balance%: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.01	0.0	0.0	0.1	20.5	79.6	0	NP	~	~	~	~	y		CO = 0
90		〃	〃	〃	0.0	0.2	20.3	79.5	0	〃	〃	〃	〃	〃	〃		0
180		〃	〃	〃	0.0	0.1	20.5	79.5	0	〃	〃	〃	〃	〃	〃		0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: FSC BH9

Project details:

Date: 2/3/21	Start Time:	Project Number: 2135	Project Manager: SH
Client: TBP		Project Location: Northcote	Sampled by: J.C

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.4	Balance%: 79.4	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.01	0.0	0.0	0.1	20.6	79.5	0						Y		CO ~ 0
90		"	"	"	0.0	0.1	20.1	79.8	0	"	"	"	"	"	"		0
180		"	"	"	0.0	0.2	20.1	79.5	0	"	"	"	"	"	"		0
					bk												

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: DH

Project details:

Date: 2/3/22	Start Time:	Project Number: 2135	Project Manager: SH
Client:		Project Location: Northcote	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.5	Balance%: 79.7	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	6.73m bgl depth
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.01	0.0	6.0	0.1	20.4	79.8	0	AP				0	Y		Grey
90		↓	↓	↓	0.0	1.2	19.0	79.8	0	↓	↓	↓	↓	↓	↓		0
180		↓	↓	↓	0.0	1.3	19.0	79.8	0	↓	↓	↓	↓	↓	↓		0
																	0

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: FSGBH3

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: T&P		Project Location:	Sampled by: J.C.

Equipment:

Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 20.6	Balance%: 79.1	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):		Bore Condition (sealed, headworks):	
Current Ground Condition:			

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements:

Time	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1005	0.61	0.0	0.0	0.1	20.6	79.1	0	AP					V		CO = 0
90		↓	↓	↓	0.0	0.1	20.4	79.5	0	↓	↓	↓	↓	↓	↓		↓
180		↓	↓	↓	0.0	0.2	20.4	79.4	0	↓	↓	↓	↓	↓	↓		↓

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LANDFILL GAS BORE MONITORING RECORD

BORE ID: ~~BP~~ DP15

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: TGP		Project Location: Newhaven	Sampled by: J.C.

Equipment:

Type of meter: GA5000	Serial No.: G505723	Calibrated (Y/N): y	Date of Calibration: attached
Type of meter:	Serial No.:	Calibrated (Y/N):	Date of Calibration:

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.0	CO_2 (%): 0.1	O_2 (%): 21.0	Balance%: 78.9	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Relative Pressure (mb):		

Other observations:

Weather (recent / prevailing):	0.C.	Bore Condition (sealed, headworks):	2.590 Bal Depth
Current Ground Condition:			dry

Bore construction details:

Casing/Screen dia. (mm):		Screened Interval (m):		Bentonite Seal (m):		Bore Annulus (mm):			
Casing Length (m):		Filter Pack Interval (m):		Bore Depth (m):		Bore Volume (L):			

Field measurements: in beginning CH4 spiked to ~ 12.8 rapidly then decreased ~~upon~~

Time (mins)	Volume Purged (L)	Atm. Press. (mb)	Rel. Press. (±mb)	Flow Rate (±L/hr)	Peak Concentration					Stabilised Concentration					Stabilised?	Direction of Fluctuation	Comments (air flow/pump rate, observations, rate of change, PID reading)
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	H_2S (ppm)			
0		1015	-0.15	0.0	0.0	0.1	20.9	79.0	0						N		CO = 0
1					5.0	2.6	11.9	80.7	0						N		0
2					2.8	1.5	15.6	80.1	0						N		1
3					1.7	1.0	17.5	79.8	0						N		0
4					1.1	0.7	18.7	79.6	0						N		1
5					0.8	0.5	19.2	79.5	0	AP					y		1
6					0.6	0.4	19.7	79.4	0								0
7					0.5	0.3	19.9	79.3	0								0
8					0.4	0.2	20.1	79.3	0								0
9					0.3	0.2	20.2	79.2	0								0
10					0.3	0.2	20.3	79.2	0								0

Stable @ 5 mins (slow variance of ~ ±0.1%)

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UNDERGROUND UTILITY MONITORING RECOR

Project details:

Date: 2/3/22	Start Time:	Project Number: 21135	Project Manager: SH
Client: TSP		Project Location: Northgate	Sampled by: JC,

Equipment:

Type of gas meter:	Serial No.:	Calibrated (Y/N):	Type of gas meter:	Serial No.:	Calibrated (Y/N):

Background Reading (Away from Landfill Areas):

Location (description, easting and northing):	CH_4 (%): 0.2	CO_2 (%): 0.1	O_2 (%): 20.7	Balance %: 79.6	CH_4 (ppm):
	Atmospheric Pressure (mb): 1005		Differential Pressure (mb):		

Other observations:

Weather (recent / prevailing):
Current Ground Condition:

Field measurements:

Time	Location ID	Service Type	Atm. Pressure (mb)	Peak Concentration						Stabilised Concentration						Stabilised ?	Comments (easting, northing, odour, air flow, observations, chemical storage)
				CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)		
	SP1 1		1005	0.0	0.0			0		AP	AP			AP		Y	
	A			0.2	0.1												
	SP2 1			0.0	0.0												
	A			0.0	0.0												
	SP3 1			0.0	0.1												
	A			0.0	0.1												
	SP4 1			0.0	0.1												
	A			0.0	0.0												
	SP5 1			0.0	0.0												
	A			0.0	0.1												
	SP6 1			0.0	0.1												
	A			0.0	0.1												
	SP7 1			0.0	0.0												
	A			0.0	0.0												
	SP8 1			0.0	0.0												
	A			0.0	0.1												

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Time	Location ID	Service Type	Atm. Pressure (mb)	Peak Concentration						Stabilised Concentration						Stabilised ?	Comments (easting, northing, odour, air flow, observations, chemical storage)
				CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal. %	CH_4 (ppm)	H_2S (ppm)		
	SP9 A		1005	0.0	0.1			0		AP	AP			AP		Y	
	1			0.0	0.1												
	SP10 A			0.0	0.2												
	1			0.0	0.1												
	11 A			0.0	0.1												
	1			0.0	0.1												
	12 A			0.0	0.2												
	1			0.0	0.1												
	13 A			0.0	0.0												
	1			0.0	0.0												
	14 A			0.0	0.1												
	1			0.0	0.2												
	15 A			0.0	0.1												
	1			0.0	0.0												
	16 A			0.0	0.0												
	1			0.0	0.0												
	17 A			0.0	0.2												
	1			0.0	0.2												
	18 A			0.0	0.1												
	1			0.0	0.2												
	19 A			0.0	0.0												
	1			0.0	0.1												
	20 A			0.0	0.2												
	1			0.0	0.1												
	21 A			0.0	0.0												
	1			0.0	0.0												

Gas Calibration Certificate

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument GA5000
Serial No. G505723
Sensors CH4, CO2, O2, CO, H2S

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2	✓	
	CH4	✓	
	CO2	✓	
	H2S	✓	
	CO	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.90%		Fresh Air	
H2S		25ppm H2S	NIST	ME727	25ppm H2S
CO		100ppm CO	NIST	ME727	100ppm CO
CH4		60% CH4	NIST	ME786	60% CH4
CO2		40% CO2	NIST	ME786	40% CO2

Calibrated By: **Hsien Rae Tang**

Calibration date: **24/02/2022**

Next calibration due: **23/08/2022**

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HELIUM LEAK TESTING RECORD

PROBE ID: DP10

Project details:

Date:	28.1.22	Client	Time and Place	Project number:	21135
Time:	12:45	Project location:	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	4L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	
Unit number:	414298
Battery check:	//
Pump check:	//
Filters check:	/
Unit clean and sound condition:	

Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient: 25	In Bore:	0

Helium Canister Details:

Pressure and Time	Start: 12:45	Finish:	12:50
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1L/min		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm) Ambient	He (ppm) Shroud	He (ppm) Bore	Comments
1 min	1	1	100	12.6%	50	
2 min	2	↓	125	12.7%	125	
3 min	3	↓	50	12.4%	75	
4 min	4	↓	100	12.6%	100	Pass
Approximate Total Amount of Helium Introduced:			4L			

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	DR
Signature:	

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HELIUM LEAK TESTING RECORD

PROBE ID: DP11

Project details:

Date:	28.1.22	Client	Time and Place	Project number:	2135
Time:	12:00	Project location:	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	8L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	GMD		
Unit number:	414298		
Battery check:	/		
Pump check:	/		
Filters check:	/		
Unit clean and sound condition:	/		
Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient:	0	In Bore: 0

Helium Canister Details:

Pressure and Time	Start: 12:00	Finish:	12:08
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1L/MIN		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
2 MIN	2	1	350	12.8%	975	
4 MIN	4	↓	275	12.8%	1075	
6 MIN	6		200	12.8%	1050	
8 MIN	8		250	12.8%	950	
						PASS
Approximate Total Amount of Helium Introduced:			8L			

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	DR
Signature:	

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HELIUM LEAK TESTING RECORD

PROBE ID: DP14

Project details:

Date:	28.1.22	Client	Time and place	Project number:	21135
Time:	11:00	Project location:	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	12L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	GMD		
Unit number:	414298		
Battery check:			
Pump check:			
Filters check:			
Unit clean and sound condition:			
Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient:	0	In Bore: 0

Helium Canister Details:

Pressure and Time	Start: 11:00	Finish: 11:12
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA	
Approximate Rate of Introduction:	1L/min	

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
4min	4	1	0	12.6%	350	
8min	8	↓	0	12.7%	500	
—	pump		fail	—	—	—
Approximate Total Amount of Helium Introduced:						

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	DR
Signature:	

compassenvironmental

HELIUM LEAK TESTING RECORD

PROBE ID: DP15

Project details:

Date: 28.1.22	Client Time and Place	Project number: 21135	
Time: 10:00	Project location: Northcote	Project manager: SH	

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	17L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	GMD
Unit number:	414 298
Battery check:	/
Pump check:	/
Filters check:	/
Unit clean and sound condition:	

Calibrated (Y/N)		Date of Calibration:	

Background Readings:

He (ppm)	Ambient: 0	In Bore: 0	

Helium Canister Details:

Pressure and Time	Start: 10:00	Finish: 10:17	
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1L/min		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
5min	5	1	0	12.8%	700	
10min	10		0	12.8%	675	
15min	15		75	12.6%	700	
17min	17	↓	300	12.6%	650	
						pass
Approximate Total Amount of Helium Introduced:			17L			

Weather:

Prevailing weather conditions:	Clear

Calibration by:

Name:	DR
Signature:	

compassenvironmental

HELIUM LEAK TESTING RECORD

PROBE ID: DP17

Project details:

Date:	28.1.22	Client	Time and Place	Project number:	21135
Time:	9:00	Project location:	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	15L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	MGD		
Unit number:	414298		
Battery check:	/		
Pump check:	/		
Filters check:	/		
Unit clean and sound condition:	/		
Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient: 0	In Bore:	0

Helium Canister Details:

Pressure and Time	Start: 9:00	Finish:	9:15
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1L/min		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
3Min	3	1	0	12.4%	0	
6Min	6	↓	0	11.8%	350	
9Min	9		75	12.1%	475	
12Min	12		0	12.6%	300	
15Min	15		50	12.6%	75	Pass
Approximate Total Amount of Helium Introduced:			15L			

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	DR
Signature:	

compassenvironmental

HELIUM LEAK TESTING RECORD

PROBE ID: DP19

Project details:

Date:	28.1.22	Client	Time and Place	Project number:	21135
Time:	13:00	Project location	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	13L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	GMD		
Unit number:	414298		
Battery check:	✓		
Pump check:	✓		
Filters check:	//		
Unit clean and sound condition:			
Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient: 0	In Bore:	0

Helium Canister Details:

Pressure and Time	Start: 13:00	Finish:	13:15
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1L/Min		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
5 Min	5	1	0	12.7%	0	
10 Min	10	↓	0	13.1%	0	
13 Min	13	↓	300	13.2%	25	
						pass
Approximate Total Amount of Helium Introduced:			13L			

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	JR
Signature:	

compassenvironmental

HELIUM LEAK TESTING RECORD

PROBE ID: Unknown gas Bore near DP12

Project details:

Date:	28.1.22	Client	Time and Place	Project number:	21135
Time:	13:50	Project location:	Northcote	Project manager:	SH

Bore construction details:

Casing/ Tubing/ Screen dia. (mm):		Bentonite Seal (m):	
Casing Length (m):		Bore Depth (m):	
Screened Interval (m):		Bore Volume (L):	
Filter Pack Interval (m):		System Volume (L):	10L
Type (ie. Soil Gas Bore, Vapour Implant)			
General Observations (ie. grass, asphalt, monument, flush gatic):	flush gatic		

Gas monitor details:

Unit make:	GMD		
Unit number:	414298		
Battery check:	/		
Pump check:	/		
Filters check:	/		
Unit clean and sound condition:	/		
Calibrated (Y/N)	Y	Date of Calibration:	

Background Readings:

He (ppm)	Ambient: 0	In Bore:	0

Helium Canister Details:

Pressure and Time	Start: 13:50	Finish:	14:00
Flow Controller Details:	GASCON SYSTEMS HELIUM REGULATOR 200 KPA		
Approximate Rate of Introduction:	1 L/Min		

Connection and Seal Guarantee Details:

Type (ie. quick-connect, brass tap, teflon tubing, silastic tubing):	QC

Field Measurements:

Time	Volume Purged (L)	Volume purge Rate (L/min)	He (ppm)			Comments
			Ambient	Shroud	Bore	
3 Min	3	1	0	13.2%	0	
7 Min	7	↓	0	13.1%	25	
10 Min	10	↓	0	17.1%	25	
						Pass
Approximate Total Amount of Helium Introduced:			10L			

Weather:

Prevailing weather conditions:	clear

Calibration by:

Name:	DR
Signature:	

SPX DIELECTRIC

MULTIGAS DETECTOR ATP-735 rev E

Certificate of Calibration

Name:_____
Company:_____
Customer No.:_____
Phone No.:_____

MGD P/N: 83219 Date: July 2, 2021

SN#: 414298 Software Rev. 1.13

New: X Repair:____

Work order#: 22116 SRA#:_____

Calibration conditions		Acceptable Range
Temperature	75	68-80 F
Humidity	52	<85%
Pump Vol.	1.10 L/min	.90 -1.20 l/min
Calibration point	**X = Complete**	
0%	X	Set point
2%	X	Set point
50%	X	Set point
100%	X	Set point
25 ppm (final check)	X	25 – 75 ppm
Attachment functionality	X	
Other	—	

Note: All test equipment used in manufacturing and repair is calibrated and traceable. Unless otherwise noted, the accuracy ratios are equal to or greater than 4:1.
Calibration Procedure used: MGD-2002 Helium Detector Calibration Procedure.

The 2% through 100% tests are performed with pre mixed (grade 5) helium with the remainder being nitrogen. Using a direct Siphon test method.

The 25ppm is performed as a final check as helium permeates a latex membrane.

The unit's upper reading limit is set at 100% a brief display of +100% is acceptable for a short duration (<10 sec) allowing for sensor stabilization.

Calibration performed by: Dave

RADIODETECTION
28 TOWER ROAD
RAYMOND, MAINE 04071
USA

TEL
TOLL FREE
FAX

rd.sales.us@spx.com

Melbourne (Olympic Park), Victoria
January 2022 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Sa	20.5	37.1	0			NNW	33	08:08	29.9	27		N	19	1007.9	25.0	51		SSW	13	1006.3
2	Su	20.9	30.9	0			SSW	43	15:44	24.3	47		S	4	1007.1	24.3	55		SSW	20	1007.9
3	Mo	16.8	20.3	0			S	41	12:30	18.8	57		SSE	11	1013.6	19.7	53		SSW	19	1013.2
4	Tu	16.2	23.1	0			SSE	43	20:06	18.5	73		S	9	1013.2	20.8	73		SW	9	1012.1
5	We	18.5	29.3	0			NE	37	14:22	22.9	71		SE	7	1009.6	28.1	51		E	13	1007.6
6	Th	18.3	30.2	0			NNW	39	13:53	22.9	62		NNE	6	1010.2	23.1	73		WNW	11	1007.6
7	Fr	20.1	25.8	1.4			WSW	28	12:30	23.6	59		NNE	11	1008.1	23.5	83		W	4	1007.1
8	Sa	17.1	19.7	24.8			SSW	28	13:14	17.3	98		S	11	1013.0	18.8	79		S	13	1014.0
9	Su	16.1	21.9	0			SSW	30	16:34	16.8	69		SE	6	1016.2	20.3	61		SSW	13	1015.6
10	Mo	15.5	31.4	0.2			SSW	31	12:46	18.6	76		NE	9	1017.9	28.3	57		SSW	9	1016.2
11	Tu	18.5	29.7	0			SSW	35	14:06	21.4	69		S	6	1020.7	24.8	64		S	13	1019.6
12	We	18.6	30.4	0			SSE	35	15:40	22.4	65		ESE	13	1021.5	29.2	45		SE	13	1017.7
13	Th	17.6	34.6	0			N	35	17:46	23.0	59		NNE	6	1016.3	33.1	28		NE	9	1009.9
14	Fr	20.8	32.8	0			NNE	35	14:08	23.7	78			Calm	1005.6	30.4	44		NNW	20	1001.7
15	Sa	18.8	24.2	6.0			SSW	30	17:08	19.7	70		WSW	9	1004.4	23.3	66		SSW	11	1005.6
16	Su	18.3	31.9	0			S	24	14:10	20.1	60		SE	4	1009.4	25.3	55		SSW	13	1006.6
17	Mo	18.4	24.2	0			S	33	16:19	18.7	72		W	7	1010.7	22.9	51		SSW	13	1010.8
18	Tu	17.1	21.3	0			SSW	39	14:20	18.3	58		SSE	9	1016.5	20.3	53		S	17	1016.7
19	We	15.4	26.7	0			SE	52	16:10	21.1	59		SE	11	1021.1	25.4	43		SE	24	1021.3
20	Th	12.9	30.4	0			ESE	31	23:26	18.8	57		NNE	4	1027.7	27.1	39		SSW	9	1024.9
21	Fr	17.1	29.6	0			NNW	33	06:39	22.6	43		N	11	1028.1	28.3	42		SSW	11	1023.9
22	Sa	17.7	32.3	0			SSE	35	17:57	24.3	45		N	13	1023.2	30.7	35		SW	13	1018.2
23	Su	18.1	32.6	0			S	26	14:08	25.0	49		N	9	1016.6	31.6	31		S	13	1012.5
24	Mo	20.2	33.7	0			SE	31	17:40	25.3	52		NNE	9	1011.4	32.3	36		SSW	9	1007.3
25	Tu	20.1	31.4	0			S	30	13:05	25.2	58		N	2	1009.0	27.4	60		SSW	15	1007.2
26	We	19.6	36.0	0			NW	46	19:32	24.0	67			Calm	1010.0	35.2	35		WSW	6	1006.1
27	Th	21.2	32.8	7.0			NNW	52	15:24	21.8	93		N	17	1009.5	30.9	47		N	22	1006.4
28	Fr	21.7	32.8	1.6			S	43	13:04	27.9	59		N	15	1008.8	21.1	100		S	17	1010.7
29	Sa	17.5	21.8	38.6			S	30	14:12	18.8	96		SSE	7	1017.5	21.0	70		S	17	1017.0
30	Su	18.7	29.2	0			SE	30	17:26	21.3	76		N	4	1015.4	25.8	64		S	13	1012.3
31	Mo	20.1		0						22.7	78		SSE	6	1009.2	31.4	54		WNW	6	1003.8
Statistics for the first 31 days of January 2022																					
	Mean	18.3	28.9							21.9	64			8	1013.9	26.1	54			13	1011.9
	Lowest	12.9	19.7							16.8	27			Calm	1004.4	18.8	28		W	4	1001.7
	Highest	21.7	37.1	38.6			#	52		29.9	98		N	19	1028.1	35.2	100		SE	24	1024.9
	Total			79.6																	

Observations were drawn from Melbourne (Olympic Park) {station 086338}

IDCJDW3033.202201 Prepared at 05:37 UTC on 31 Jan 2022
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Melbourne (Olympic Park), Victoria
March 2022 Daily Weather Observations

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Tu	19.8	25.8	0			N	20	21:58	21.1	87		SSE	4	1012.1	23.8	76		W	2	1011.1
2	We	19.7	29.6	6.0			SSE	22	16:38	21.0	87		NNE	6	1013.4	27.6	49		S	4	1011.4
3	Th	17.5	30.5	0			SW	24	16:26	21.3	79			Calm	1014.0	28.3	46		SSW	9	1012.3
4	Fr	18.3	32.5	0			NNW	28	10:02	21.6	72		NNE	7	1011.8	32.1	37		NNW	13	1008.6
5	Sa	17.3	22.2	37.8			SSW	37	15:06	17.5	94			Calm	1006.9	21.1	77		SSE	13	1007.5
6	Su	16.6	21.8	4.8			ESE	46	14:14	17.4	80		S	15	1016.0	20.4	67		SE	20	1016.4
7	Mo	15.9	23.1	0			SSE	37	01:10	18.4	72		ESE	6	1015.6	22.2	64		SW	13	1013.0
8	Tu	15.4	20.7	2.0			SSE	39	11:18	17.4	70		SSE	17	1018.4	18.9	69		S	17	1017.8
9	We	14.6	22.0	0			S	43	16:00	16.5	64		SE	17	1021.1	20.9	45		S	20	1019.6
10	Th	11.8	20.4	0			S	37	14:20	16.2	69		SSE	9	1021.9	19.9	56		SSW	15	1020.6
11	Fr	12.0	20.3	0			SSW	31	16:37	16.0	72		NE	6	1021.2	19.9	52		SSW	11	1020.0
12	Sa	11.7	22.6	0			S	28	14:49	14.2	77			Calm	1022.7	20.8	57		S	13	1021.0
13	Su	14.0	29.8	0			NNW	43	11:48	16.5	79		NNE	7	1020.9	28.7	40		NNW	17	1018.3
14	Mo	16.4	28.0	0.4			SSE	31	15:58	18.3	99			Calm	1021.2	25.6	64		SW	9	1018.7
15	Tu	18.3	27.5	2.0			NNW	31	10:16	20.3	78		NNE	7	1019.8	24.8	57		SSW	13	1018.2
16	We	18.9	23.2	0			NNE	41	10:29	19.9	78		N	9	1018.8	22.2	58		N	19	1016.4
17	Th	17.7	29.2	0			N	33	09:28	20.9	67		NNE	6	1015.2	27.8	53		NNW	11	1013.0
18	Fr	19.1	21.7	0			S	31	13:14	19.8	76		SSW	7	1020.7	20.8	67		SSW	13	1020.7
19	Sa	13.5	30.3	0			NNW	30	14:11	16.0	80		NNE	4	1020.0	29.3	41		NNE	13	1016.1
20	Su	15.7	25.0	0			S	35	14:49	18.5	84		S	2	1017.3	23.2	69		SSW	11	1016.0
21	Mo	17.7	28.3	0			SSW	33	17:33	19.1	79		NNE	7	1015.4	27.4	50		SSW	7	1012.5
22	Tu	18.2	22.2	0			S	28	11:18	18.9	78			Calm	1010.4	18.9	76		S	9	1009.2
23	We	13.6	19.5	1.2			S	30	13:35	15.4	65		WSW	7	1014.7	18.2	60		SSW	11	1015.4
24	Th	14.4	20.3	0			S	39	09:42	14.9	67		SW	4	1017.8	19.8	46		SSW	13	1016.8
25	Fr	14.0	20.4	0			SSW	28	14:19	16.3	71		SSE	7	1022.1	19.7	60		SSW	13	1021.6
26	Sa	11.1	22.3	0			SSW	24	13:51	12.4	89		NE	6	1023.3	20.8	64		SSW	11	1020.2
27	Su	12.4	29.1	0			N	30	09:52	16.4	76		NNE	9	1019.2	28.6	29		NNE	9	1015.4
28	Mo	16.3	24.4	0			S	31	15:00	18.8	59		NNE	11	1014.4	22.0	66		SSW	15	1014.6
29	Tu	15.6	20.0	0			S	28	15:44	17.7	77		SE	7	1016.9	19.5	67		SSW	13	1014.9
30	We	15.9	20.4	0			S	39	19:17	16.1	59		SSE	9	1016.8	19.6	60		SSW	19	1016.5
31	Th	13.5	21.7	0			SSE	44	07:47	15.6	79		SE	13	1023.0	20.6	49		SE	17	1023.9
Statistics for March 2022																					
	Mean	15.7	24.3							17.8	76			6	1017.5	23.0	57			12	1016.1
	Lowest	11.1	19.5							12.4	59			Calm	1006.9	18.2	29		W	2	1007.5
	Highest	19.8	32.5	37.8			ESE	46		21.6	99		#	17	1023.3	32.1	77		#	20	1023.9
	Total			54.2																	

Observations were drawn from Melbourne (Olympic Park) {station 086338}

IDCJDW3033.202203 Prepared at 13:01 UTC on 7 Apr 2022
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Table 1 - Subsurface Landfill Gas Bore Monitoring Northcote

Bore ID	Date Tested	Flow (L/h)	Atmospheric Pressure (mb)	Relative Pressure (mb)	Peak Concentrations				Stabilised Concentrations				Stabilised?	Comment
					CH_4 (%)	CO_2 (%)	O_2 (%)	Bal.(N) %	CH_4 (%)	CO_2 (%)	O_2 (%)	Bal.(N) %		
EPA BPEM Action Levels					**1.0% vol.**	**1.5% vol.**	**-**	**-**	**1.0% vol.**	**1.5% vol.**	**-**	**-**	**-**	**-**
Perimeter Boreholes														
DP08	27/01/2022	0.0	1006	0.00	0.0	0.1	20.3	79.6	0.0	0.1	20.3	79.6	Yes	CO = 0 H2S = 0
DP08	2/03/2022	0.0	1005	0.00	0.0	0.1	20.4	79.6	0.0	0.1	20.3	79.6	Yes	CO = 0 H2S = 0
DP10	27/01/2022	0.0	1005	0.00	0.0	0.3	19.9	79.8	0.0	0.3	19.9	79.8	Yes	CO = 0 H2S = 0
DP10	2/03/2022	0.0	1004	0.10	0.0	0.3	19.9	79.8	0.0	0.3	19.9	79.8	Yes	CO = 0 H2S = 0
DP11	27/01/2022	0.0	1005	0.00	0.0	0.1	20.2	79.7	0.0	0.1	20.2	79.7	Yes	CO = 0 H2S = 0
DP11	2/03/2022	0.0	1005	0.02	0.0	0.1	20.1	79.6	0.0	0.1	20.1	79.6	Yes	CO = 0 H2S = 0
DP12	27/01/2022	0.0	1006	0.02	0.0	1.3	20.4	79.7	0.0	1.3	19.0	79.7	Yes	CO = 0 H2S = 0
DP12	2/03/2022	0.0	1005	0.01	0.0	1.3	20.1	79.8	0.0	1.3	19.0	79.8	Yes	CO = 0 H2S = 0
DP13	27/01/2022	0.0	1004	0.00	0.0	**2.0**	20.2	80.8	0.0	**2.0**	17.2	80.8	Yes	CO = 0 H2S = 0
DP13	2/03/2022	0.0	1005	0.00	0.0	**2.1**	20.3	80.4	0.0	**2.0**	17.7	80.4	Yes	CO = 0 H2S = 0
DP14	27/01/2022	0.0	1005	0.09	0.0	**12.0**	20.5	88.0	0.0	**12.0**	0.0	88.0	Yes	CO = 0 H2S = 0
DP14	2/03/2022	0.0	1005	0.09	0.0	**12.0**	20.6	87.5	0.0	**12.0**	0.1	87.5	Yes	CO = 0 H2S = 0
DP15	27/01/2022	0.0	1005	0.12	**13.9**	**5.8**	20.5	80.3	**13.9**	**5.8**	0.0	80.3	Yes	CO = 1 H2S = 0
DP15	2/03/2022	0.0	1005	-0.15	**5.0**	**2.6**	20.3	80.7	0.3	0.2	20.3	79.2	Yes	CO = 0 H2S = 0
DP16	27/01/2022	0.0	1005	0.10	0.0	1.3	20.6	79.7	0.0	1.3	19.0	79.7	Yes	CO = 0 H2S = 0
DP16	2/03/2022	0.0	1009	0.00	0.0	1.2	20.7	79.9	0.0	1.2	19.0	79.9	Yes	CO = 0 H2S = 0
DP17	27/01/2022	0.0	1006	0.03	0.0	0.2	20.2	79.6	0.0	0.2	20.2	79.6	Yes	CO = 0 H2S = 0
DP17	2/03/2022	0.0	1005	0.02	0.0	0.2	20.4	79.6	0.0	0.2	20.3	79.6	Yes	CO = 0 H2S = 0
DP18	27/01/2022	Monitoring well decomissioned												
DP19	27/01/2022	0.0	1006	0.03	0.0	0.7	20.4	79.8	0.0	0.7	19.5	79.8	Yes	CO = 0 H2S = 0
DP19	2/03/2022	0.0	1005	0.00	0.0	0.7	20.5	79.8	0.0	0.7	19.6	79.7	Yes	CO = 0 H2S = 0
FSG-BH1	27/01/2022	0.0	1006	0.05	0.0	**1.7**	20.4	80.0	0.0	**1.7**	18.0	80.0	Yes	CO = 0 H2S = 0
FSG-BH01	2/03/2022	0.0	1005	0.02	0.0	**1.7**	20.5	80.1	0.0	**1.7**	18.1	80.1	Yes	CO = 0 H2S = 0
FSG-BH3	27/01/2022	0.0	1004	0.02	0.0	0.2	20.6	79.5	0.0	0.2	20.3	79.5	Yes	CO = 0 H2S = 0
FSG-BH03	2/03/2022	0.0	1005	0.01	0.0	0.2	20.6	79.5	0.0	0.2	20.4	79.4	Yes	CO = 0 H2S = 0
FSG-BH5	27/01/2022	0.0	1005	0.01	0.0	0.1	20.5	79.7	0.0	0.1	20.2	79.7	Yes	CO = 0 H2S = 0
FSG-BH05	2/03/2022	0.0	1005	0.01	0.0	0.2	20.5	79.5	0.0	0.1	20.3	79.5	Yes	CO = 0 H2S = 0
FSG-BH9	28/01/2022	0.0	1003	0.02	0.0	0.3	20.5	79.8	0.0	0.3	19.9	79.8	Yes	CO = 0 H2S = 0
FSG-BH09	2/03/2022	0.0	1005	0.01	0.0	0.2	20.1	79.5	0.0	0.2	20.1	79.5	Yes	CO = 0 H2S = 0
GB6A	27/01/2022	0.0	1006	0.03	0.0	**1.8**	20.4	79.9	0.0	**1.8**	18.3	79.9	Yes	CO = 0 H2S = 0
GB6A	2/03/2022	0.0	1005	0.03	0.0	**1.8**	20.2	79.8	0.0	**1.8**	18.4	79.8	Yes	CO = 0 H2S = 0

ATTACHMENT G

Groundwater Monitoring Field Forms, Well Survey Data and Calibration Certificates

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WELL GAUGING RECORD

Project details:

Date: 20/12/21	Time:	Project number: 2113 5	Project manager: SH
Client: Time & Place	Project location: Normcote		Gauged by: J.C.

Measuring equipment:

Water level meter (type): IP	PID Unit Number: T 105 891

Well and gauging details:

Time	Well ID.	Installed well depth (m bgl)	Measured standpipe height (m agl)	Gauged well depth (m bTOC)	Depth to product (m bTOC)	Depth to water (m bTOC)	PID reading (ppm)	Comments
	FSGBH5	10.0	-	9.91	-	6.561	0.2	clear - N.O.N.S. NT.
	DP16	8.0	-	5.10	-	-	0.1	sludge
	DP13	8.0	-	5.825	-	-	0.0	sludge @ base
	FSGBH11	10.0	-	9.776	-	5.569	0.3	clear n.o.n.s.
	DP08	7.5	-	9.640	-	6.716	0.1	clear n.o.n.s.
	DP12	7.5	-	6.74	-	-	0.1	sludge -> brown clay
	FSGBH3	18.9	-	11.68	-	7.202	0.5	clear n.o.n.s. NT brown
	DP02B	13.5	-	11.59	-	5.468		broken PVC pipe -> brown, NT, n.o.n.s.
	FSGBH9							no access -> covered

lower ← elevation

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: FSG BH05

Project details:

Date: 20/12/21	Time:	Project number: 21135	Project manager: SH
Client: Time + place		Project location: Northcote	Sampled by: J.C.

Well construction details:

Well diameter (mm): 50mm	Well headworks: (Flush) / Monument	Installed well depth (m bgl): 9.91
Installed screen interval from 0.4 m to 10 m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): -	Screen interval (m bTOC)*: 4 - 10.0	Well depth (m bTOC): 9.91
Depth to product (m bTOC): -	DTW (m bTOC): 6.561.	DTW with pump (m bTOC): 6.448
Sampling/purging method: MP	Flow cell: (Yes) No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 7.1	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump:

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
	CPM2	0.5	20.0	7.36	3,541	74.6	4.50	6.520	LB/grey, n.o.ns.
	CPM2	1.0	20.0	7.36	3,560	75.2	4.07	6.740	
	CPM1	1.5	20.0	7.36	3539	79.3	4.11	6.785	
	80/20	2.0	20.0	7.34	3535	84.0	4.21	6.895	
	99/20	2.5	20.0	7.31	3542	88.0	3.99	6.910	
	99/20	3.0	20.0	7.35	3550	89.2	3.98		
			Start	sampling @ 21	20				

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSG-BH5	Prim																	18	ALS
TB201221	TB																	5	ALS
RIN201221	RIN																	16	ALS

Filtering water:

Filter used: (Yes) No	Filter type: 0.45µ	Analytes filtered: Metals, Cr	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph: —
Weather: Sunny.	
Flow rate: 99/20 mP	

* If there is evidence of change in ground elevation refer to project manager.

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on site @ 7:30
off site @ 8:30

GROUNDWATER QUALITY SAMPLING RECORD

WELL ID FSC BH09

Project details:

Date: 22/12/21 Time:		Project number: 21135	Project manager: SH
Client: Time & place		Project location:	Sampled by: J.C.

Well construction details:

Well diameter (mm): 50	Well headworks: (Flush) Monument	Installed well depth (m bgl): 6
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl):	Screen interval (m bTOC)*:	Well depth (m bTOC): 6.72
Depth to product (m bTOC):	DTW (m bTOC): 3.259	DTW with pump (m bTOC):
Sampling/purging method: MP	Flow cell: Yes No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 5.0	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump:

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
								4.358	LB
	4	4	19.4	8.05	1.408	55.9	1.64		HT, n.o.n.s.
		6	19.3	7.61	1490	47.9	4.02	5.576	
		8	19.2	7.70	1571	42.6	2.06	dry	✓
				left to recharge over night					
			resumed @	0PM2	on	23/12/21			
									HT
			19.0	7.30	1422	37.7	2.37		grey, n.o.n.s.

Samples collected: bail dry + Sample along way

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSCBH09	Prim																	19	ALS
TB231221	TB																	5	ALS
RIN231221	RinRIN																	19	ALS

Filtering water:

Filter used: (Yes) No	Filter type: 0.45µm	Analytes filtered: Metals, Cr6+	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph: —
Weather: & sunny	
Flow rate: low	

* If there is evidence of change in ground elevation refer to project manager.

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: FSG-BH3 Pump @ 8.3

Project details:

Date: 21-12-21	Time:	Project number: 21135	Project manager: SH
Client: Time & Place		Project location: Northcote	Sampled by:

Well construction details:

Well diameter (mm): 50	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from 12.9 m to 18.9 m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): —	Screen interval (m bTOC)*: as above 7.202	Well depth (m bTOC): 12.780
Depth to product (m bTOC): —	DTW (m bTOC): 7.225 / 7.512	DTW with pump (m bTOC): 6.928/7.417
Sampling/purging method: Micro Purge	Flow cell: (Yes) No	Pump on (time): 1332 / 1416
Water quality meter: YSI	Initial pump depth: 12.0 / 8.012	Pump off (time):
Water level meter: I.P.	Final pump depth: ~~8~~	Post sampling DTW with pump:

Attempted w/ pump @ 12m lower pump depth based on screen interval provided by FSG.

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
1424	CPM2	0.5	32.5	7.53	4.628	-149.2	----	7.781	tan, HT, NO, NS
1425	↓	1.0	32.5	7.46	4.551	-154.8	----	7.823	tan, HT, NO, NS
1433	80/20	1.5	32.5	7.47	4.509	-152.6	—	7.899	" ↓
		~~2.0~~							
		~~2.5~~		bailed dry @ 0250					
		~~3.0~~		due to excessive drawdown.					
				20L bailed. Allowed recharge overnight.					
				resumed @ 22/12/21 @ CPM2					
				7.38	6.656	-74.5	0.78		grey, HT, n.o.n.s.
		Stopped @			@				

Raised pump to 0.5m below standing water level & started @ 1446

Samples collected:

Sample number	Sample type	Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSG-BH3	prim																	18	ALS
FSG BH 221221	dup																	18	ALS
FSG-BH203	split																	17	EU
TB221221	TB																	5	ALS
RIN221221	RIN																	18	ALS

Filtering water:

yes 0.45µm Metals, Chromium HT brown

Other observations:

Integrity of well: good	Photograph: —
Weather: fine	
Flow rate: CPM2	

* If there is evidence of change in ground elevation refer to project manager.

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: DP12B

Project details:

Date: 22/12/21	Time:	Project number:	21135	Project manager:	SH
Client: Time + Place		Project location:	Normoke	Sampled by:	J.C.

Well construction details:

Well diameter (mm):	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl):	Screen interval (m bTOC)*:	Well depth (m bTOC):
Depth to product (m bTOC):	DTW (m bTOC): 5.590	DTW with pump (m bTOC):
Sampling/purging method: MP	Flow cell: (Yes) No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 8.2	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump:

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
	Bail	4	17.9	6.76	2294	117.6	1.26	5.865	LT, grey, n.o.n.s.
	|	8	16.1	6.55	3021	111.1	1.07	6.529	|
		12	15.2	6.53	3.087	104.9	1.01	6.611	
		16	12.1	6.63	3.095	98.6	1.34	7.133	
				allow recharge for 4 hours & resume					
		05	23.4	7.18	3549	34.1	2.73		

dry @ ~25L

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
DP12B	Primary																	15	ALS

Filtering water:

Filter used: (Yes) No	Filter type: 0.45µ	Analytes filtered: Met, C-6	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph: —
Weather: Sunny	
Flow rate: 4 bail → CPM2	

* If there is evidence of change in ground elevation refer to project manager.

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: DP08

Project details:

Date: 21.12.21	Time:	Project number: 21135	Project manager: SH
Client: Time & Place		Project location: Northcote	Sampled by: BJ

Well construction details:

Well diameter (mm): 50	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from 4.5 m to 7.5 m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): —	Screen interval (m bTOC)*: as above	Well depth (m bTOC): 9.640
Depth to product (m bTOC): —	DTW (m bTOC): 6.718	DTW with pump (m bTOC): 6.719
Sampling/purging method: Micropurge	Flow cell: Yes No	Pump on (time): 0918
Water quality meter: YSI	Initial pump depth: 7.218	Pump off (time): 0933
Water level meter: I.P.	Final pump depth: 11	Post sampling DTW with pump: 6.729

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
0921	CPM4	0.5	23.5	6.82	2.947	3.0	1.08	6.728	clear, NO, NS
0922	↓	1.0	23.5	6.78	2.947	-1.5	0.76	6.729	↓
0923		1.5	23.5	6.75	2.944	-3.3	0.60	6.728	
0924		2.0	23.5	6.75	2.942	-3.4	0.55	6.729	
0925		2.5	23.5	6.74	2.942	-3.3	0.53	6.728	
0926	↓	3.0	23.5	6.74	2.943	-3.2	0.52	6.728	↓
			Started @ CPM4 @ 0927						

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
DP08	Primary																	18	ALS
TB211221	Trip B																	5	ALS
RIN211221	Rinsate																	18	ALS

Filtering water:

Filter used: (Yes) No	Filter type: 0.45µm	Analytes filtered: metals, chromium	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: good	Photograph: —
Weather: fine	
Flow rate: CPM4	

* If there is evidence of change in ground elevation refer to project manager.

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: FSG-BH1

Project details:

Date: 21.12.21	Time:	Project number: 21135	Project manager: SH
Client: Time & Place		Project location: Northcote	Sampled by: BP

Well construction details:

Well diameter (mm): 50	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from 6 m to 10 m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): —	Screen interval (m bTOC)*: as above	Well depth (m bTOC): 9.776
Depth to product (m bTOC): —	DTW (m bTOC): 5.572	DTW with pump (m bTOC): 5.467
Sampling/purging method: MicroPurge	Flow cell: (Yes) No	Pump on (time): 1038
Water quality meter: YSI	Initial pump depth: 6.2m	Pump off (time): 1137
Water level meter: I.P.	Final pump depth: "	Post sampling DTW with pump: 5.894

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
1041	CPM14	0.5	23.0	7.72	1.548	5.7	3.45	5.720	tan, LT, NO, NS
1044	CPM1	1.0	23.4	7.58	1.564	4.8	3.03	5.748	
1047	|	1.5	23.3	7.35	1.586	8.2	2.90	5.798	
1054	|	2.0	23.7	7.28	1.596	1.5	2.45	5.860	
1059	|	2.5	23.6	7.27	1.601	-4.8	2.40	5.905	
1103	↓	3.0	23.6	7.25	1.606	-5.4	2.37	5.932	↓
		Started @ CPM1 @ 1104							

Samples collected: "HOLD" used to avoid excessive drawdown

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSG-BH1	Primary																	ALS	18

Filtering water:

Filter used: (Yes) No	Filter type: 0.45 µm	Analytes filtered: metals, chromium	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: good	Photograph: —
Weather: fine	
Flow rate: CPM1 / "HOLD" to avoid excessive drawdown	

* If there is evidence of change in ground elevation refer to project manager.

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GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: FSG-BH3

Project details:

Date: 21-12-21	Time:	Project number: 21135	Project manager: SH
Client: Time & Place		Project location: Northcote	Sampled by:

Well construction details:

Well diameter (mm): 50	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from 12.9 m to 18.9 m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details: 7.202

Standpipe height (m agl): —	Screen interval (m bTOC)*: as above	Well depth (m bTOC): 12.730
Depth to product (m bTOC): —	DTW (m bTOC): 7.225 / 7.542	DTW with pump (m bTOC): 6.928 / 7.427
Sampling/purging method: Micro Purge	Flow cell: (Yes) No	Pump on (time): 1332 / 1446
Water quality meter: YSI	Initial pump depth: 12.0 / 18.012	Pump off (time):
Water level meter: I.P.	Final pump depth: [illegible]	Post sampling DTW with pump:

Attempted w/ pump @ 12m lower pump depth based on screen interval provided by FSG.

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
1424	CLM	0.5	32.5	7.53	4.628	-149.2	----	7.781	tan, HT, NO, NS
1425	↓	1.0	32.5	7.46	4.551	-154.8	----	7.823	tan, HT, NO, NS
1433	80/20	1.5	32.5	7.47	4.509	-152.6	—	7.899	" ↓
		2.0							
		2.5		bailed	dry	@	0250		
		3.0		due	to	excessive	drawdown.		
				10L	bailed,	Allowed	recharge	overnight.	
		Stopped @			@				

Pump outputting silt. Raised pump to 0.5m below standing water level & started @ 1446

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions				No. of containers	Lab.

Filtering water:

Other observations:

Integrity of well: good	Photograph: —
Weather: fine	
Flow rate:	

* If there is evidence of change in ground elevation refer to project manager.

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **18A105174**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		1911294839	0 ppm
2. Conductivity		2760uS		369734	2760uS
3. pH7		pH 7.00		368081	pH 7.00
4. pH4		pH 4.00		372374	pH 4.00
5. ORP mV		231.8		365451 / 361534	231.8
6. Temp °C		21		163377	21

Calibrated by: **Annie Williams**

Calibration date: **14-Dec-21**

Next calibration due: **12-Jun-22**

PID Calibration Certificate

Instrument **PhoCheck Tiger**

Serial No. **T-105891**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		95ppm Isobutylene	NIST	ME846		95ppm Isobutylene

Calibrated by: **Hsien Rae Tang**

Calibration date: **15/12/2021**

Next calibration due: **13/06/2022**

compassenvironmental

WELL GAUGING RECORD

Project details:

Date: 17/2/22	Time:	Project number: 21135	Project manager: SH
Client:		Project location: 21135 Northcote	Gauged by: J.C.

Measuring equipment:

Water level meter (type): IP	PID Unit Number: 118 248 PID

Well and gauging details:

Time	Well ID.	Installed well depth (m bgl)	Measured standpipe height (m agl)	Gauged well depth (m bTOC)	Depth to product (m bTOC)	Depth to water (m bTOC)	PID reading (ppm)	Comments
	BH09		-	6.93m	~~0~~	3.250	0.0	clear no. n.s.
	DP02A		-	11.61	~~0~~ 0	5.560	0.0	
New well →			-		~~0~~ 0	5.588	0.0	
BH →	~~BH~~05		-	9.90	~~0~~ 0	6.605	0.1	
	DP08		-	9.640	~~0~~ 0	6.750	0.0	
isolate	BH1		-	9.78	0.6	5.617	0.7	
	BH3		-	~~dry~~				No access
	DP16			5.05 ↔		dry	0.0	
	DP12			6.73 ↔		↓	0.0	
	DP13			5.82 ↔			0.1	

compassenvironmental

GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: FSG BH9

Project details:

Date: 18/2/22	Time:	Project number: 21135	Project manager: SH
Client: TdP		Project location: Normanton	Sampled by: J.C.

Well construction details:

Well diameter (mm):	Well headworks: Flush Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl):	Screen interval (m bTOC)*:	Well depth (m bTOC):
Depth to product (m bTOC):	DTW (m bTOC): 3.275	DTW with pump (m bTOC): 3.050
Sampling/purging method: MP	Flow cell: (Yes) No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 3.775	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump: 3.350

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
	CPM1	0.5	19.6	6.48	1964	162.6	2.17	3.225	Clear n.o.n.s.
	↓	1.0	19.4	6.36	1962	165.1	2.04	3.295	↓
	80/20	1.5	19.3	6.30	1937	167.3	2.07	3.305	
	↓	2.0	19.3	6.30	1933	167.7	1.99	3.310	
		2.5	↓	6.30	1931	167.5	2.02	3.310	
		3.0		6.30	1926	166.5	1.98	3.320	

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSGBH9	Prim																	21	ALS
TB180222	TB																	5	
RIN180222	TRIN																	21	

Filtering water:

Filter used: (Yes) No	Filter type: 0.45µm	Analytes filtered: metals	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph: -
Weather: O.C.	
Flow rate:	

* If there is evidence of change in ground elevation refer to project manager.

compassenvironmental

WELL ID: FSGBHS

GROUNDWATER QUALITY SAMPLING RECORD

Project details:

Date:	15/2/22	Time:	Project number:	2135	Project manager: JH
Client:	TEP		Project location:	North Cole	Sampled by: J.C.

Well construction details:

Well diameter (mm):	50	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):		Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl):	~	Screen interval (m bTOC)*:		Well depth (m bTOC):	
Depth to product (m bTOC):	~	DTW (m bTOC):	6.623	DTW with pump (m bTOC):	6.495
Sampling/purging method:	MP	Flow cell:	(Yes) No	Pump on (time):	
Water quality meter:	YSI	Initial pump depth:	7.123	Pump off (time):	
Water level meter:	IP	Final pump depth:		Post sampling DTW with pump:	6.750

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
CPMI	CPMP	0.5	20.2	5.88	6278	181.7	1.57	6.652	clear n o. n.s.
	90/40	1.0	20.2	5.59	6.315	174.9	0.88	6.645	
		1.5	20.4	5.51	6323	173.8	0.89	6.650	
		2.0	20.3	5.49	6324	169.8	0.87	6.705	
		2.5	20.3	5.48	6325	168.2	0.88	6.715	
		3.0	20.3	5.49	6324	167.3	0.86	6.720	
			recharges ok	90/40		but	< 99/20		

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSGBHS	Prim																	21	ALS

Filtering water:

Filter used:	(Yes) No	Filter type:	0.45µm	Analytes filtered:	Met	Colour/ turbidity post-filter:	clear

Other observations:

Integrity of well:	ok
Photograph:	—
Weather:	Windy 0.C.
Flow rate:	~ 90/40

* If there is evidence of change in ground elevation refer to project manager.

compassenvironmental

WELL ID: FSABH1

GROUNDWATER QUALITY SAMPLING RECORD

Project details:

Date: 17/02/22	Time:	Project number: 21135	Project manager:
Client: T&P		Project location: 21135	Sampled by:

Well construction details:

Well diameter (mm):	Well headworks: (Flush) / Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl):	Screen interval (m bTOC)*:	Well depth (m bTOC):
Depth to product (m bTOC):	DTW (m bTOC): 5.617	DTW with pump (m bTOC): 5.400
Sampling/purging method: BAILER	Flow cell: (Yes) No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 6.117	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump: 5.720

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
	CPM1	0.5	23.1	5.91	1715	129.6	1.66	5.518	clear n.o. n.s.
		1.0	23.5	5.82	1730	140.4	1.47	5.640	
		1.5	23.4	5.77	1737	158.7	0.94	5.670	
		2.0	23.4	5.80	1744	159.7	0.37	5.700	
		2.5	23.0	5.77	1728	162.1	0.37	5.700	
		7.0	23.0	5.76	1735	162.2	0.36	5.720	

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
FSABH1	PRIM																	21	ALS
RIN170222	RIN																	21	
TB170222	TB																	5	

Filtering water:

Filter used: (Yes) No	Filter type: 0.45mm	Analytes filtered: Metals	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph:
Weather: Sunny	
Flow rate: CPM1	

* If there is evidence of change in ground elevation refer to project manager.

compassenvironmental

GROUNDWATER QUALITY SAMPLING RECORD

WELL ID: DP 08

Project details:

Date: 17/02/22	Time:	Project number: 21135	Project manager: SH
Client: TfP		Project location: Northcote	Sampled by: J.C.

Well construction details:

Well diameter (mm): 50 mm	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): –	Screen interval (m bTOC)*:	Well depth (m bTOC):
Depth to product (m bTOC): –	DTW (m bTOC): 6.750	DTW with pump (m bTOC): 6.750
Sampling/purging method: mp	Flow cell: (Yes) No	Pump on (time):
Water quality meter: ysi	Initial pump depth: 7.250	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump:

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units)	Elec. Cond. (mS/cm)	REDOX (mV)	Dissolved Oxygen (mg/L)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
				(±0.05)	(±3%)	(±10mV)	(±10%)		
	CPM6	0.5	25.2	6.64	2746	133.0	1.79	6.750	clear n.o. n.s.
		1.0	25.0	6.63	2822	100.5	1.32		
		1.5	24.6	6.60	2838	70.9	0.70		
		2.0	24.4	6.59	2834	48.3	0.80		
		2.5	24.4	6.58	2829	45.3	0.79		
		3.0	24.3	6.58	2825	38.9	0.79		

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
DP08	PPM																		
DP170222	dup																	21	ALS
DP208	Split																	21	ALS
																		19	EU

Filtering water:

Filter used: (Yes) No	Filter type: 0.45 µm	Analytes filtered: Met	Colour/ turbidity post-filter: clear

Other observations:

Integrity of well: ok	Photograph:
Weather: sunny	
Flow rate: CPM6	

* If there is evidence of change in ground elevation refer to project manager.

compassenvironmental

WELL ID: DP02B

GROUNDWATER QUALITY SAMPLING RECORD

Project details:

Date: 17/2/22	Time:	Project number: 21135	Project manager: SH
Client: ~~TTR~~ T&P		Project location: Northam	Sampled by: J.C.

Well construction details:

Well diameter (mm): 50mm	Well headworks: (Flush) Monument	Installed well depth (m bgl):
Installed screen interval from ____ m to ____m (m bgl):	Consumables: LDPE (HDPE)	

Well gauging and sampling/purging details:

Standpipe height (m agl): –	Screen interval (m bTOC)*:	Well depth (m bTOC):
Depth to product (m bTOC): –	DTW (m bTOC): 5.588	DTW with pump (m bTOC): 5.385
Sampling/purging method: MP	Flow cell: (Yes) No	Pump on (time):
Water quality meter: YSI	Initial pump depth: 6.088	Pump off (time):
Water level meter: IP	Final pump depth:	Post sampling DTW with pump: ~~5~~ 5.905

Field measurements:

Time	Purge rate (mL/min)	Volume Purged (L)	Temp (oC)	pH (pH units) (±0.05)	Elec. Cond. (mS/cm) (±3%)	REDOX (mV) (±10mV)	Dissolved Oxygen (mg/L) (±10%)	Depth to water (m)	Comments (colour, turbidity, sheen, odour)
	CPM1	0.5	24.1	6.61	3549	115.1	2.09	5.405	clear, n.o. n.s.
60/20	CPMan	1.0	24.0	6.46	3613	121.9	1.29	5.500	
	↓	1.5	24.8	6.19	3883	126.4	1.28	5.633	
	80/20	2.0	24.1	6.02	3636	132.5	0.98	5.705	
		2.5	23.8	5.99	3623	135.2	0.97	5.708	
	↓	3.0	23.8	5.97	3616	138.8	0.98	5.710	

Samples collected:

Sample number	Sample type	Analytes: Metals	TRH	BTEX-N	HVOL	CHC	PAH	Phenols	Nitrate	Ammonia	Sulphate	TDS	Cations and Anions					No. of containers	Lab.
DP02B	Prim																	21	ALI

Filtering water:

Filter used: (Yes) No	Filter type: 0.45 µm	Analytes filtered: Metals	Colour/ turbidity post-filter: Clear

Other observations:

Integrity of well: ok	Photograph: –
Weather: Cloudy	
Flow rate: 80/20	

* If there is evidence of change in ground elevation refer to project manager.

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104320

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		377403	0 ppm
2. Conductivity		2760uS		368682	2760uS
3. pH7		pH 7.00		381241	pH 7.00
4. pH4		pH 4.00		380327	pH 4.00
5. ORP mV		230.92		375760 / 374426	230.92
6. Temp °C		21.4		163377	21.4

Calibrated by: Declan Tennent

Calibration date: 15-Feb-22

Next calibration due: 14-Aug-22

compassenvironmental

PID CALIBRATION RECORD

Project details:

Date: 17/2/22	Client: T&P	Project number: ~~SH~~ 21135
Time:	Project location: Northwyke	Project manager: SH

PID details:

Unit number:	T-118 248 (Long term)
Lamp voltage:	10.6 eV
Battery check:	/
Pump check:	/
Filters check:	/
Unit clean and sound condition:	/

Calibration details:

Zero-gas (fresh air) concentration:	0 ppm
Zero-gas (fresh air) reading:	0.0
Zero-gas (fresh air) pass?:	/
Span gas:	Isobutylene
Span gas concentration:	100.0
Span gas reading:	100.5
Span gas pass?:	/

Weather:

Prevailing weather conditions:	Sunny / hot

Calibration by:

Name:	JACK CINDRIC
Signature:	Jack

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104320

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		377403	0 ppm
2. Conductivity		2760uS		368682	2760uS
3. pH7		pH 7.00		381241	pH 7.00
4. pH4		pH 4.00		380327	pH 4.00
5. ORP mV		230.92		375760 / 374426	230.92
6. Temp °C		21.4		163377	21.4

Calibrated by: Declan Tennent

Calibration date: 15-Feb-22

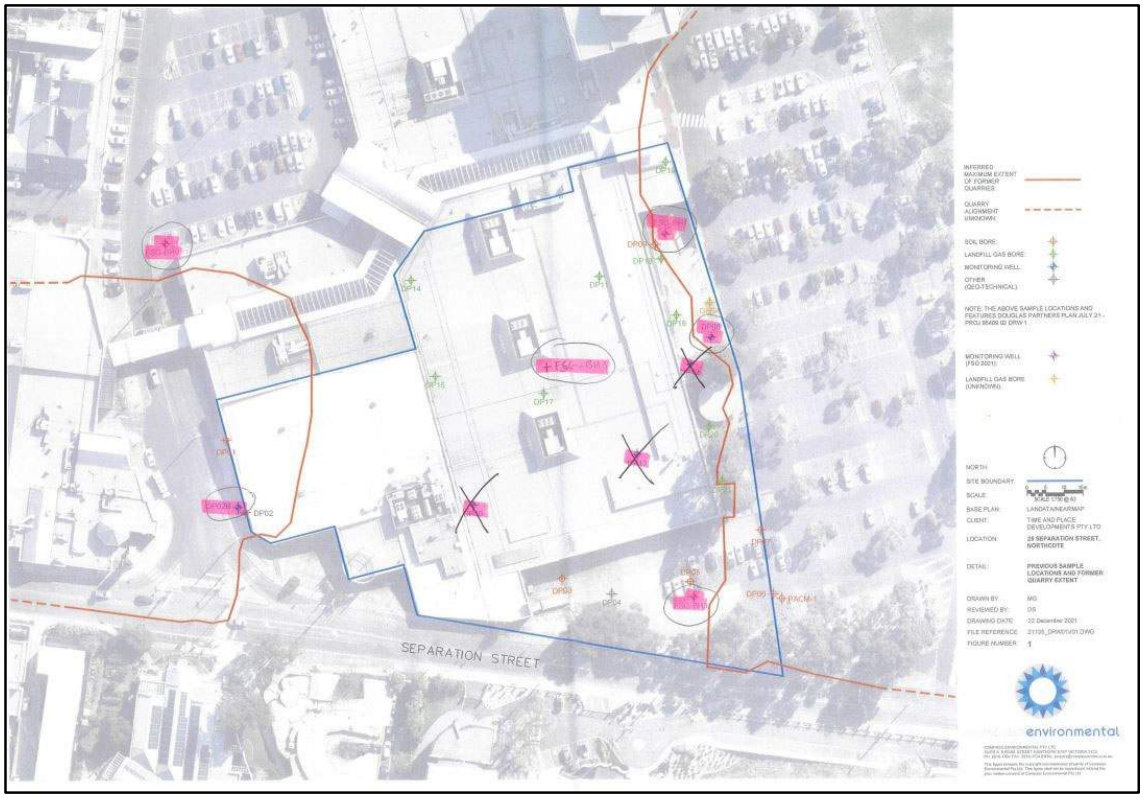
Next calibration due: 14-Aug-22

ADDENDUM

2122197 - Northcote Village Shopping Center					
DATE: 24/01/2022	**MGA94 Zone 55 Co-ordinates**		**Australian Height Datum (AHD)**		
MONITORING WELL	**EASTING**	**NORTHING**	**TOP OF PVC**	**TOP OF GATIC**	**EXISTING SURFACE**
DP02B	323939.85	5817898.57	52.295	52.310	52.31
DP08	324066.94	5817944.02	49.207	49.326	49.33
FSG-BH1	324054.73	5817979.90	48.070	48.168	48.16
FSG-BH3	324059.36	5817877.92	49.777	49.903	49.86
FSG-BH5	324018.55	5817934.91	49.341	49.422	49.42
FSG-BH9	323931.65	5817974.00	49.196	49.270	49.27

*Site Datum
Coordinates and Levels are based on Jika Jika PM 586,
Published Co-ordinates are:

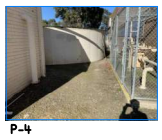
MGA 94 – ZONE 55, AHD.
EASTING 323077.929
NORTHING 5818059.000
A.H.D. RL 40.740




P-1


P-2


P-3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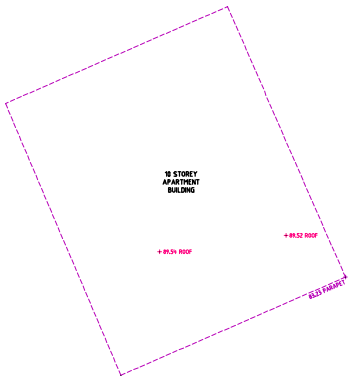
P-10


P-11

TITLE DATUM





NOTE:

This survey has been carried out for the exclusive use of LES SMITH for the purpose of DESIGN & DEVELOPMENT on the site and should not be used for any other purpose or by any other person or corporation.

Structures below the surface level (if any) including footings projecting into the site from adjoining properties have not been located by this survey. We have not excavated the site to determine their existence.

The levels and features shown on this plan have been located by this survey. Any other services and features which may be in the area have not been shown and no attempt to ascertain their existence has been made.

AHD Level Datum derived from JIKA JIKA PM 322 (RL 48.215) located at the corner of HIGH STREET & BEACONSFIELD PARADE.

The AHD datum has been established from one bench mark only. If a precise connection to AHD is critical an additional bench mark should be connected to for verification. If this is required please contact the office of CRA Survey.

Prior to any demolition, excavation or construction on the site the relevant authority should be contacted to ascertain the possible locations of further services and detailed locations of all services.

Unless shown otherwise the position of buildings is to plotting accuracy and the dimensions of buildings should NOT be determined from computer data for any final design plans or workshop details.

This plan has been provided as a hard-copy plan and also in digital format. The hard-copy takes precedence over the digital data as no guarantee can be given to transfer of data to another system.

CRA Survey accepts no responsibility for any loss or damage howsoever suffered to any person or corporation that might use or rely on this plan in contravention of this disclaimer.

HEIGHT & DEPTH LIMITATIONS APPLY TO THIS PROPERTY AND SPECIFICALLY TO LOT 76. SEE CERTIFICATE OF TITLE FOR DETAILS.

CRA SURVEY PTY LTD
LAND SURVEYORS TOWN PLANNERS
DEVELOPMENT CONSULTANTS
7A/346 Belmore Road
Balwyn Vic 3103
office@crsurvey.com.au
Tel: 03 9890 0933

REF: 6561FL2 ORIGINAL SHEET SIZE : A1

LEVEL DATUM: AHD
CONTOUR INTERVAL: 0.2
LENGTHS ARE IN METRES

SURVEYOR: JD

DRAWN BY: BW
DATE OF SURVEY: 24/6/19
VERSION: 1 (22.07.2019)

UNIT 33, 25 SEPARATION STREET
NORTHCOTE, 3070

LOT 50, 51 & 76 ON SP 27953
V.10490 F.290, V.10492 F. 684 & V.10490 F.315

COUNTY OF BOURKE
PARISH OF JIKA JIKA
CROWN ALLOTMENT 2154 (PART)
CROWN PORTIONS 107 (PT), 112 (PT) & 122 (PT)

PLAN OF FEATURE & LEVEL SURVEY

SHEET 1 OF 1 ORIGINAL SCALE 1:400

ATTACHMENT H

Tabulated Soil Results

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

										Inorganics									Metals														
										Moisture Content	pH CaCl2	Cyanide Total	Cyanide amenable to chlorination	Tot +ve report Chlordane	Fluoride	pH (Lab)	Sulphate (as SO4)	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Chromium (hexavalent)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc
										%	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL										0.1	0.1	0.5	1	0.1	40	0.1	100	5	4	10	1	50	0.2	1	2	1	0.5	1	5	0.05	1	1	2	1	1	10	1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)																		20[#1]	100	330[#2]	21[#2]		10[#3]	200[#4]	50[#1]	70[#5]	130[#16]	1100[#6]	500[#7]	6.6[#3]	10[#1]	35[#8]	10[#9]	20[#1]	50[#1]	130[#10]	110[#11]
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)																		20[#1]	100	330[#2]	21[#2]		10[#3]	200[#4]	50[#1]	70[#5]	130[#16]	1100[#6]	500[#7]	6.6[#3]	10[#1]	35[#8]	10[#9]	20[#1]	50[#1]	130[#10]	110[#11]
NEPM 2013 EIL Fill (Commercial/Industrial)																		*40[#1]*	*160*	*330[#2]*	*21[#2]*		*22[#3]*	*320[#4]*	*300[#1]*	*95[#5]*		*1800[#6]*	*500[#7]*	*24[#3]*	*40[#1]*	*60[#8]*	*10[#9]*		*300[#1]*	*130[#10]*	*150[#11]*
NEPM 2013 EIL Natural (Commercial/Industrial)																		**40[#1]**	**160**	**330[#2]**	**21[#2]**		**22[#3]**	**320[#4]**	**300[#1]**	**95[#5]**		**1800[#6]**	**500[#7]**	**24[#3]**	**40[#1]**	**60[#8]**	**10[#9]**		**300[#1]**	**130[#10]**	**150[#11]**
NEPM 2013 Table 1A(1) HILs Res A Soil												250[#20]			3100[#21]			31[#21]	100[#22]	15000[#21]	60	4500	20	120000[#29]	100	6000	100	300[#23]	3800	40[#24]	390[#21]	400	200	390[#21]	47000[#21]	390[#21]	7400
NEPM 2013 Table 1A(1) HILs Res B Soil												300[#20]			3100[#21]			31[#21]	500[#22]	15000[#21]	90	40000	150	120000[#29]	600	30000	500	1200[#23]	14000	120[#24]	390[#21]	1200	1400	390[#21]	47000[#21]	390[#21]	60000
NEPM 2013 Table 1A(1) HILs Rec C Soil												240[#20]			3100[#21]			31[#21]	300[#22]	15000[#21]	90	20000	90	120000[#29]	300	17000	300	600[#23]	19000	80[#24]	390[#21]	1200	700	390[#21]	47000[#21]	390[#21]	30000
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil												1500[#20]			47000[#21]			470[#21]	3000[#22]	220000[#21]	500	300000	900		4000	240000	3600	1500[#23]	60000	730[#24]	5800[#21]	6000	10000	5800[#21]	700000[#21]	5800[#21]	400000
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																
Compass Environmental Data																																					
TP1	TP1/0.3	11/03/2022	EM2204517	Normal	Fill	20.4	9.2	<1	<1	-	290	-	300	<5	6	130	<1	<50	<1	-	7	-	<0.5	17	-	<0.1	<2	20	<5	<2	-	-	34
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	18.8	9.2	<1	<1	-	300	-	-	<5	6	80	<1	<50	<1	-	13	-	<0.5	12	-	<0.1	<2	50	<5	<2	-	-	43
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	16	-	-	-	-	-	-	-	<10	6.7	170	<2	<10	<0.4	27	17	28	-	25	300	<0.1	<5	*63*	<2	<2	<10	40	62
TP1	TP1/2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	16.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1/3.0	11/03/2022	EM2204517	Normal	Fill	16.8	8	<1	<1	-	330	-	<100	<5	<5	60	<1	<50	<1	-	6	-	0.5	15	-	<0.1	<2	18	<5	<2	-	-	62
TP2	TP2/0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2/1.0	11/03/2022	EM2204517	Normal	Fill	13.2	8	<1	<1	-	310	-	-	<5	<5	80	<1	<50	<1	-	-	18	<0.5	26	-	<0.1	<2	20	<5	<2	<5	-	64
TP2	TP2/3.0	11/03/2022	EM2204517	Normal	Fill	17.4	7.9	<1	<1	-	290	-	-	<5	6	150	<1	<50	<1	-	6	-	<0.5	28	-	<0.1	<2	23	<5	<2	-	-	54
Douglas Partners Data																																					
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	14	-	<5	-	-	400	9.2	-	-	<5	-	-	-	<0.2	-	-	24	<1	23	-	<0.05	<5	19	<3	<5	<5	-	37
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	9	-	-	-	<0.2	29	-	31	-	120	-	0.11	<5	37	<3	<5	7	-	91
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	9	-	-	-	0.2	28	-	35	-	89	-	0.13	<5	38	<3	<5	<5	-	120
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	10	-	-	-	0.3	20	-	29	-	370	-	0.43	<5	17	<3	<5	7	-	100
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	9	-	-	-	3.8	39	-	*480*	-	290	-	0.21	<5	*62*	<3	<5	150	-	*1800*
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	5	-	-	-	<0.2	26	-	24	-	11	-	<0.05	<5	<5	<3	<5	<5	-	55
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	9	-	-	-	<0.2	25	-	42	-	15	-	<0.05	<5	<5	<3	<5	<5	-	37
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.2	6	-	<5	-	7	-	<0.05	<5	<5	<3	<5	<5	-	<5
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.2	22	-	29	-	18	-	<0.05	<5	59	<3	<5	<5	-	60
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	<5	-	-	-	0.5	83	-	42	-	47	-	<0.05	<5	15	<3	<5	<5	-	63
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	8	-	<5	-	-	300	9	-	-	<5	-	-	-	<0.2	-	-	18	<1	13	-	<0.05	<5	13	<3	<5	<5	-	32
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.2	22	-	16	-	14	-	<0.05	<5	19	<3	<5	<5	-	39
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.2	9	-	11	-	6	-	0.2	<5	37	<3	<5	<5	-	21
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.2	15	-	15	-	5	-	<0.05	<5	<5	<3	<5	<5	-	11
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	17	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	24	-	58	-	17	-	<0.1	<1	22	<2	<1	7	-	53
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	13	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	28	-	21	-	15	-	<0.1	<1	8	<2	<1	<1	-	40
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	14	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	21	-	29	-	15	-	<0.1	<1	31	<2	<1	<1	-	79
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	12	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	34	-	28	-	13	-	<0.1	<1	6	<2	<1	<1	-	37
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	21	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	18	-	32	-	7	-	<0.1	<1	19	<2	<1	5	-	15
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	12	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	21	-	36	-	6	-	<0.1	<1	*74*	<2	<1	<1	-	45
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	9.7	-	<0.5	-	<1	190	8.2	-	-	6	-	-	-	<0.4	23	-	27	<1	11	-	<0.1	2	5	<2	<1	<1	-	8
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	17	-	-	-	-	-	-	-	-	6	-	-	-	<0.4	19	-	46	-	12	-	<0.1	<1	10	<2	<1	1	-	30
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	12	-	-	-	-	-	-	-	-	4	-	-	-	<0.4	27	-	41	-	7	-	<0.1	<1	44	<2	<1	2	-	32
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	13	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	40	-	24	-	13	-	<0.1	<1	4	<2	<1	<1	-	16
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	12	-	-	-	-	-	-	-	-	7	-	-	-	<0.4	25	-	16	-	11	-	<0.1	<1	2	<2	<1	<1	-	9
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	14	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	24	-	22	-	8	-	<0.1	<1	16	<2	<1	<1	-	21
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	11	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	31	-	17	-	12	-	<0.1	<1	18	<2	<1	1	-	38
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	12	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	18	-	4	-	12	-	<0.1	<1	2	<2	<1	<1	-	3
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	6.9	-	-	-	-	-	-	-	-	4	-	-	-	<0.4	22	-	14	-	19	-	<0.1	<1	12	<2	<1	1	-	46
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	8.2	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	24	-	14	-	18	-	<0.1	<1	12	<2	<1	1	-	49

Env Stds Comments

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

	Inorganics								Metals																				
	Moisture Content	pH CaCl2	Cyanide Total	Cyanide amenable to chlorination	Tot +ve report Chlordane	Fluoride	pH (Lab)	Sulphate (as SO4)	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Chromium (hexavalent)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc
	%	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.5	1	0.1	40	0.1	100	5	4	10	1	50	0.2	1	2	1	0.5	1	5	0.05	1	1	2	1	1	10	1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)									20[#1]	100	330[#2]	21[#2]		10[#3]	200[#4]	50[#1]	70[#5]	130[#16]	1100[#6]	500[#7]	6.6[#3]	10[#1]	35[#8]	10[#9]	20[#1]	50[#1]	130[#10]	110[#11]
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)									20[#1]	100	330[#2]	21[#2]		10[#3]	200[#4]	50[#1]	70[#5]	130[#16]	1100[#6]	500[#7]	6.6[#3]	10[#1]	35[#8]	10[#9]	20[#1]	50[#1]	130[#10]	110[#11]
NEPM 2013 EIL Fill (Commercial/Industrial)									*40[#1]*	*160*	*330[#2]*	*21[#2]*		*22[#3]*	*320[#4]*	*300[#1]*	*95[#5]*		*1800[#6]*	*500[#7]*	*24[#3]*	*40[#1]*	*60[#8]*	*10[#9]*		*300[#1]*	*130[#10]*	*150[#11]*
NEPM 2013 EIL Natural (Commercial/Industrial)									**40[#1]**	**160**	**330[#2]**	**21[#2]**		**22[#3]**	**320[#4]**	**300[#1]**	**95[#5]**		**1800[#6]**	**500[#7]**	**24[#3]**	**40[#1]**	**60[#8]**	**10[#9]**		**300[#1]**	**130[#10]**	**150[#11]**
NEPM 2013 Table 1A(1) HILs Res A Soil			250[#20]			3100[#21]			31[#21]	100[#22]	15000[#21]	60	4500	20	120000[#29]	100	6000	100	300[#23]	3800	40[#24]	390[#21]	400	200	390[#21]	47000[#21]	390[#21]	7400
NEPM 2013 Table 1A(1) HILs Res B Soil			300[#20]			3100[#21]			31[#21]	500[#22]	15000[#21]	90	40000	150	120000[#29]	600	30000	500	1200[#23]	14000	120[#24]	390[#21]	1200	1400	390[#21]	47000[#21]	390[#21]	60000
NEPM 2013 Table 1A(1) HILs Rec C Soil			240[#20]			3100[#21]			31[#21]	300[#22]	15000[#21]	90	20000	90	120000[#29]	300	17000	300	600[#23]	19000	80[#24]	390[#21]	1200	700	390[#21]	47000[#21]	390[#21]	30000
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil			1500[#20]			47000[#21]			470[#21]	3000[#22]	220000[#21]	500	300000	900		4000	240000	3600	1500[#23]	60000	730[#24]	5800[#21]	6000	10000	5800[#21]	700000[#21]	5800[#21]	400000

Location	Field ID	Sampled Date	Lab Report No.	Sample Type	Matrix Description

#1:Based on CCME 1991
#2:US EPA 2005 ECO SSL
#3:Based on CCME 1999
#4:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995). Criteria based on Cr(III).
#5:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(2) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#6:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(4) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#7:NEPC 1999. NEPM Interim Urban Ecological Investigation Level.
#8:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#9:Based on EPA IWRG 621 Clean Fill Criteria
#10:Based on CCME 1997
#11:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(1) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#12:Based on Ministry of Infrastructure and Environment, Dutch Target Intervention Value (2013 Circular)
#13:Based on US EPA Region 4 Soil Screening Value (All Receptors) - revised 2015
#14:Based on PFAS NEMP, indirect exposure pathway for intensively developed sites (HEPA 2018)
#15:Based on PFAS NEMP, direct exposure pathway (HEPA 2018)
#16:ECO SSL 2008 - Protection of Mammalian Wildlife
#17:US EPA 2007 ECO SSL - Based on high molecular weight PAHs
#18:Based on PFAS NEMP, indirect exposure pathway (HEPA 2018)
#19:Based on PFAS NEMP, direct exposure pathway (HEPA 2020)
#20:Based on free cyanide.
#21:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020
#22:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer shedule B7).
#23:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#24:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#25:Carcinogenic PAHs: HIL based on 8 carcinogenic PAHs & their TEFs (relative to BaP, ref Schedule B7). BaP TEQ = Sum of each carcinogenic PAH adjusted by its BaP TEF (refer Tabl 1A(1).
#26:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#27:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#28:Based on PFAS NEMP (HEPA 2018)
#29:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020 - Chromium insoluble salts criteria has been adopted

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

| | | |

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

	TRH												MAH								PAH															
	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	TRH C6-C10 less BTEX (F1)	C10-C16	TRH>C10-C16 less Naphthalene (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	BTEX (Sum)	Styrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	10	20	50	50	50	10	10	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.2	0.1	0.1	0.2	0.1	0.5	0.1	0.1	0.1	0.1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)																																				
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)																																				
NEPM 2013 EIL Fill (Commercial/Industrial)																																				
NEPM 2013 EIL Natural (Commercial/Industrial)																																				
NEPM 2013 Table 1A(1) HILs Res A Soil																										3[#25]	3[#25]	3[#25]								
NEPM 2013 Table 1A(1) HILs Res B Soil																										4[#25]	4[#25]	4[#25]								
NEPM 2013 Table 1A(1) HILs Rec C Soil																										3[#25]	3[#25]	3[#25]								
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																										40[#25]	40[#25]	40[#25]								

Location	Field ID	Sampled Date	Lab Report No.	Sample Type	Matrix Description

#1:Based on CCME 1991
#2:US EPA 2005 ECO SSL
#3:Based on CCME 1999
#4:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995). Criteria based on Cr(III).
#5:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(2) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#6:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(4) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#7:NEPC 1999. NEPM Interim Urban Ecological Investigation Level.
#8:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#9:Based on EPA IWRG 621 Clean Fill Criteria
#10:Based on CCME 1997
#11:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(1) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#12:Based on Ministry of Infrastructure and Environment, Dutch Target Intervention Value (2013 Circular)
#13:Based on US EPA Region 4 Soil Screening Value (All Receptors) - revised 2015
#14:Based on PFAS NEMP, indirect exposure pathway for intensively developed sites (HEPA 2018)
#15:Based on PFAS NEMP, direct exposure pathway (HEPA 2018)
#16:ECO SSL 2008 - Protection of Mammalian Wildlife
#17:US EPA 2007 ECO SSL - Based on high molecular weight PAHs
#18:Based on PFAS NEMP, indirect exposure pathway (HEPA 2018)
#19:Based on PFAS NEMP, direct exposure pathway (HEPA 2020)
#20:Based on free cyanide.
#21:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020
#22:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer shedule B7).
#23:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#24:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#25:Carcinogenic PAHs: HIL based on 8 carcinogenic PAHs & their TEFs (relative to BaP, ref Schedule B7). BaP TEQ = Sum of each carcinogenic PAH adjusted by its BaP TEF (refer Tabl 1A(1).
#26:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#27:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#28:Based on PFAS NEMP (HEPA 2018)
#29:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020 - Chromium insoluble salts criteria has been adopted

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

	PAH						Phenols Halogenated											Phenols Non-Halogenated											HVOLs				
	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,3,4,5-tetrachlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,3,5,6-Tetrachlorophenol	2,4-dichlorophenol	2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	4-methylphenol	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1-trichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,1,1,2-tetrachloroethane	1,2-dibromoethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.1	0.1	0.03	0.03	0.1	0.05	0.2	0.5	0.4	0.2	1	1	2	5	4	0.2	0.2	0.2	0.5	1	0.01	0.01	0.5	0.01	0.5
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)			170			18[#17]																												
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)			170			18[#17]																												
NEPM 2013 EIL Fill (Commercial/Industrial)			*370*																															
NEPM 2013 EIL Natural (Commercial/Industrial)			**370**																															
NEPM 2013 Table 1A(1) HILs Res A Soil						300[#26]				100											400				3000									
NEPM 2013 Table 1A(1) HILs Res B Soil						400[#26]				130											4700				45000									
NEPM 2013 Table 1A(1) HILs Rec C Soil						300[#26]				120											4000				40000									
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil						4000[#26]				660											25000				240000									
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																													
Compass Environmental Data																																		
TP1	TP1/0.3	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-	<0.01	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-	<0.01	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1/2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1/3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-	<0.01	-
TP2	TP2/0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2/1.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-	<0.01	-
TP2	TP2/3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-	<0.01	-
Douglas Partners Data																																		
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	<0.1	<0.1	<0.1	0.1	0.2	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<1	<10	<30	<30	<0.5	<0.5	<0.5	<0.5	<30	<0.5	<0.5	<0.5	<0.5	<0.5
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	<0.1	0.3	<0.1	0.5	0.8	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	<0.2	1.8	<0.2	3.4	5.6	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	0.2	0.7	0.2	2.2	2.5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	<0.1	<0.1	<0.1	<0.1	0.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	<0.1	0.1	<0.1	0.6	0.6	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	<0.1	1	<0.5 - 0.1	1.5	2.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<1	<10	<30	<30	<0.5	<0.5	<0.5	<0.5	<30	<0.5	<0.5	<0.5	<0.5	<0.5
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	0.3	3.2	0.6	5.7	11	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	0.3	<0.1	1 - 1.3	0.7	0.2	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	<0.1	<0.1	<1 - 0.2	0.2	0.2	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	10	<1	51 - 64	25	7.7	130	<0.5	<1	<0.5	<1	<1	<0.5	<2	<1	<0.5	<2	<10	<4	<2	-	-	<20	<200	<40	<2	<2	<2	<40	<600	<1	<1	-	<1	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	32	<10	**290 - 400**	64	12	490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	43	<10	**450 - 660**	84	16	710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	2.6	<0.1	3.9 - 5	4.9	0.2	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	<3	<1	2.6 - 7	3.7	<1	6.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	0.2	0.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	<0.1	0.6	<0.1	1.2	2.2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	<0.1	0.4	<0.1	0.2	1.1	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

	PAH						Phenols Halogenated										Phenols Non-Halogenated										HVOLs				
	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,3,4,5-tetrachlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,3,5,6-Tetrachlorophenol	2,4-dichlorophenol	2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	4-methylphenol	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1-trichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,1,1,2-tetrachloroethane	1,2-dibromoethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.1	0.1	0.03	0.03	0.1	0.05	0.2	0.5	0.4	0.2	1	1	2	5	4	0.2	0.2	0.2	0.5	1	0.01	0.01	0.5	0.01	0.5
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)			170			18[#17]																												
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)			170			18[#17]																												
NEPM 2013 EIL Fill (Commercial/Industrial)			*370*																															
NEPM 2013 EIL Natural (Commercial/Industrial)			**370**																															
NEPM 2013 Table 1A(1) HILs Res A Soil						300[#26]				100											400				3000									
NEPM 2013 Table 1A(1) HILs Res B Soil						400[#26]				130											4700				45000									
NEPM 2013 Table 1A(1) HILs Rec C Soil						300[#26]				120											4000				40000									
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil						4000[#26]				660											25000				240000									

Location	Field ID	Sampled Date	Lab Report No.	Sample Type	Matrix Description

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#26:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#27:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

| | | |

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Table 1 - Soil EIL/HIL Results

	Halogenated Vol. Organics																												Chlorinated Hydrocarbons						
	1,2-dichloroethane	1,1,1,2,2-tetrachloroethane	1,2-dichloropropane	1,1,2-trichloroethane	4-chlorotoluene	1,1-dichloroethane	2,2-dichloropropane	Bromodichloromethane	Bromoform	2-chlorotoluene	1,2-dibromo-3-chloropropane	Carbon tetrachloride	1,2,3-trichloropropane	Bromobenzene	1,3-dichloropropane	Bromochloromethane	Chlorobenzene	Chlorodibromomethane	Chloroform	cis-1,2-dichloroethene	trans-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	trans-1,3-dichloropropene	Dichloromethane	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	1,2,3,4-tetrachlorobenzene	1,3-dichlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Trichlorobenzene (total)	Benzyl chloride	Benzotrichloride
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.02	0.02	0.5	0.04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.5	0.5	0.5	0.5	0.02	0.5	0.02	0.01	0.02	0.5	0.5	0.5	0.2	0.02	0.02	2	0.02	0.1	0.1	0.1	0.1	0.01	0.1	0.1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)																																				
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)																																				
NEPM 2013 EIL Fill (Commercial/Industrial)																																				
NEPM 2013 EIL Natural (Commercial/Industrial)																																				
NEPM 2013 Table 1A(1) HILs Res A Soil																																				
NEPM 2013 Table 1A(1) HILs Res B Soil																																				
NEPM 2013 Table 1A(1) HILs Rec C Soil																																				
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Table 1 - Soil EIL/HIL Results

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Table 1 - Soil EIL/HIL Results

	CHCs												Organochlorine Pesticides																							
	1,2,3,5-Tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3,5-Trichlorobenzene	1,4-dichlorobenzene	2-chloronaphthalene	Benzal Chloride	Hexachlorobenzene	Hexachlorobutadiene	Pentachlorobenzene	Aldrin + Dieldrin	Chlordane	Chlordane (cis)	Chlordane (trans)	DDT+DDE+DDD	Endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan II	Oxychlordane	Endosulfan I	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.01	0.1	0.01	0.02	0.01	0.02	0.1	0.1	0.03	0.02	0.1	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.03	0.03	0.03	0.03	0.05	0.05	0.03	0.03	0.05	0.03	0.03	0.03	0.03	0.05	0.03	0.03
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)														4 #12	0.27 #13										180									1.2 #12	
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)														4 #12	0.27 #13										180									1.2 #12	
NEPM 2013 EIL Fill (Commercial/Industrial)														*4* #12	*0.27* #13										*640*									*1.2* #12	
NEPM 2013 EIL Natural (Commercial/Industrial)														**4** #12	**0.27** #13										**640**									**1.2** #12	
NEPM 2013 Table 1A(1) HILs Res A Soil										10			6	50			240	270													10				6
NEPM 2013 Table 1A(1) HILs Res B Soil										15			10	90			600	400													20				10
NEPM 2013 Table 1A(1) HILs Rec C Soil										10			10	70			400	340													20				10
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil										80			45	530			3600	2000													100				50

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Table 1 - Soil EIL/HIL Results

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Table 1 - Soil EIL/HIL Results

	OCPs		Herbicides		Polychlorinated Biphenyls								Solvents	Explosives		Phthalates	Organic	Organo Metals	PFAS										
	Heptachlor epoxide	Methoxychlor	Hedonal	Dinoseb	Arochlor 1221	Arochlor 1232	Arochlor 1016	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Methyl Ethyl Ketone	2,4-Dinitrotoluene	Nitrobenzene	Bis(2-ethylhexyl) phthalate	Formaldehyde	Tributyltin oxide (TBTO)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.03	0.03	0.001	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	2	0.01	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002
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NEPM 2013 EIL Natural (Commercial/Industrial)																													
NEPM 2013 Table 1A(1) HILs Res A Soil		300	900									1 [#27]																	
NEPM 2013 Table 1A(1) HILs Res B Soil		500	1600									1 [#27]																	
NEPM 2013 Table 1A(1) HILs Rec C Soil		400	1300									1 [#27]																	
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil		2500	9000									7 [#27]																	

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Table 1 - Soil EIL/HIL Results

													PFAS											Asbestos
	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*	Asbestos Detected
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)											0.01[#18]	10[#15]									
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)											0.01[#18]	10[#19]									
NEPM 2013 EIL Fill (Commercial/Industrial)											*0.14*[#14]	*10*[#15]									
NEPM 2013 EIL Natural (Commercial/Industrial)											**0.14**[#14]	**10**[#15]									
NEPM 2013 Table 1A(1) HILs Res A Soil												0.1[#28]							0.009[#28]		
NEPM 2013 Table 1A(1) HILs Res B Soil												20[#28]							2[#28]		
NEPM 2013 Table 1A(1) HILs Rec C Soil												10[#28]							1[#28]		
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil												50[#28]							20[#28]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																			
Compass Environmental Data																								
TP1	TP1/0.3	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1/2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.0002	<0.0002	0.0005	0.0004	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0015	0.0019	-
TP1	TP1/3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2/0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	0.0015	0.0015	-
TP2	TP2/1.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2/3.0	11/03/2022	EM2204517	Normal	Fill	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0009	0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0017	0.0012	0.0017	-
Douglas Partners Data																								
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil EIL/HIL Results

	PFAS																				Asbestos
	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*	Asbestos Detected
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.1
NEPM 2013 EIL Fill (Urban Residential and Public Open Space)											0.01[#18]	10[#15]									
NEPM 2013 EIL Natural (Urban Residential and Public Open Space)											0.01[#18]	10[#19]									
NEPM 2013 EIL Fill (Commercial/Industrial)											*0.14*[#14]	*10*[#15]									
NEPM 2013 EIL Natural (Commercial/Industrial)											**0.14**[#14]	**10**[#15]									
NEPM 2013 Table 1A(1) HILs Res A Soil												0.1[#28]							0.009[#28]		
NEPM 2013 Table 1A(1) HILs Res B Soil												20[#28]							2[#28]		
NEPM 2013 Table 1A(1) HILs Rec C Soil												10[#28]							1[#28]		
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil												50[#28]							20[#28]		

Location	Field ID	Sampled Date	Lab Report No.	Sample Type	Matrix Description

#1:Based on CCME 1991
#2:US EPA 2005 ECO SSL
#3:Based on CCME 1999
#4:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995). Criteria based on Cr(III).
#5:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(2) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#6:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(4) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#7:NEPC 1999. NEPM Interim Urban Ecological Investigation Level.
#8:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(3) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#9:Based on EPA IWRG 621 Clean Fill Criteria
#10:Based on CCME 1997
#11:Generic, conservative value based on ACL from NEPM 2013, Schedule B1, Table 1B(1) and ABC provided for an old Victorian suburb with low traffic (Olszowy et al 1995).
#12:Based on Ministry of Infrastructure and Environment, Dutch Target Intervention Value (2013 Circular)
#13:Based on US EPA Region 4 Soil Screening Value (All Receptors) - revised 2015
#14:Based on PFAS NEMP, indirect exposure pathway for intensively developed sites (HEPA 2018)
#15:Based on PFAS NEMP, direct exposure pathway (HEPA 2018)
#16:ECO SSL 2008 - Protection of Mammalian Wildlife
#17:US EPA 2007 ECO SSL - Based on high molecular weight PAHs
#18:Based on PFAS NEMP, indirect exposure pathway (HEPA 2018)
#19:Based on PFAS NEMP, direct exposure pathway (HEPA 2020)
#20:Based on free cyanide.
#21:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020
#22:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer shedule B7).
#23:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#24:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#25:Carcinogenic PAHs: HIL based on 8 carcinogenic PAHs & their TEFs (relative to BaP, ref Schedule B7). BaP TEQ = Sum of each carcinogenic PAH adjusted by its BaP TEF (refer Tabl 1A(1).
#26:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#27:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#28:Based on PFAS NEMP (HEPA 2018)
#29:Based on US EPA Regional Screening Levels (RSLs) (TR=1 E-6, HQ=1.0), revised May 2020 - Chromium insoluble salts criteria has been adopted

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil ESL/HSL Results

| | | |

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil ESL/HSL Results

	PAH								
	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05
NEPM 2013 Table 1B(6) ESLs Urban Res & Public Open Space, Coarse Soil (0-2 m)									
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2 m)									
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand (0-1 m)						3			
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1 m)						NL[#3]			
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand (0-1 m)						NL[#3]			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									
Direct Contact HSL A Residential (low density)						1400[#1]			
Direct Contact HSL B Residential (high density)						2200[#1]			
Direct Contact HSL C Recreational/ Open Space						1900[#1]			
Direct Contact HSL D Commercial/ Industrial						11000[#1]			
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**									
Compass Environmental Data														
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Douglas Partners Data														
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	0.7
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	0.4	<0.1	0.9	<0.1	0.3	<0.1	0.5	0.8	5.2
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	2.3	0.4	5.3	<0.2	1.8	<0.2	3.4	5.6	34
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	1.1	0.2	2.9	0.2	0.7	0.2	2.2	2.5	17
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.2	1.2
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	0.3	<0.1	0.7	<0.1	0.1	<0.1	0.6	0.6	3.8
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	1.2	0.2	2.6	<0.1	1	<0.5 - 0.1	1.5	2.5	16
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	4.8	1.1	11	0.3	3.2	0.6	5.7	11	68
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	<0.1	<0.1	0.2	0.3	<0.1	1 - 1.3	0.7	0.2	3.4
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	<0.1	<0.1	0.1	<0.1	<0.1	<1 - 0.2	0.2	0.2	0.86
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	<1	<1	8.2	10	<1	51 - 64	25	7.7	130
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	<10	<10	15	32	<10	290 - 400	64	12	490
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	<10	<10	19	43	<10	450 - 660	84	16	710
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	38	-	-	-
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	<0.1	<0.1	0.4	2.6	<0.1	3.9 - 5	4.9	0.2	14
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	<1	<1	<1	<3	<1	2.6 - 7	3.7	<1	6.3
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	3	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.57
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	0.8	0.1	2.2	<0.1	0.6	<0.1	1.2	2.2	12
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	0.5	<0.1	1	<0.1	0.4	<0.1	0.2	1.1	6.2

Env Stds Comments
#1:CRC Care (2011)
#2:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Derived soil HSL exceeds soil saturation concentration
#4:To obtain F2 subtract naphthalene from the >C10 - C16 fraction.
#5:Based on revised CCME (2010) criteria.
#6:Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2

ATTACHMENT I

Tabulated Groundwater Results

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	Inorganics										Field					Gases	Anions					Cations				Nitrogen							Metals							
	TDS	TOC	Cyanide Total	Cyanide (Free)	Anions Total	Cations Total	Ionic Balance	BOD	COD	Sulphate (as SO4)	Temp (Field)	pH (Field)	EC (field)	Redox Potential (Field)	DO (Field)	Methane	Alkalinity (Hydroxide) as CaCO3	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Carbonate as CaCO3)	Alkalinity (total) as CaCO3	Chloride	Calcium	Magnesium	Potassium	Sodium	Ammonia as N	Kjeldahl Nitrogen Total	Nitrate (as N)	Nitrate & Nitrite (as N)	Nitrogen (Organic)	Nitrite (as N)	Nitrogen (Total)	Aluminium	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium
	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	oC	pH Units	mS/cm	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	10	1	0.004	0.004	0.01	0.01	0.01	2	10	1						0.01	1	1	1	1	1	1	1	1	1	0.01	0.1	0.01	0.01	0.2	0.01	0.1	0.005	0.0002	0.0002	0.0005	0.0001	0.005	0.00005
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra				0.007																						0.9		2.4[#14]			0.06[#15]	1.1[#16]	0.055	0.009[#17]	0.013	0.625[#18]	0.00013[#17]	0.94	0.0002
21135 Irrigation LTV - ANZG 2018												6-8.5[#1]									175[#2]				115[#2]						5[#3]	5		0.1		0.1	0.5	0.01
Irrigation STV - ANZG 2018												6-8.5[#1]																				20		2		0.5		0.05
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008	600[#2]			0.8						250[#4]		6.5-8.5[#5]									250[#4]				180[#4]	0.41		112.9[#6]			9.1[#6]		0.2[#4]	0.03[#6]	0.1[#6]	20[#6]	0.6[#6]	40[#6]	0.02[#6]
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)																																							
21135 Stockwater - ANZG 2018	2000[#12]			0.08						1000		6.5-8.5[#2]										1000				0.411		90.29			9.119[#2]		5		0.5		0.06	5	0.01
Stockwater - ANZG 2018 (Aesthetic)																																							

Location	Field ID	Sampled Date	Lab Report No.	Sample Type																																				
DP02B	DP02B	22/12/2021	EM2125901	Normal	2520	30	<0.004	<0.004	36.5	39.5	4.02	-	32	900	23.4	7.18	3.549	34.1	2.73	<0.01	<1	472	<1	472	294	99	128	42	528	0.06	4.2	99.8	100	-	0.25	104	0.02	<0.001	<0.001	0.025	<0.0001	1.53	<0.0001
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	2800	23	<0.004	<0.004	40.8	45.2	5.16	<2	63	891	23.8	5.97	3.616	138.8	0.98	<0.01	<1	498	<1	498	436	88	120	34	692	0.02	4.1	93.8	94.3	-	0.54	98.4	0.013	0.0009	0.0014	0.0285	<0.0001	1.52	0.00017
DP08	DP08	21/12/2021	EM2125876	Normal	1720	20	<0.004	<0.004	37.2	30.2	10.5	-	40	248	23.5	6.74	2.943	-3.2	0.52	0.331	<1	866	<1	866	524	69	89	42	421	2.79	3.3	<0.01	<0.01	-	<0.01	3.3	<0.01	<0.001	0.002	0.057	<0.0001	0.85	<0.0001
DP08	DP08	17/02/2022	EM2202680	Normal	1790	17	<0.004	<0.004	32.9	30.3	4.11	<2	39	246	24.3	6.58	2.825	38.9	0.79	0.818	<1	721	<1	721	474	71	91	39	420	2.05	2.5	<0.01	<0.01	-	<0.01	2.5	<0.005	<0.0002	0.0018	0.059	<0.0001	0.915	<0.00005
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	1910	16	<0.004	<0.004	32.8	29.4	5.4	<2	37	247	-	-	-	-	-	0.832	<1	716	<1	716	474	70	88	38	408	2.1	2.4	0.05	0.05	-	<0.01	2.4	<0.005	<0.0002	0.0018	0.0596	<0.0001	0.92	<0.00005
DP08	DP208	17/02/2022	864761	Interlab_D	-	<5	<0.005	<0.005	-	-	-	<5	40	-	-	-	-	-	-	0.22	-	-	-	800	-	-	-	-	-	2.5	2.5	<0.02	<0.05	<0.2	<0.02	2.5	<0.05	<0.005	0.002	0.06	<0.001	1.1	<0.0002
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	1020	6	<0.004	<0.004	19	16.9	6.03	-	31	381	23.6	7.25	1.606	-5.4	2.37	<0.01	<1	426	<1	426	92	38	60	15	222	0.16	1.4	8.66	9.13	-	0.47	10.5	0.14	<0.001	<0.001	0.037	<0.0001	0.56	<0.0001
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	1270	21	<0.004	<0.004	21.7	20.9	1.87	<2	14	476	23	5.76	1.735	162.2	0.36	<0.01	<1	462	<1	462	92	61	98	17	216	0.24	1.1	6.53	7.01	-	0.48	8.1	0.046	0.0005	0.0007	0.0398	<0.0001	0.724	0.00011
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	4400	6	<0.004	<0.004	68.5	72.5	2.79	-	15	237	-	7.38	6.656	-74.5	0.78	0.02	<1	614	<1	614	1820	65	106	53	1360	0.99	1.4	1.05	1.33	-	0.28	2.7	44.6	<0.001	0.016	0.466	0.004	0.15	0.0001
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	4530	5	<0.004	<0.004	68.5	71.3	1.99	-	14	236	-	-	-	-	-	0.019	<1	615	<1	615	1820	63	104	52	1340	1	1.4	1.05	1.33	-	0.28	2.7	52	<0.001	0.017	0.513	0.0038 - 0.005	0.16	0.0002
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	-	<5	<0.005	<0.005	-	-	-	-	40	-	-	-	-	-	-	<0.05	-	-	-	570	-	-	-	-	0.81	1.1	1.3	1.4	0.29	0.04	2.5	2.7	<0.005	0.001	0.25	<0.001	0.86	<0.0002
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	2330	8	<0.004	<0.004	44.9	36	11	-	139	152	20	7.33	3.55	89.2	3.98	<0.01	<1	195	<1	195	1340	28	40	16	710	0.12	1.3	0.85	0.9	-	0.05	2.2	0.04	0.001	0.001	0.076	<0.0001	<0.05	<0.0001
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	4190	<1	<0.004	<0.004	78.6	69.8	5.88	<2	39	211	20.3	5.49	6.324	167.3	0.86	<0.01	<1	296	<1	296	2420	69	103	20	1320	0.1	0.6	1.11	1.21	-	0.1	1.8	0.45	<0.001	<0.001	0.08	<0.001	0.06	0.0001
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	1390	20	<0.004	<0.004	23	20.7	5.24	-	13	404	19	7.3	1.422	37.7	2.37	<0.01	<1	550	<1	550	128	14	26	12	404	0.51	1.8	28.3	28.7	-	0.4	30.5	0.03	<0.001	<0.001	0.045	<0.0001	1.34	<0.0001
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	1570	13	<0.004	<0.004	22.6	23.1	1.13	<2	16	421	19.3	6.3	1.926	166.5	1.98	<0.01	<1	502	<1	502	136	22	38	12	428	0.84	2.5	29.8	30.1	-	0.34	32.6	0.08	<0.001	<0.001	0.062	<0.001	1.7	<0.0001

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
#3:Based on LTV investigation criteria for total nitrogen
#4:ADWG Guideline based on aesthetic considerations
#5:If the water has a very low buffering capacity, the pH range may be extended to 5.0 to 9.0 units (NHRMC 2008).
#6:ADWG Health based criteria multiplied by a factor of 10 (NHMRC 2008)
#7:Based on CrVI
#8:ADWG notes that a criterion for tin is not necessary given the low concentrations observed in water and the low toxicity of this metal.
#9:Based on Dutch Intervention Criteria for Mineral Oil
#10:US EPA Regional Screening Levels (RSL) revised November 2020. Criteria for Tap Water - MCL (TR=1E-05, THQ: 1.0)
#11:WHO 2020 Drinking Water Guideline
#12:Conservatively based on poultry tolerances (ANZG 2018)
#13:Based on PFAS NEMP for drinking water (HEPA 2020)
#14:NIWA (2013) Updating Nitrate Toxicity Effects on Freshwater Aquatic Species Grading Nitrate Concentration, 95% protection
#15:CCME (2007) Canadian Water Quality Guidelines for the Protection of Aquatic Life/Agriculture - Freshwater or Livestock criteria
#16:Based on ERS (2021) total N 75th percentile value for Lowlands of Yarra, South Gippsland, Bunyip, Latrobe, Thomson, Mitchell, Tambo and Snowy basins sub-segment of the freshwater environment.
#17:ANZG 2018 Low reliability trigger value - Indicative interim working level
#18:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value).
#19:Based on CrVI 95% level of species protection
#20:ANZG 2018 Low reliability trigger value (no level of species protection)
#21:ANZG 2018 - Low reliability trigger value for inorganic tin
#22:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value)
#23:ANZG 2018 Low reliability trigger value (slightly to moderately disturbed system)
#24:Estimated Acenaphthene threshold level in water Table 4.4.5, ANZECC 2000 Volume 1, Guidelines for chemical compounds in water found to cause tainting of fish flesh and other aquatic organisms
#25:ANZG 2018- 99% Level of protection due to potential for bioaccumulation
#26:ANZECC (2000). Low Reliability Trigger Levels
#27:Recommended DGV for application for slightly to moderately disturbed ecosystems
#28:US EPA (2003) Region 5 Ecological Screening Levels
#29:Based on values for 99% level of species protection provided by PFAS NEMP (HEPA 2020)
#30:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	Metals															TRH										TRH Speciation								
	Chromium (III+VI)	Cobalt	Copper	Iron	Chromium (hexavalent)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	TRH C6-C10 less BTEX (F1)	C10-C16	TRH>C10-C16 less Naphthalene (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	TRH C10-C36 (Total) (after silica gel clean-up)	TRH >C10-C16 Fraction after Silica Cleanup	TRH >C16-C34 Fraction after Silica Cleanup	TRH >C34-C40 Fraction after Silica Cleanup	Sum of TRH>C10-C40 after Silica Gel Cleanup
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.0002	0.0001	0.0005	0.002	0.001	0.0001	0.0005	0.00004	0.0001	0.0005	0.0002	0.0001	0.0002	0.0002	0.001	0.02	0.05	0.1	0.05	0.05	0.02	0.02	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.05	0.1	0.1	0.1	0.1
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra	0.001[#19]	0.0014[#20]	0.0014	0.3[#17]	0.001	0.0034	1.9	0.00006	0.034[#20]	0.011	0.005	0.00005	0.003[#21]	0.006[#17]	0.008					0.6[#22]															
21135 Irrigation LTV - ANZG 2018	0.1	0.05	0.2	0.2	0.1	2	0.2	0.002	0.01	0.2	0.02			0.1	2					0.6[#2]														
Irrigation STV - ANZG 2018	1	0.1	5	10	1	5	10	0.002	0.05	2	0.05			0.5	5																			
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008	0.5[#7]	0.06[#6]	1[#4]	0.3[#4]	0.5[#6]	0.1[#6]	0.1[#4]	0.01[#6]	0.5[#6]	0.2[#6]	0.1[#6]	1[#6]	[#8]	0.86[#6]	3[#4]	0.3[#2]				0.6[#9]							0.6[#9]								0.6[#9]
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)			1[#2]				0.1[#2]																											
21135 Stockwater - ANZG 2018	1	1	0.5		0.05	0.1		0.002	0.15	1	0.02				20					0.6[#9]							0.6[#9]							
Stockwater - ANZG 2018 (Aesthetic)																																		

Location	Field ID	Sampled Date	Lab Report No.	Sample Type																														
DP02B	DP02B	22/12/2021	EM2125901	Normal	<0.001	<0.001	0.016	0.07	0.001	<0.001	0.034	<0.0001	0.003	0.012	<0.01	<0.0001	<0.001	0.0013	0.045	<0.02	0.2	1.08	<0.05	1.28	<0.02	<0.02	0.61	0.61	0.68	<0.1	1.29	-	-	-	-	-	-	-	-
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	0.0004	0.0014	0.0459	0.062	0.002	0.002	0.0398	<0.00004	0.0043	0.0157	0.0032	<0.0001	<0.0002	0.001	0.279	<0.02	<0.05	0.63	0.07	0.7	<0.02	<0.02	0.22	0.22	0.49	<0.1	0.71	0.08	0.27	<0.05	0.35	0.15	0.19	<0.1	0.34
DP08	DP08	21/12/2021	EM2125876	Normal	<0.001	0.001	0.002	0.26	<0.001	<0.001	**0.196**	<0.0001	0.002	0.011	<0.01	<0.0001	<0.001	<0.0002	0.022	<0.02	<0.05	0.21	<0.05	0.21	<0.02	<0.02	<0.1	<0.1	0.19	<0.1	0.19	-	-	-	-	-	-	-	-
DP08	DP08	17/02/2022	EM2202680	Normal	0.0004	0.0015	0.0045	0.256	0.001	0.0002	**0.182**	<0.00004	0.0021	0.0133	0.0002	<0.0001	<0.0002	<0.0002	0.063	<0.02	<0.05	0.26	<0.05	0.26	<0.02	<0.02	<0.1	<0.1	0.25	<0.1	0.25	-	-	-	-	-	-	-	-
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	0.0004	0.0016	0.005	0.233	<0.001	0.0002	**0.184**	<0.00004	0.002	0.0132	0.0003	<0.0001	<0.0002	<0.0002	0.06	<0.02	0.05	0.37	<0.05	0.42	<0.02	<0.02	0.11	0.11	0.34	<0.1	0.45	<0.06	<0.12	<0.06	<0.06	<0.12	<0.12	<0.12	<0.12
DP08	DP208	17/02/2022	864761	Interlab_D	<0.001	0.002	0.006	0.22	<0.005	<0.001	**0.19**	<0.0001	<0.005	0.014	<0.001	<0.005	<0.005	<0.005	0.072	<0.02	0.08	0.2	<0.1	0.28	<0.02	<0.02	0.07	0.07	0.2	<0.1	0.27	-	-	-	-	-	-	-	-
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	<0.001	0.001	0.005	0.06	0.001	<0.001	**0.116**	<0.0001	0.013	0.007	<0.01	<0.0001	<0.001	0.0063	0.025	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	0.0008	0.0021	0.137	0.015	0.002	0.003	**0.123**	<0.00004	0.0142	0.0456	0.0011	<0.0001	<0.0002	0.0044	0.825	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	0.208	0.117	0.147	73	<0.001	0.148	**2.07**	<0.0001	0.024	0.169	0.02	<0.001 - 0.0003	<0.001	0.0638 - 0.07	0.765	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	0.247	0.135	0.172	86.6	0.001	0.169	**2.19**	<0.0001	0.052	0.2	0.03	<0.001 - 0.0003	0.001	0.0582 - 0.08	0.903	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	0.004	0.089	0.01	6.8	<0.005	0.004	**2.1**	<0.0001	0.007	0.039	0.004	<0.005	<0.005	<0.005	0.42	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	<0.001	<0.001	0.003	<0.05	0.002	<0.001	0.033	<0.0001	0.031	0.004	<0.01	<0.0001	<0.001	0.0105	0.016	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	0.001	0.002	0.25	0.08	<0.01	0.004	0.039	<0.0001	0.012	0.033	<0.01	0.001	<0.001	<0.01	0.964	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	<0.001	0.003	0.015	<0.05	0.001	<0.001	**0.394**	<0.0001	0.011	0.073	<0.01	<0.0001	<0.001	0.0006	0.263	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	<0.001	0.004	0.059	<0.05	<0.01	0.001	**0.445**	<0.0001	0.012	0.028	<0.01	<0.001	<0.001	<0.01	0.341	<0.02	<0.05	<0.1	<0.05	<0.05	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
#3:Based on LTV investigation criteria for total nitrogen
#4:ADWG Guideline based on aesthetic considerations
#5:If the water has a very low buffering capacity, the pH range may be extended to 5.0 to 9.0 units (NHRMC 2008).
#6:ADWG Health based criteria multiplied by a factor of 10 (NHMRC 2008)
#7:Based on CrVI
#8:ADWG notes that a criterion for tin is not necessary given the low concentrations observed in water and the low toxicity of this metal.
#9:Based on Dutch Intervention Criteria for Mineral Oil
#10:US EPA Regional Screening Levels (RSL) revised November 2020. Criteria for Tap Water - MCL (TR=1E-05, THQ: 1.0)
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#12:Conservatively based on poultry tolerances (ANZG 2018)
#13:Based on PFAS NEMP for drinking water (HEPA 2020)
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#15:CCME (2007) Canadian Water Quality Guidelines for the Protection of Aquatic Life/Agriculture - Freshwater or Livestock criteria
#16:Based on ERS (2021) total N 75th percentile value for Lowlands of Yarra, South Gippsland, Bunyip, Latrobe, Thomson, Mitchell, Tambo and Snowy basins sub-segment of the freshwater environment.
#17:ANZG 2018 Low reliability trigger value - Indicative interim working level
#18:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value).
#19:Based on CrVI 95% level of species protection
#20:ANZG 2018 Low reliability trigger value (no level of species protection)
#21:ANZG 2018 - Low reliability trigger value for inorganic tin
#22:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value)
#23:ANZG 2018 Low reliability trigger value (slightly to moderately disturbed system)
#24:Estimated Acenaphthene threshold level in water Table 4.4.5, ANZECC 2000 Volume 1, Guidelines for chemical compounds in water found to cause tainting of fish flesh and other aquatic organisms
#25:ANZG 2018- 99% Level of protection due to potential for bioaccumulation
#26:ANZECC (2000). Low Reliability Trigger Levels
#27:Recommended DGV for application for slightly to moderately disturbed ecosystems
#28:US EPA (2003) Region 5 Ecological Screening Levels
#29:Based on values for 99% level of species protection provided by PFAS NEMP (HEPA 2020)
#30:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	MAH							PAH																			Phenols Halogenated			
	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	BTEX (Sum)	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ calc (Zero)	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,3,4,5 & 2,3,4,6-Tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	Pentachlorophenol
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002	0.002	0.002	0.002
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra	0.95	0.18[#23]	0.08[#23]	0.075	0.35	0.075[#23]			0.02[#24]		0.00001[#25]		0.0001[#25]							0.001[#25]	0.003[#15]		0.016	0.0006[#25]					0.003	0.0036
21135 Irrigation LTV - ANZG 2018																					0.29[#2]		0.07[#2]							
Irrigation STV - ANZG 2018																														
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008	0.001	0.8	0.3	0.19[#2]	0.19[#2]	0.6			0.53[#2]		0.15[#2]		0.00001								0.29[#2]		0.07[#2]					0.02	0.01
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)		**0.025[#2]**	**0.003[#30]**			**0.02[#2]**																								
21135 Stockwater - ANZG 2018	0.001	0.8	0.3	0.19[#2]	0.19[#2]	0.6			0.53[#2]				0.00001								0.29[#2]		0.07[#2]					0.02	0.01
Stockwater - ANZG 2018 (Aesthetic)		0.025[#2]	0.003[#2]			0.02[#2]																						0.002[#2]	

Location	Field ID	Sampled Date	Lab Report No.	Sample Type																												
DP02B	DP02B	22/12/2021	EM2125901	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
DP08	DP08	21/12/2021	EM2125876	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
DP08	DP08	17/02/2022	EM2202680	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
DP08	DP208	17/02/2022	864761	Interlab_D	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.01	<0.01	<0.01
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.01	<0.01	<0.01
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.002	<0.002	<0.002

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
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Project: 21135
Client: Time Place
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Table 1 - Groundwater Results

	Phenols Halogenated							Phenols Non-Halogenated											Halogenated Vol. Organics																											
	2,3,5,6-Tetrachlorophenol	Tetrachlorophenols	2,4-dichlorophenol	2-chlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1,1-trichloroethane	1,1,1-trichloroethene	1,1-dichloropropene	1,1,1,2-tetrachloroethane	1,2-dibromoethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane	1,2-dichloropropane	1,1,2-trichloroethane	4-chlorotoluene	1,1-dichloroethane	2,2-dichloropropane	Bromodichloromethane	Bromoform	2-chlorotoluene	1,2-dibromo-3-chloropropane	Bromomethane	Carbon tetrachloride
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.002	0.03	0.002	0.002	0.002	0.004	0.002	0.004	0.004	0.004	0.05	0.05	0.1	0.004	0.004	0.004	0.05	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra			0.12	0.34									0.045	0.32	0.002[#26]					0.7				1.9			6.5													0.24
21135 Irrigation LTV - ANZG 2018															0.36[#2]																										
Irrigation STV - ANZG 2018																																									
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008			0.2	0.3										0.15[#2]	0.36[#2]					0.03			0.001	0.003			0.005[#10]								0.001	0.003
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)																																									
21135 Stockwater - ANZG 2018			0.2	0.3																0.03			0.001	0.003			0.005[#10]								0.001	0.003
Stockwater - ANZG 2018 (Aesthetic)																																									
DP02B	DP02B	22/12/2021	EM2125901	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
DP08	DP08	21/12/2021	EM2125876	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
DP08	DP08	17/02/2022	EM2202680	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
DP08	DP208	17/02/2022	864761	Interlab_D	-	<0.03	<0.003	<0.003	<0.003	<0.01	<0.01	<0.003	<0.006	<0.01	<0.03	<0.1	<0.03	<0.003	<0.003	<0.01	<0.03	<0.1	<0.001	<0.001	-	<0.001	<0.001	<0.00001	<0.001	<0.001	<0.001	-	<0.00001	-	<0.001	<0.001	-	-	<0.005	<0.001
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.01	<0.001
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	-	<0.03	<0.003	<0.003	<0.003	<0.01	<0.01	<0.003	<0.006	<0.01	<0.03	<0.1	<0.03	<0.003	<0.003	<0.01	<0.03	<0.1	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	-	-	<0.005	<0.001
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	<0.001	<0.001	<0.01	<0.001
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.01	<0.001
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	<0.002	-	<0.002	<0.002	<0.002	<0.004	<0.002	<0.004	<0.004	<0.004	<0.05	<0.05	<0.1	<0.004	<0.004	<0.004	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
#3:Based on LTV investigation criteria for total nitrogen
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#6:ADWG Health based criteria multiplied by a factor of 10 (NHMRC 2008)
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#15:CCME (2007) Canadian Water Quality Guidelines for the Protection of Aquatic Life/Agriculture - Freshwater or Livestock criteria
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#20:ANZG 2018 Low reliability trigger value (no level of species protection)
#21:ANZG 2018 - Low reliability trigger value for inorganic tin
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#26:ANZECC (2000). Low Reliability Trigger Levels
#27:Recommended DGV for application for slightly to moderately disturbed ecosystems
#28:US EPA (2003) Region 5 Ecological Screening Levels
#29:Based on values for 99% level of species protection provided by PFAS NEMP (HEPA 2020)
#30:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	HVOLs																		Chlorinated Hydrocarbons																	
	1,2,3-trichloropropane	Bromobenzene	1,3-dichloropropane	Bromochloromethane	Chlorobenzene	Chlorodibromomethane	Chloroform	cis-1,2-dichloroethene	trans-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	trans-1,3-dichloropropene	Dichloromethane	Iodomethane	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	trans-1,4-Dichloro-2-butene	1,2,3,4-tetrachlorobenzene	1,3-dichlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Benzyl chloride	Benzotrichloride	1,2,3,5-Tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3,5-Trichlorobenzene	1,4-dichlorobenzene	Benzal Chloride	Chloromethane
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.01	0.0002	0.001	0.005	0.001	0.005	0.005	0.005	0.0001	0.005	0.005	0.005	0.005	0.001	0.005	0.00001	0.0001	0.01
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra					0.055[#23]		0.37[#27]						4		0.07[#23]	0.33[#23]		0.1[#23]			0.26		0.29				0.003		0.085	0.16		0.06		
21135 Irrigation LTV - ANZG 2018																																			
Irrigation STV - ANZG 2018																																			
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008					0.3		0.25	0.06	0.06				0.004		0.05	0.008[#11]		0.0003			0.02										1.5		0.04		
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)					**0.01[#2]**																										**0.001[#2]**		**0.0003[#2]**		
21135 Stockwater - ANZG 2018					0.3		0.25	0.06	0.06				0.004		0.05	0.008[#11]		0.0003			0.02										1.5		0.04		
Stockwater - ANZG 2018 (Aesthetic)					0.01[#2]																										0.001[#2]		0.0003[#2]		
DP02B	DP02B	22/12/2021	EM2125901	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
DP08	DP08	21/12/2021	EM2125876	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
DP08	DP08	17/02/2022	EM2202680	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
DP08	DP208	17/02/2022	864761	Interlab_D	<0.001	-	<0.001	-	<0.00001	<0.001	<0.005	<0.00001	<0.001	<0.001	<0.001	<0.001	<0.00002	<0.001	<0.00002	<0.00001	<0.005	<0.00005	-	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.00001	<0.0001	<0.005
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	<0.001	-	<0.001	-	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005	<0.005	-	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.0001	<0.005
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.013	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	-	<0.001	<0.001	<0.01	<0.0002	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
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compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	CHCs			Herbicides		Alcohols	Solvents						Carboxylic Acids					Other				PFAS										
	Hexachlorobenzene	Hexachlorobutadiene	Pentachlorobenzene	2,4,5-Trichlorophenoxy-propanoic acid	Dinoseb	2-Propanol	2-Ethyl Hexyl Acrylate	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Hexane	Methyl Ethyl Ketone	Acetic Acid	Butyric Acid	Hexanoic Acid	Valeric Acid	Heptanoic Acid	4-Methylvaleric acid	Isobutyric acid	Isovaleric acid	Volatile Fatty Acids (as Acetic Acid)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	MG/L	MG/L	MG/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.005	0.005	0.005	5	0.05	0.01	0.01	0.01	0.01	0.01	0.05	0.01	5	5	5	5	5	5	5	5	5	0.000005	0.000005	0.000005	0.000005	0.000005	0.000002	0.000005	0.000005	0.000002	0.000005	0.000002	0.00001
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra				0.036								2.2[#28]																				
21135 Irrigation LTV - ANZG 2018				0.5[#2]																													
Irrigation STV - ANZG 2018																																	
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008		0.0007		0.1[#2]								5.6[#2]																					
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)																																	
21135 Stockwater - ANZG 2018		0.0007		0.1[#2]								5.6[#2]																					
Stockwater - ANZG 2018 (Aesthetic)																																	

Location	Field ID	Sampled Date	Lab Report No.	Sample Type																													
DP02B	DP02B	22/12/2021	EM2125901	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	59	<0.000005	<0.000005	0.000017	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.000007	<0.00001
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	84	<0.000005	<0.000005	0.000056	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.000012	<0.00001
DP08	DP08	21/12/2021	EM2125876	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	40	<0.000005	<0.000005	0.000016	<0.000005	<0.000009	<0.000004	<0.000009	<0.000009	<0.000004	<0.000009	0.000038	0.00006
DP08	DP08	17/02/2022	EM2202680	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	90	<0.000005	<0.000005	0.000015	<0.000005	<0.000005	0.000008	<0.000005	<0.000005	0.000002	<0.000005	0.000074	0.00023
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	78	<0.000005	<0.000005	0.000016	<0.000005	<0.000005	0.000009	<0.000005	<0.000005	0.000002	<0.000005	0.000058	0.00023
DP08	DP208	17/02/2022	864761	Interlab_D	<0.005	<0.005	<0.005	<5	<0.1	<0.05	<0.1	<0.005	<0.005	<1.25	<0.05	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.000001	<0.000001	<0.00005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	0.000043	0.00024
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	26	<0.000005	<0.000005	0.000014	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.00002	0.00003
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	30	<0.000005	<0.000005	0.000006	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.00004	0.00007
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	-	-	-	-	<0.05	0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	26	<0.000005	<0.000005	<0.00001	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.000015	0.00002
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	58	<0.000005	<0.000005	<0.00001	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	0.000015	0.00002
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	<0.005	<0.005	<0.005	<5	<0.1	<0.05	<0.1	<0.005	0.009	<1.25	<0.05	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.000001	<0.000001	0.00001	<0.000001	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	0.000017	0.000017
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	30	<0.000005	<0.000005	0.000061	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	<0.000002	<0.00001
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	66	<0.000005	<0.000005	0.000009	<0.000005	<0.000005	<0.000002	<0.000005	<0.000005	<0.000002	<0.000005	<0.000002	<0.00001
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	43	<0.000005	<0.000005	0.000014	<0.000005	<0.000005	0.000004	<0.000005	<0.000005	<0.000002	<0.000005	0.000128	0.00003
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	-	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	71	<0.000005	<0.000005	0.00003	0.000006	<0.000005	0.000012	<0.000005	<0.000005	<0.000002	<0.000005	0.000138	0.00001

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
#3:Based on LTV investigation criteria for total nitrogen
#4:ADWG Guideline based on aesthetic considerations
#5:If the water has a very low buffering capacity, the pH range may be extended to 5.0 to 9.0 units (NHRMC 2008).
#6:ADWG Health based criteria multiplied by a factor of 10 (NHMRC 2008)
#7:Based on CrVI
#8:ADWG notes that a criterion for tin is not necessary given the low concentrations observed in water and the low toxicity of this metal.
#9:Based on Dutch Intervention Criteria for Mineral Oil
#10:US EPA Regional Screening Levels (RSL) revised November 2020. Criteria for Tap Water - MCL (TR=1E-05, THQ: 1.0)
#11:WHO 2020 Drinking Water Guideline
#12:Conservatively based on poultry tolerances (ANZG 2018)
#13:Based on PFAS NEMP for drinking water (HEPA 2020)
#14:NIWA (2013) Updating Nitrate Toxicity Effects on Freshwater Aquatic Species Grading Nitrate Concentration, 95% protection
#15:CCME (2007) Canadian Water Quality Guidelines for the Protection of Aquatic Life/Agriculture - Freshwater or Livestock criteria
#16:Based on ERS (2021) total N 75th percentile value for Lowlands of Yarra, South Gippsland, Bunyip, Latrobe, Thomson, Mitchell, Tambo and Snowy basins sub-segment of the freshwater environment.
#17:ANZG 2018 Low reliability trigger value - Indicative interim working level
#18:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value).
#19:Based on CrVI 95% level of species protection
#20:ANZG 2018 Low reliability trigger value (no level of species protection)
#21:ANZG 2018 - Low reliability trigger value for inorganic tin
#22:Netherlands (2009) Circular on Target Values and Intervention Values for Soil Remediation. Ministry of Housing, Spatial Planning and the Environment, Netherlands Government (Groundwater Intervention Value)
#23:ANZG 2018 Low reliability trigger value (slightly to moderately disturbed system)
#24:Estimated Acenaphthene threshold level in water Table 4.4.5, ANZECC 2000 Volume 1, Guidelines for chemical compounds in water found to cause tainting of fish flesh and other aquatic organisms
#25:ANZG 2018- 99% Level of protection due to potential for bioaccumulation
#26:ANZECC (2000). Low Reliability Trigger Levels
#27:Recommended DGV for application for slightly to moderately disturbed ecosystems
#28:US EPA (2003) Region 5 Ecological Screening Levels
#29:Based on values for 99% level of species protection provided by PFAS NEMP (HEPA 2020)
#30:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Groundwater Results

	PFAS																							
	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of PFASs	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of WA DWER PFAS (n=10)*	Perfluorononanesulfonic acid (PFNS)(trace)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000005	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000001	0.000005	0.000002	0.000002	0.000001	0.000002	0.000002	0.000001	0.000002	0.000001
21135 WDES ANZG 2018 FW Slightly to Moderately Disturbed Ecosystems - Yarra											0.00000023[#29]	0.019[#29]													
21135 Irrigation LTV - ANZG 2018																									
Irrigation STV - ANZG 2018																									
21135 PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008												0.01[#2]										0.002[#2]			
PCR - ADWG 2011 (revised 2022) amended as per NHMRC 2008 (Aesthetic)																									
21135 Stockwater - ANZG 2018												0.00056[#13]										0.00007[#13]			
Stockwater - ANZG 2018 (Aesthetic)																									
DP02B	DP02B	22/12/2021	EM2125901	Normal	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	0.000003	0.000003	<0.000005	<0.000002	<0.000002	0.000026	0.000008	<0.000002	<0.000002	-	<0.000005	<0.000002	<0.000002	-	0.000064	0.000029	-	0.000064	-
DP02B	DP02B	17/02/2022	EM2202680, EM2204262	Normal	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.000002	<0.000002	0.000043	0.000014	<0.000002	<0.000002	-	<0.000005	<0.000002	<0.000002	-	0.000125	0.000043	-	0.000125	-
DP08	DP08	21/12/2021	EM2125876	Normal	<0.000004	<0.000004	<0.000004	0.000004	0.00006	0.000127	0.000122	<0.000009	0.000021	<0.000004	0.000125	0.000231	0.000022	0.000132	-	<0.000009	<0.000004	<0.000004	-	0.000958	0.000252	-	0.000911	-
DP08	DP08	17/02/2022	EM2202680	Normal	<0.000002	0.000002	<0.000002	0.000008	0.000101	0.000181	0.000209	<0.000005	0.000028	0.000002	0.00017	0.000351	0.000039	0.000181	-	<0.000005	<0.000002	<0.000002	-	0.0016	0.000351	-	0.00151	-
DP08	DP170222	17/02/2022	EM2202680, EM2204262	Field_D	<0.000002	<0.000002	<0.000002	0.000006	0.000092	0.000189	0.000211	<0.000005	0.000028	0.000002	0.000178	0.00035	0.000038	0.0002	-	<0.000005	<0.000002	<0.000002	-	0.00161	0.000367	-	0.00152	-
DP08	DP208	17/02/2022	864761	Interlab_D	<0.000001	0.000002	<0.000001	0.000009	0.00011	0.00022	0.00021	-	0.000021	<0.000005	0.00022	0.00034	0.000031	0.00021	0.000015	<0.000001	<0.000001	<0.000001	0.00078	0.001671	0.00044	0.00056	0.001593	<0.000001
FSG-BH01	FSG-BH1	21/12/2021	EM2125876	Normal	<0.000002	<0.000002	<0.000002	<0.000002	0.00003	0.000041	0.000121	<0.000005	<0.000002	<0.000002	0.000022	0.000072	0.000015	0.000113	-	<0.000005	<0.000002	<0.000002	-	0.000478	0.000063	-	0.000463	-
FSG-BH01	FSGBH1	17/02/2022	EM2202680	Normal	<0.000002	<0.000002	<0.000002	0.000002	0.000056	0.000081	0.000265	<0.000005	0.000002	<0.000002	0.000036	0.000166	0.000024	0.000256	-	<0.000005	<0.000002	<0.000002	-	0.001	0.000117	-	0.000976	-
FSG-BH03	FSG-BH3	22/12/2021	EM2125901	Normal	<0.000002	0.000002	<0.000002	0.000003	0.000014	0.00007	0.000038	<0.000005	0.000035	<0.000002	0.000064	0.00003	0.000012	0.000037	-	<0.000005	<0.000002	<0.000002	-	0.00034	0.000134	-	0.000288	-
FSG-BH03	FSG-BH221221	22/12/2021	EM2125901	Field_D	<0.000002	0.000003	<0.000002	0.000003	0.000014	0.000073	0.000037	<0.000005	0.000035	<0.000002	0.000066	0.00003	0.000012	0.000037	-	<0.000005	<0.000002	<0.000002	-	0.000345	0.000139	-	0.000292	-
FSG-BH03	FS6-BH203	22/12/2021	852931	Interlab_D	<0.000001	0.000003	<0.000001	0.000004	0.000016	0.000098	0.000041	-	0.000034	<0.000005	0.000098	0.000035	0.000015	0.000036	0.000009	<0.000001	<0.000001	<0.000001	0.000231	0.000433	0.000196	0.000133	0.000368	<0.000001
FSG-BH05	FSG-BH5	21/12/2021	EM2125778	Normal	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	0.000006	<0.000005	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	-	<0.000005	<0.000002	<0.000002	-	0.000067	<0.000002	-	0.000067	-
FSG-BH05	FSG-BH5	18/02/2022	EM2202683	Normal	<0.000002	<0.000002	<0.000002	<0.000002	0.000003	<0.000002	0.000022	<0.000005	<0.000002	<0.000002	<0.000002	<0.000002	0.000002	0.000021	-	<0.000005	<0.000002	<0.000002	-	0.000055	<0.000002	-	0.000055	-
FSG-BH09	FSG-BH9	23/12/2021	EM2125901	Normal	<0.000002	<0.000002	<0.000002	0.000017	0.000021	0.000332	0.000095	<0.000005	<0.000002	<0.000002	0.000083	0.000039	0.000108	0.000038	-	<0.000005	<0.000002	<0.000002	-	0.000909	0.000415	-	0.00078	-
FSG-BH09	FSG-BH9	18/02/2022	EM2202683	Normal	<0.000002	<0.000002	<0.000002	0.000022	0.000022	0.000383	0.000106	<0.000005	<0.000002	<0.000002	0.000138	0.000063	0.000103	0.000044	-	<0.000005	<0.000002	<0.000002	-	0.00108	0.000521	-	0.00094	-

Env Stds Comments

#1:Based on pH range to limit corrosion and fouling of pumping, irrigation and stock watering systems for groundwater (ANZECC 2000).
#2:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW
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#30:Based on auditor provided criteria, Peraco Assessment Criteria 95% FW

ATTACHMENT J

Compass Soil Laboratory Reports

COC received at ALS

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135 - 11165

Project Number:	21135
Project Location:	Northcote
Project Manager:	SH
Contact:	Laboratory@compassenviro.com.au Compassenviro@esdat.com.au
Laboratory:	ALS Springvale
Address:	4 Westall Road, Springvale
Phone No:	8549 9600 Fax: 8549 9626
Lab Quote Number:	MEBQ-266-18

Turnaround Time: 1 day | 2 days | 3 days | ✓ 5 days

	Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS - 28	pH CaCl2	Sulphate
1	TP1/0.3		11/03/22		Soil 1	ICE	1			✓	✓		✓	✓
2	TP1/0.3 PFAS		11/03/22		Soil	NA	1							
3	TP1/0.5		11/03/22				1							
4	TP1/0.5 PFAS		11/03/22				1							
5	TP1/1.0		11/03/22				1							
6	TP1/1.0 PFAS		11/03/22				1							
7	TP1/2.0		11/03/22				1							
8	TP1/2.0 PFAS		11/03/22				1					✓		
9	TP1/3.0		11/03/22				1			✓	✓		✓	✓
10	TP1/3.0 PFAS		11/03/22				1							
11	TP2/0.3 2		11/03/22				1							
12	TP2/0.3 2 PFAS		11/03/22				1							
13	TP2/0.5		11/03/22				1							
14	TP2/0.5 PFAS		11/03/22				1							
15	TP2/1.0		11/03/22				1	✓						
16	TP2/1.0 PFAS		11/03/22		↓	↓	1							

Environmental Division
Melbourne
Work Order Reference
EM2204517

Telephone : +61-3-8549 9600

Analysis comments: Metal screen. Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
pH as $CaCl_2$

* KEY — Preservative: 1 = NaOH, 2 = HNO3, 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None, 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	John Perks	Received by:	
Signature:		Signature:	
Company:	COMPASS	Company:	
Date/time:	15/3/22	Date/time:	

Relinquished by:		Received by:	
Signature:		Signature:	
Company:		Company:	
Date/time:		Date/time:	15/3, 0030

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11165

Project Number: 21135			Laboratory: ALS Springvale			Turnaround Time:		1 day		2 days		3 days		5 days											
Project Location: Northvale			Address: 4 Westall Road, Springvale					Analysis Requested																	
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9626																						
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-18																						
	Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS - 28	pH CaCl2	Sulphide	TRH										
17	TP2/2.0		11/03/22		1	ICE	1																		
18	TP2/2.0 PFAS		11/03/22		↓	↓	1																		
19	TP2/3.0		11/03/22		↓	↓	2			✓	✓														
20	TP2/3.0 PFAS		11/03/22		↓	↓	1					✓													
21	TP110322A		11/03/22		↓	↓	1			✓	✓														
22	TB110322		11/03/22		2	↓	5								✓										

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
pH as $CaCl_2$

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil, 2 = Water; 3 = Product, 4 = Waste Water; 5 = Other

Relinquished by: John Perks	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: COMPASS	Company:	Company:	Company:
Date/time: 15/3/22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2204517**	Page	: 1 of 23
Amendment	: **1**		
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 15-Mar-2022 10:50
Order number	: ----	Date Analysis Commenced	: 16-Mar-2022
C-O-C number	: ----	Issue Date	: 28-Mar-2022 18:10
Sampler	: SH		
Site	: NORTHCOTE		
Quote number	: MEBQ/266/21		
No. of samples received	: 22		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP074-UT: Particular sample (EM2204517_015), shows poor matrix spike recovery due to the sample matrix interference. Confirmed by re-analysis.
- EG048G: EM2204276 #12 poor matrix spike recovery for hexavalent chromium due to matrix effects. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EP231X: Poor matrix spike recovery for sample EM2204243-020 due to sample matrix interference.
- (28/03/2022): This report has being amended following the request to remove P-30/3 from samples 001, 009, 019, 020.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	9.2	----	8.0	----	8.0
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	16.5	----	14.6	13.2
Moisture Content	----	1.0	%	20.4	----	16.8	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	300	----	<100	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	6	----	<5	----	<5
Barium	7440-39-3	10	mg/kg	130	----	60	----	80
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	<1
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	<1
Cobalt	7440-48-4	2	mg/kg	7	----	6	----	----
Copper	7440-50-8	5	mg/kg	----	----	----	----	18
Lead	7439-92-1	5	mg/kg	17	----	15	----	26
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg	20	----	18	----	20
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	<5
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	<2
Tin	7440-31-5	5	mg/kg	----	----	----	----	<5
Zinc	7440-66-6	5	mg/kg	34	----	62	----	64
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	----	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	----	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	----	----	310
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	----	----	<2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	----	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	----	<0.02

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	----	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		----	----	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		----	----	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	----	----	<5
Dinoseb	88-85-7	5	mg/kg		----	----	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	----	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	----	<0.5
EP075E: Nitroaromatics and Ketones									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Nitrobenzene	98-95-3	0.5	mg/kg	----	----	----	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	----	----	----	<1.0
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	----	----	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	----	----	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	----	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	----	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	**0.0010**	----	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	**0.0005**	----	**0.0015**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	**0.0004**	----	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0019**	----	**0.0015**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0015**	----	**0.0015**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0019**	----	**0.0015**	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**102**
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	----	**113**
Toluene-D8	2037-26-5	0.1	%		----	----	----	----	**107**
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	----	**121**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**104**	----	**102**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**93.4**	----	**92.3**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**70.4**	----	**70.5**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		104	----	102	----	----
Anthracene-d10	1719-06-8	0.5	%		113	----	118	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		110	----	107	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	----	86.5
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	----	81.2
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	----	74.1
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	----	83.2
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	----	78.6
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	----	96.8
Anthracene-d10	1719-06-8	0.025	%		----	----	----	----	93.5
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	----	84.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.7	----	91.6	----	----
Toluene-D8	2037-26-5	0.2	%		79.8	----	81.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		83.8	----	85.4	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	83.8	----	102	----
13C8-PFOA	----	0.0002	%		----	102	----	107	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
				Result	Result	Result	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	**9.2**	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	**15.7**	----	----	----
Moisture Content	----	1.0	%	**17.4**	----	**18.8**	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	----
Arsenic	7440-38-2	5	mg/kg	**6**	----	**6**	----	----
Barium	7440-39-3	10	mg/kg	**150**	----	**80**	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Cobalt	7440-48-4	2	mg/kg	**6**	----	**13**	----	----
Lead	7439-92-1	5	mg/kg	**28**	----	**12**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	----
Nickel	7440-02-0	2	mg/kg	**23**	----	**50**	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	----
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	----
Zinc	7440-66-6	5	mg/kg	**54**	----	**43**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	**300**	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	<2	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		----	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		----	----	<0.5	----	----
EP074B: Oxygenated Compounds									
2-Butanone (MEK)	78-93-3	1	mg/kg		----	----	<1	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		----	----	<0.02	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg		----	----	<0.01	----	----
Methylene chloride	75-09-2	0.4	mg/kg		----	----	<0.4	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		----	----	<0.02	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		----	----	<0.01	----	----
Chloroform	67-66-3	0.02	mg/kg		----	----	<0.02	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		----	----	<0.01	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		----	----	<0.01	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg		----	----	<0.02	----	----
Trichloroethene	79-01-6	0.02	mg/kg		----	----	<0.02	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		----	----	<0.04	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		----	----	<0.01	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg		----	----	<0.02	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		----	----	<0.02	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	----	<0.02	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		----	----	<0.02	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	<0.02	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	<0.02	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	<0.01	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP074I: Volatile Halogenated Compounds - Continued									
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	<0.01	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	<0.01	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	<0.03	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	<0.03	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	<0.05	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	<0.05	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	----	<1	----	----
2-Methylphenol	95-48-7	1	mg/kg		----	----	<1	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	----
2-Nitrophenol	88-75-5	1	mg/kg		----	----	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	<1	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	<5	----	----
4-Nitrophenol	100-02-7	5	mg/kg		----	----	<5	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	<5	----	----
Dinoseb	88-85-7	5	mg/kg		----	----	<5	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	<5	----	----
^ Cresols (Total)	----	1	mg/kg		----	----	<1	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	**1.2**	----	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	<0.5	----	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	<0.5	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	<1.0	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
				Result	Result	Result	----	----
EP075l: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	<0.03	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	<0.03	----	----
beta-BHC	319-85-7	0.03	mg/kg	----	----	<0.03	----	----
gamma-BHC	58-89-9	0.03	mg/kg	----	----	<0.03	----	----
delta-BHC	319-86-8	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor	76-44-8	0.03	mg/kg	----	----	<0.03	----	----
Aldrin	309-00-2	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	<0.03	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	<0.03	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.03	mg/kg	----	----	<0.03	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	<0.03	----	----
Endrin	72-20-8	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
^ Chlordane	57-74-9	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	<50	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	<10	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	**0.0003**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	**0.0009**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	**0.0005**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0017**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0012**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0017**	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	<0.001	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	<0.01	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**97.3**	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	**85.0**	----	----
Toluene-D8	2037-26-5	0.1	%		----	----	**80.4**	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	**82.7**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**104**	----	**104**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**93.5**	----	**93.2**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**72.9**	----	**70.1**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**104**	----	**103**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		113	----	115	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		110	----	110	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	86.2	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	81.3	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	76.3	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	84.4	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	80.2	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	97.2	----	----
Anthracene-d10	1719-06-8	0.025	%		----	----	87.9	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	91.9	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.6	----	84.6	----	----
Toluene-D8	2037-26-5	0.2	%		80.0	----	78.6	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		84.3	----	83.4	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	107	----	----	----
13C8-PFOA	----	0.0002	%		----	97.6	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB110322	----	----	----	----
				Sampling date / time	11-Mar-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2204517-022	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**91.9**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**97.3**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11166

Project Number: 21135	Eurofins
Project Location: Northcote	Address: 6 Monterey Road, Dandenong So
Project Manager: SH	Phone No: 8564 5000 Fax: 9564 7190
Contact: laboratory@compassenviro.com.au	Lab Quote Number:

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: EPA Screen Table 2	Metal screen (see below)	13+	Comments
TP201 0.3		11/03/22		1	ICE	1		✓	✓	

Cooler: Yes / No

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
Report Sulphate as SO4

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: John Perks	Received by: CANH	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: COMPASS	Company: Eurofins	Company:	Company:
Date/time: 15/3/22	Date/time 15/3/22-4.25pm	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Page 1 of 1

COCform Rev.5 11 August 2009

871386

S:\Administration\6. Templates\1. Administration Forms\COCs\COCFORM EUROFINS SOIL.xls

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11166

| | | |

Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL RESULTS, SRA & COC**

Report **871386-S**
Project name NORTHCOTE
Project ID 21135
Received Date Mar 15, 2022

Client Sample ID			**TP201/0.3**
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Ma30008**
Date Sampled			**Mar 11, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			TP201/0.3
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Ma30008**
Date Sampled			**Mar 11, 2022**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	142
p-Terphenyl-d14 (surr.)	1	%	65
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	6.7
Barium	10	mg/kg	170
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 10
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	27
Cobalt	5	mg/kg	17
Copper	5	mg/kg	28
Lead	5	mg/kg	25
Manganese	5	mg/kg	300
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	63
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Vanadium	10	mg/kg	40
Zinc	5	mg/kg	62
% Moisture	1	%	16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Melbourne	Mar 18, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Mar 15, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
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46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

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35 O'Rorke Road
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IANZ # 1327

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43 Detroit Drive
Rolleston, Christchurch 7675
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IANZ # 1290

Company Name: Compass Environmental P/L
Address: Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

Project Name: NORTHCOTE
Project ID: 21135

Order No.:
Report #: 871386
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Mar 15, 2022 4:25 PM
Due: Mar 22, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																										
Brisbane Laboratory - NATA # 1261 Site # 20794																										
Mayfield Laboratory - NATA # 1261 Site # 25079																										
Perth Laboratory - NATA # 2377 Site # 2370																										
External Laboratory																										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																					
1	TP201/0.3	Mar 11, 2022		Soil	M22-Ma30008	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	120			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	86			70-130	Pass	
Toluene	%	87			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	79			70-130	Pass	
Xylenes - Total*	%	79			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	87			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	88			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	79			70-130	Pass	
Chrysene	%	78			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	75			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	92			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	102			80-120	Pass	
Arsenic	%	100			80-120	Pass	
Barium	%	104			80-120	Pass	
Beryllium	%	109			80-120	Pass	
Boron	%	108			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	102			80-120	Pass	
Cobalt	%	104			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	111			80-120	Pass	
Manganese	%	101			80-120	Pass	
Mercury	%	104			80-120	Pass	
Molybdenum	%	101			80-120	Pass	
Nickel	%	99			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	102			80-120	Pass	
Silver			%	104			80-120	Pass	
Tin			%	102			80-120	Pass	
Vanadium			%	100			80-120	Pass	
Zinc			%	102			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-Ma24855	NCP	%	93			70-130	Pass	
TRH C10-C14	M22-Ma23540	NCP	%	129			70-130	Pass	
Naphthalene	M22-Ma24855	NCP	%	112			70-130	Pass	
TRH C6-C10	M22-Ma24855	NCP	%	89			70-130	Pass	
TRH >C10-C16	M22-Ma23540	NCP	%	124			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-Ma24855	NCP	%	94			70-130	Pass	
Toluene	M22-Ma24855	NCP	%	93			70-130	Pass	
Ethylbenzene	M22-Ma24855	NCP	%	88			70-130	Pass	
m&p-Xylenes	M22-Ma24855	NCP	%	83			70-130	Pass	
o-Xylene	M22-Ma24855	NCP	%	84			70-130	Pass	
Xylenes - Total*	M22-Ma24855	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ma23540	NCP	%	79			70-130	Pass	
Acenaphthylene	M22-Ma23540	NCP	%	79			70-130	Pass	
Anthracene	M22-Ma23540	NCP	%	71			70-130	Pass	
Benz(a)anthracene	M22-Ma23540	NCP	%	87			70-130	Pass	
Benzo(a)pyrene	M22-Ma23540	NCP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ma23540	NCP	%	76			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ma23540	NCP	%	71			70-130	Pass	
Benzo(k)fluoranthene	M22-Ma23540	NCP	%	103			70-130	Pass	
Chrysene	M22-Ma23540	NCP	%	73			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ma23540	NCP	%	103			70-130	Pass	
Fluoranthene	M22-Ma23540	NCP	%	93			70-130	Pass	
Fluorene	M22-Ma23540	NCP	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ma23540	NCP	%	106			70-130	Pass	
Naphthalene	M22-Ma23540	NCP	%	71			70-130	Pass	
Phenanthrene	M22-Ma23540	NCP	%	96			70-130	Pass	
Pyrene	M22-Ma23540	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	M22-Ma32315	NCP	%	106			75-125	Pass	
Arsenic	M22-Ma32315	NCP	%	102			75-125	Pass	
Barium	M22-Ma38742	NCP	%	121			75-125	Pass	
Beryllium	M22-Ma32315	NCP	%	93			75-125	Pass	
Boron	M22-Ma32315	NCP	%	96			75-125	Pass	
Cadmium	M22-Ma32315	NCP	%	109			75-125	Pass	
Chromium	M22-Ma32315	NCP	%	105			75-125	Pass	
Cobalt	M22-Ma32315	NCP	%	106			75-125	Pass	
Copper	M22-Ma32315	NCP	%	107			75-125	Pass	
Lead	M22-Ma32315	NCP	%	121			75-125	Pass	
Manganese	M22-Ma38742	NCP	%	101			75-125	Pass	
Mercury	M22-Ma32315	NCP	%	114			75-125	Pass	
Molybdenum	M22-Ma32315	NCP	%	110			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	M22-Ma32315	NCP	%	105			75-125	Pass	
Selenium	M22-Ma32315	NCP	%	101			75-125	Pass	
Silver	M22-Ma32315	NCP	%	114			75-125	Pass	
Tin	M22-Ma32315	NCP	%	110			75-125	Pass	
Vanadium	M22-Ma32315	NCP	%	115			75-125	Pass	
Zinc	M22-Ma32315	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Ma31673	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M22-Ma23539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	M22-Ma31673	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M22-Ma31673	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Ma23539	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M22-Ma23539	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M22-Ma31673	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M22-Ma31673	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	M22-Ma32315	NCP	mg/kg	6.1	6.3	3.0	30%	Pass	
Barium	M22-Ma32315	NCP	mg/kg	130	140	3.0	30%	Pass	
Beryllium	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	M22-Ma32315	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M22-Ma32315	NCP	mg/kg	37	38	1.0	30%	Pass	
Cobalt	M22-Ma32315	NCP	mg/kg	19	19	3.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Copper	M22-Ma32315	NCP	mg/kg	28	28	1.0	30%	Pass	
Lead	M22-Ma32315	NCP	mg/kg	16	17	2.0	30%	Pass	
Manganese	M22-Ma32315	NCP	mg/kg	510	520	1.0	30%	Pass	
Mercury	M22-Ma32315	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M22-Ma32315	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M22-Ma32315	NCP	mg/kg	47	48	3.0	30%	Pass	
Selenium	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	M22-Ma32315	NCP	mg/kg	36	36	<1	30%	Pass	
Zinc	M22-Ma32315	NCP	mg/kg	85	87	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ma29932	NCP	%	11	11	4.0	30%	Pass	

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Catherine Wilson	Analytical Services Manager
Vivian Wang	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

ATTACHMENT K

Compass Groundwater Laboratory Reports

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135 – 11080

Project Number:	21135
Project Location:	North Gate
Project Manager:	SH
Contact: laboratory@compassenviro.com.au compassenviro@esdal.com.au	

Laboratory:	ALS Springvale
Address:	4 Westall Road, Springvale
Phone No:	8549 9600 Fax: 8549 9626
Lab Quote Number:	MEBQ-266-18

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ Standard

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	major anions and cations*	Metal screen (Compass 21 metals, see below)	Compass Water 2	Cr6+	Total + Free cyanide	Phenols *	Compass Solvents	PFAS 28 (per lead)	Dissolved CHC	TOC	COD	Volatile Fatty Acids	Alkalinity	TRH / BTEXN + Compass HVOCs
FSG-BH5	1	21.12.21	20/12/21 BD 22/12	2	ICE	18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RIN 201221	2	↓	↓	↓	↓	16			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TB 201221	3	↓	↓	↓	↓	5														✓

SCANNED

Received: 21/12 1539 Carrier: Courier
C/note:
Temp: 16.5 °C Seal: Y (N)
Ice / (Icebricks) / NA

BN 22/12

Environmental Division
Melbourne
Work Order Reference
EM2125778

Telephone : + 61-3-8549 9600

Analysis comments:

Metal sceen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

*For major anion & cation analysis please include ionic balance

Please analyse Cr[VI] samples to achieve LOR of 0.001 mg/L (Method EG050LL)

* halogenated + non halogenated

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 21.12.21	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2125778**	Page	: 1 of 12
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 21-Dec-2021 13:39
Order number	: ----	Date Analysis Commenced	: 22-Dec-2021
C-O-C number	: 21135-11030	Issue Date	: 31-Dec-2021 15:00
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP074-WF: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074-WF: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total 1.2-Dichloroethene is the sum of the reported concentrations of trans-1.2-Dichloroethene and cis-1.2-Dichloroethene at or above the LOR.
- EP074-WF: Where reported, Sum of Trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP231X-LL: Sample EM2125778-001 positive for 6:2 FTS result has been confirmed by direct injection method using second container.
- Ionic Balance out of acceptable limits for sample #1 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Solvents (WP125) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH5	RIN201221	TB201221	----	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
				Result	Result	Result	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**2330**	<10	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**195**	<1	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**195**	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**152**	<1	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**1340**	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**28**	<1	----	----	----
Magnesium	7439-95-4	1	mg/L	**40**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**710**	<1	----	----	----
Potassium	7440-09-7	1	mg/L	**16**	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.04**	----	----	----	----
Antimony	7440-36-0	0.001	mg/L	**0.001**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.076**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.003**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.033**	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	**0.031**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.004**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.016**	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH5	RIN201221	TB201221	----	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Aluminium	7429-90-5	0.01	mg/L		----	<0.01	----	----	----
Antimony	7440-36-0	0.001	mg/L		----	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L		----	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L		----	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		----	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		----	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L		----	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		----	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		----	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		----	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		----	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		----	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		----	<0.01	----	----	----
Tin	7440-31-5	0.001	mg/L		----	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		----	<0.005	----	----	----
Boron	7440-42-8	0.05	mg/L		----	<0.05	----	----	----
Iron	7439-89-6	0.05	mg/L		----	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	----	----	----
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level									
Hexavalent Chromium	18540-29-9	0.001	mg/L		**0.002**	----	----	----	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Beryllium	7440-41-7	0.1	µg/L		<0.1	----	----	----	----
Silver	7440-22-4	0.1	µg/L		<0.1	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		**10.5**	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Beryllium	7440-41-7	0.1	µg/L		----	<0.1	----	----	----
Silver	7440-22-4	0.1	µg/L		----	<0.1	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	<0.2	----	----	----
EK025SF: Free CN by Segmented Flow Analyser									
Free Cyanide	----	0.004	mg/L		<0.004	<0.004	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH5	RIN201221	TB201221	----	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
				Result	Result	Result	----	----
EK026SF: Total CN by Segmented Flow Analyser - Continued								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.12**	<0.01	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.05**	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.85**	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.90**	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.3**	<0.1	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.2**	<0.1	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**44.9**	<0.01	----	----	----
ø Total Cations	----	0.01	meq/L	**36.0**	<0.01	----	----	----
ø Ionic Balance	----	0.01	%	**----**	<0.01	----	----	----
ø Ionic Balance	----	0.01	%	**11.0**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**8**	<1	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	**139**	<10	----	----	----
EP033: C1 - C4 Hydrocarbon Gases								
Methane	74-82-8	10	µg/L	<10	<10	----	----	----
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	**30**	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	----	----
1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	----	----
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	----	----
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	----	----
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	----	----
EP074E: Halogenated Aliphatic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH5	RIN201221	TB201221	----	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
Chloromethane	74-87-3	10	µg/L		<10	<10	<10	----	----
Vinyl chloride	75-01-4	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Bromomethane	74-83-9	10	µg/L		<10	<10	<10	----	----
Trichlorofluoromethane	75-69-4	10	µg/L		<10	<10	<10	----	----
1.1-Dichloroethene	75-35-4	1	µg/L		<1	<1	<1	----	----
Methylene chloride	75-09-2	2	µg/L		<2	<2	<2	----	----
trans-1.2-Dichloroethene	156-60-5	1	µg/L		<1	<1	<1	----	----
1.1-Dichloroethane	75-34-3	1	µg/L		<1	<1	<1	----	----
cis-1.2-Dichloroethene	156-59-2	1	µg/L		<1	<1	<1	----	----
1.1.1-Trichloroethane	71-55-6	1	µg/L		<1	<1	<1	----	----
1.1-Dichloropropylene	563-58-6	1	µg/L		<1	<1	<1	----	----
Carbon Tetrachloride	56-23-5	1	µg/L		<1	<1	<1	----	----
1.2-Dichloroethane	107-06-2	1	µg/L		<1	<1	<1	----	----
Trichloroethene	79-01-6	1	µg/L		<1	<1	<1	----	----
Dibromomethane	74-95-3	1	µg/L		<1	<1	<1	----	----
1.1.2-Trichloroethane	79-00-5	1	µg/L		<1	<1	<1	----	----
1.3-Dichloropropane	142-28-9	1	µg/L		<1	<1	<1	----	----
Tetrachloroethene	127-18-4	1	µg/L		<1	<1	<1	----	----
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L		<1	<1	<1	----	----
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L		<1	<1	<1	----	----
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L		<1	<1	<1	----	----
1.2.3-Trichloropropane	96-18-4	1	µg/L		<1	<1	<1	----	----
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L		<1	<1	<1	----	----
Bromochloromethane	74-97-5	1	µg/L		<1	<1	<1	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	1	µg/L		<1	<1	<1	----	----
Bromobenzene	108-86-1	1	µg/L		<1	<1	<1	----	----
2-Chlorotoluene	95-49-8	1	µg/L		<1	<1	<1	----	----
4-Chlorotoluene	106-43-4	1	µg/L		<1	<1	<1	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	1	µg/L		**13**	<1	<1	----	----
Bromodichloromethane	75-27-4	1	µg/L		**6**	<1	<1	----	----
Dibromochloromethane	124-48-1	1	µg/L		**2**	<1	<1	----	----
Bromoform	75-25-2	1	µg/L		<1	<1	<1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH5	RIN201221	TB201221	----	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.10	µg/L	<0.10	<0.10	----	----	----
2-Methylnaphthalene	91-57-6	0.10	µg/L	<0.10	<0.10	----	----	----
Acenaphthylene	208-96-8	0.10	µg/L	<0.10	<0.10	----	----	----
Acenaphthene	83-32-9	0.10	µg/L	<0.10	<0.10	----	----	----
Fluorene	86-73-7	0.10	µg/L	<0.10	<0.10	----	----	----
Phenanthrene	85-01-8	0.10	µg/L	<0.10	<0.10	----	----	----
Anthracene	120-12-7	0.10	µg/L	<0.10	<0.10	----	----	----
Fluoranthene	206-44-0	0.10	µg/L	<0.10	<0.10	----	----	----
Pyrene	129-00-0	0.10	µg/L	<0.10	<0.10	----	----	----
Benz(a)anthracene	56-55-3	0.10	µg/L	<0.10	<0.10	----	----	----
Chrysene	218-01-9	0.10	µg/L	<0.10	<0.10	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L	<0.10	<0.10	----	----	----
Benzo(k)fluoranthene	207-08-9	0.10	µg/L	<0.10	<0.10	----	----	----
Benzo(a)pyrene	50-32-8	0.050	µg/L	<0.050	<0.050	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L	<0.10	<0.10	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L	<0.10	<0.10	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L	<0.10	<0.10	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.10	µg/L	<0.10	<0.10	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.10	µg/L	<0.10	<0.10	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	<4	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L	<2	<2	----	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L	<2	<2	----	----	----
Pentachlorophenol	87-86-5	2	µg/L	<2	<2	----	----	----
^ Sum of Phenols (halogenated)	----	2	µg/L	<2	<2	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	4	µg/L	<4	<4	----	----	----
2-Methylphenol	95-48-7	4	µg/L	<4	<4	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH5	RIN201221	TB201221	----	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
				Result	Result	Result	----	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
2-Nitrophenol	88-75-5	4	µg/L	<4	<4	----	----	----
2.4-Dimethylphenol	105-67-9	4	µg/L	<4	<4	----	----	----
2.4-Dinitrophenol	51-28-5	100	µg/L	<100	<100	----	----	----
4-Nitrophenol	100-02-7	50	µg/L	<50	<50	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L	<50	<50	----	----	----
Dinoseb	88-85-7	50	µg/L	<50	<50	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L	<50	<50	----	----	----
^ Cresols (Total)	----	4	µg/L	<4	<4	----	----	----
^ Sum of Phenols (non-halogenated)	----	4	µg/L	<4	<4	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	**220**	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	**140**	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	**360**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	**340**	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	**340**	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH5	RIN201221	TB201221	----	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L		<0.002	<0.002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L		**0.006**	<0.002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L		<0.005	<0.005	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	<0.002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.005	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH5	RIN201221	TB201221	----	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	<0.002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		<0.002	<0.002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		**0.061**	<0.005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L		<0.005	<0.005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L		<0.005	<0.005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.002	µg/L		**0.067**	<0.002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L		<0.002	<0.002	----	----	----
Sum of PFAS (WA DER List)	----	0.002	µg/L		**0.067**	<0.002	----	----	----
WP125: Miscellaneous Alcohols & Solvents									
Acetone	67-64-1	0.01	mg/L		<0.01	<0.01	----	----	----
Acrylonitrile	107-13-1	0.01	mg/L		<0.01	<0.01	----	----	----
Ethylhexyl Acrylate	103-11-7	0.01	mg/L		<0.01	<0.01	----	----	----
Isopropanol	67-63-0	0.01	mg/L		<0.01	<0.01	----	----	----
Methyl Ethyl Ketone	78-93-3	0.01	mg/L		<0.01	<0.01	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L		<0.01	<0.01	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	1	%		**105**	**120**	**110**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH5	RIN201221	TB201221	----	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125778-001	EM2125778-002	EM2125778-003	--------	--------
				Result	Result	Result	----	----
EP074S: VOC Surrogates - Continued								
Toluene-D8	2037-26-5	1	%	97.5	107	99.6	----	----
4-Bromofluorobenzene	460-00-4	1	%	101	111	105	----	----
EP075(SIM)V: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.10	%	77.4	73.0	----	----	----
Anthracene-d10	1719-06-8	0.10	%	59.9	57.2	----	----	----
4-Terphenyl-d14	1718-51-0	0.10	%	62.4	60.4	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.2	%	23.0	26.8	----	----	----
2-Chlorophenol-D4	93951-73-6	0.2	%	58.2	68.0	----	----	----
2.4.6-Tribromophenol	118-79-6	0.2	%	62.5	68.2	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.2	%	69.6	80.4	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%	65.8	76.3	----	----	----
2-Fluorobiphenyl	321-60-8	0.2	%	75.6	84.1	----	----	----
Anthracene-d10	1719-06-8	0.2	%	85.0	94.6	----	----	----
4-Terphenyl-d14	1718-51-0	0.2	%	68.7	84.2	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	103	118	107	----	----
Toluene-D8	2037-26-5	2	%	103	113	105	----	----
4-Bromofluorobenzene	460-00-4	2	%	103	114	107	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.002	%	98.6	102	----	----	----
13C8-PFOA	----	0.002	%	98.4	98.2	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)V: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	57
2-Chlorophenol-D4	93951-73-6	33	118
2.4.6-Tribromophenol	118-79-6	28	135
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	41	136
1.2-Dichlorobenzene-D4	2199-69-1	42	134
2-Fluorobiphenyl	321-60-8	45	137
Anthracene-d10	1719-06-8	53	141
4-Terphenyl-d14	1718-51-0	43	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EG035F: Dissolved Mercury by FIMS

(WATER) EG020F: Dissolved Metals by ICP-MS

(WATER) EP033: C1 - C4 Hydrocarbon Gases

(WATER) EG035T: Total Recoverable Mercury by FIMS

(WATER) EG020T: Total Metals by ICP-MS

(WATER) EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

(WATER) EG094T: Total metals in Fresh water by ORC-ICPMS

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21155 - 11037

Project Number:	21155
Project Location:	Northcote
Project Manager:	SH
Contact: laboratory@compassenviro.com.au compassenviro@esdat.com.au	
Laboratory: ALS Springvale	
Address: 4 Westall Road, Springvale	
Phone No: 8549 9600 Fax: 8549 9626	
Lab Quote Number: MEBQ-266-18	

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	major anions and cations*	Metal screen (Compass 21 metals, see below)	Compass Water 2	Cr-6+	Total + Free Cyanide	Phenols *	Compass Solvents	PFAS 28 low level	Dissolved CH4	TOC	COD	Volatile Fatty Acids	Alkalinity	TRH/ BTEXN + Compass Hexane
FSG-Bitl.	1	21.12.21		2	ICE	18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DP08	2	↓		↓	↓	18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RIN 211221	3					18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TB 211221	4					5														✓

Received: 22/12 1555 Carrier: Courier
C/note:
Temp: 15.0 °C Seal: Y / N
Ice / Icebricks / NA
AM

Environmental Division
Melbourne
Work Order Reference
EM2125876

Telephone : +61-3-8549 9600

Analysis comments: Metal sceen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols, halogenated and non-halogenated

*For major anion & cation analysis please include ionic balance
Please analyse Cr(VI) samples to achieve LOR of 0.001 mg/L (Method EG050LL)

* halogenated + non halogenated phenols

* KEY: Preservative: 1 = NaOH; 2 = HNO3, 3 = H2SO4; 4 = NaOH + ZnOAC, 5 = None, 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 22.12.21	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

S:\Administration\S Templates\1 Administration Forms\COCs\2 Updated COCs Esdat\COCOFORM ALS SPRINGVALE GW\COCOFORM ALS SPRINGVALE GW 2021.xls

CERTIFICATE OF ANALYSIS

Work Order	: **EM2125876**	Page	: 1 of 12
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 22-Dec-2021 15:55
Order number	: ----	Date Analysis Commenced	: 23-Dec-2021
C-O-C number	: 21135-11037	Issue Date	: 07-Jan-2022 17:22
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Pabi Subba	Senior Organic Chemist	Sydney Organics, Smithfield, NSW
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP074-WF: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074-WF: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total 1.2-Dichloroethene is the sum of the reported concentrations of trans-1.2-Dichloroethene and cis-1.2-Dichloroethene at or above the LOR.
- EP074-WF: Where reported, Sum of Trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP231X-LL: Sample EM2125876-002 required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Ionic Balance out of acceptable limits for sample #2 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Solvents (WP125) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**----**	**----**	<10	**----**	**----**
Total Dissolved Solids @180°C	----	10	mg/L	**1020**	**1720**	**----**	**----**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	**----**	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	**----**	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**426**	**866**	**1**	**----**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**426**	**866**	**1**	**----**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**381**	**248**	<1	**----**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**92**	**524**	<1	**----**	**----**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**38**	**69**	<1	**----**	**----**
Magnesium	7439-95-4	1	mg/L	**60**	**89**	<1	**----**	**----**
Sodium	7440-23-5	1	mg/L	**222**	**421**	<1	**----**	**----**
Potassium	7440-09-7	1	mg/L	**15**	**42**	<1	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.14**	**----**	**----**	**----**	**----**
Antimony	7440-36-0	0.001	mg/L	<0.001	**----**	**----**	**----**	**----**
Arsenic	7440-38-2	0.001	mg/L	<0.001	**----**	**----**	**----**	**----**
Barium	7440-39-3	0.001	mg/L	**0.037**	**----**	**----**	**----**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	**----**	**----**	**----**	**----**
Chromium	7440-47-3	0.001	mg/L	<0.001	**----**	**----**	**----**	**----**
Cobalt	7440-48-4	0.001	mg/L	**0.001**	**----**	**----**	**----**	**----**
Copper	7440-50-8	0.001	mg/L	**0.005**	**----**	**----**	**----**	**----**
Lead	7439-92-1	0.001	mg/L	<0.001	**----**	**----**	**----**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.116**	**----**	**----**	**----**	**----**
Molybdenum	7439-98-7	0.001	mg/L	**0.013**	**----**	**----**	**----**	**----**
Nickel	7440-02-0	0.001	mg/L	**0.007**	**----**	**----**	**----**	**----**
Selenium	7782-49-2	0.01	mg/L	<0.01	**----**	**----**	**----**	**----**
Tin	7440-31-5	0.001	mg/L	<0.001	**----**	**----**	**----**	**----**
Zinc	7440-66-6	0.005	mg/L	**0.025**	**----**	**----**	**----**	**----**
Boron	7440-42-8	0.05	mg/L	**0.56**	**----**	**----**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**0.06**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	<0.01	<0.01	----	----
Antimony	7440-36-0	0.001	mg/L	----	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	----	**0.002**	<0.001	----	----
Barium	7440-39-3	0.001	mg/L	----	**0.057**	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	**0.001**	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	**0.002**	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	----	**0.196**	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	----	**0.002**	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	----	**0.011**	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	----	<0.01	<0.01	----	----
Tin	7440-31-5	0.001	mg/L	----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	----	**0.022**	<0.005	----	----
Boron	7440-42-8	0.05	mg/L	----	**0.85**	<0.05	----	----
Iron	7439-89-6	0.05	mg/L	----	**0.26**	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	----	----
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	**0.001**	----	----	----	----
EG050G LL-T: Total Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	----	<0.001	<0.001	----	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS								
Beryllium	7440-41-7	0.1	µg/L	<0.1	----	----	----	----
Silver	7440-22-4	0.1	µg/L	<0.1	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L	**6.3**	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS								
Beryllium	7440-41-7	0.1	µg/L	----	<0.1	<0.1	----	----
Silver	7440-22-4	0.1	µg/L	----	<0.1	<0.1	----	----
Vanadium	7440-62-2	0.2	µg/L	----	<0.2	<0.2	----	----
EK025SF: Free CN by Segmented Flow Analyser								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EK025SF: Free CN by Segmented Flow Analyser - Continued								
Free Cyanide	----	0.004	mg/L	<0.004	<0.004	<0.004	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	<0.004	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.16**	**2.79**	<0.01	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.47**	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**8.66**	<0.01	<0.01	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**9.13**	<0.01	<0.01	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.4**	**3.3**	<0.1	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**10.5**	**3.3**	<0.1	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**19.0**	**37.2**	**0.02**	----	----
ø Total Cations	----	0.01	meq/L	**16.9**	**30.2**	<0.01	----	----
ø Ionic Balance	----	0.01	%	**6.03**	**10.5**	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**6**	**20**	<1	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	**31**	**40**	<10	----	----
EP033: C1 - C4 Hydrocarbon Gases								
Methane	74-82-8	10	µg/L	<10	**331**	<10	----	----
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	**26**	**40**	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----
1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds								
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----
Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	----
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----
Methylene chloride	75-09-2	2	µg/L	<2	<2	<2	<2	----
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	----
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----
Bromochloromethane	74-97-5	1	µg/L	<1	<1	<1	<1	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	1	µg/L	**7**	<1	<1	<1	----
Bromodichloromethane	75-27-4	1	µg/L	**2**	<1	<1	<1	----
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
2-Methylnaphthalene	91-57-6	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Acenaphthylene	208-96-8	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Acenaphthene	83-32-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Fluorene	86-73-7	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Phenanthrene	85-01-8	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Anthracene	120-12-7	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Fluoranthene	206-44-0	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Pyrene	129-00-0	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benz(a)anthracene	56-55-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Chrysene	218-01-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(k)fluoranthene	207-08-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(a)pyrene	50-32-8	0.050	µg/L	<0.050	<0.050	<0.050	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L	<0.10	<0.10	<0.10	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.10	µg/L	<0.10	<0.10	<0.10	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.10	µg/L	<0.10	<0.10	<0.10	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	<4	<4	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L	<2	<2	<2	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	2	µg/L	<2	<2	<2	----	----
^ Sum of Phenols (halogenated)	----	2	µg/L	<2	<2	<2	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	4	µg/L	<4	<4	<4	----	----
2-Methylphenol	95-48-7	4	µg/L	<4	<4	<4	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
			Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
				Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
2-Nitrophenol	88-75-5	4	µg/L	<4	<4	<4	----	----
2.4-Dimethylphenol	105-67-9	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrophenol	51-28-5	100	µg/L	<100	<100	<100	----	----
4-Nitrophenol	100-02-7	50	µg/L	<50	<50	<50	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L	<50	<50	<50	----	----
Dinoseb	88-85-7	50	µg/L	<50	<50	<50	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L	<50	<50	<50	----	----
^ Cresols (Total)	----	4	µg/L	<4	<4	<4	----	----
^ Sum of Phenols (non-halogenated)	----	4	µg/L	<4	<4	<4	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	**210**	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	**210**	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	**190**	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	**190**	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L		**0.020**	**0.038**	<0.002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L		**0.015**	**0.022**	<0.002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L		**0.041**	**0.127**	<0.002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L		<0.002	**0.004**	<0.002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L		**0.022**	**0.125**	<0.002	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L		<0.002	<0.004	<0.002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L		**0.03**	**0.06**	<0.01	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L		**0.113**	**0.132**	<0.002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L		**0.121**	**0.122**	<0.002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L		**0.030**	**0.060**	<0.002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L		**0.072**	**0.231**	<0.002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L		<0.002	**0.021**	<0.002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L		<0.002	<0.004	<0.002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L		<0.002	<0.004	<0.002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L		<0.002	<0.004	<0.002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L		<0.002	<0.004	<0.002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L		<0.005	<0.009	<0.005	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.009	<0.005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	<0.004	<0.002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.009	<0.005	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.009	<0.005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.009	<0.005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.009	<0.005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	<0.004	<0.002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		<0.002	<0.004	<0.002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	<0.005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		**0.014**	**0.016**	<0.005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L		<0.005	<0.005	<0.005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L		<0.005	<0.005	<0.005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.002	µg/L		**0.478**	**0.958**	<0.002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L		**0.063**	**0.252**	<0.002	----	----
Sum of PFAS (WA DER List)	----	0.002	µg/L		**0.463**	**0.911**	<0.002	----	----
WP125: Miscellaneous Alcohols & Solvents									
Acetone	67-64-1	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Acrylonitrile	107-13-1	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Ethylhexyl Acrylate	103-11-7	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Isopropanol	67-63-0	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Methyl Ethyl Ketone	78-93-3	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L		<0.01	<0.01	<0.01	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	1	%		**116**	**119**	**104**	**110**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH1	DP08	RIN211221	TB211221	----
				Sampling date / time	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	21-Dec-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2125876-001	EM2125876-002	EM2125876-003	EM2125876-004	--------
					Result	Result	Result	Result	----
EP074S: VOC Surrogates - Continued									
Toluene-D8	2037-26-5	1	%		111	118	108	106	----
4-Bromofluorobenzene	460-00-4	1	%		120	125	116	116	----
EP075(SIM)V: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.10	%		71.8	83.2	78.9	----	----
Anthracene-d10	1719-06-8	0.10	%		55.7	56.4	58.4	----	----
4-Terphenyl-d14	1718-51-0	0.10	%		76.4	67.7	69.0	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.2	%		23.5	33.5	35.9	----	----
2-Chlorophenol-D4	93951-73-6	0.2	%		63.7	72.9	75.6	----	----
2.4.6-Tribromophenol	118-79-6	0.2	%		74.4	79.4	76.4	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.2	%		79.4	75.5	77.8	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%		79.2	72.9	77.6	----	----
2-Fluorobiphenyl	321-60-8	0.2	%		87.5	82.4	86.6	----	----
Anthracene-d10	1719-06-8	0.2	%		96.8	97.4	102	----	----
4-Terphenyl-d14	1718-51-0	0.2	%		96.6	83.3	87.2	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		116	119	104	110	----
Toluene-D8	2037-26-5	2	%		111	118	108	106	----
4-Bromofluorobenzene	460-00-4	2	%		120	125	116	116	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.002	%		104	106	106	----	----
13C8-PFOA	----	0.002	%		101	98.8	97.9	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)V: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	57
2-Chlorophenol-D4	93951-73-6	33	118
2.4.6-Tribromophenol	118-79-6	28	135
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	41	136
1.2-Dichlorobenzene-D4	2199-69-1	42	134
2-Fluorobiphenyl	321-60-8	45	137
Anthracene-d10	1719-06-8	53	141
4-Terphenyl-d14	1718-51-0	43	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EG094T: Total metals in Fresh water by ORC-ICPMS

(WATER) EG035F: Dissolved Mercury by FIMS

(WATER) EG020F: Dissolved Metals by ICP-MS

(WATER) EP033: C1 - C4 Hydrocarbon Gases

(WATER) EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

(WATER) EG035T: Total Recoverable Mercury by FIMS

(WATER) EG020T: Total Metals by ICP-MS

Received: 23/12 0950 Carrier: Client

C/note:

Temp: 6-7 °C Seal: Y / N

Ice / Icebricks / NA

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3:
Tel: 03 9819 4704 Fax: 03 9819 4724

Environmental Division
Melbourne
Work Order Reference
EM2125901

Telephone : +61-3-8549 9600

CHAIN OF CUSTODY RECORD
Reference: 21135 - 1038

Project Number: 21135	Laboratory: ALS Springvale	Turnaround Time:	5 days
Project Location: Whittlesea	Address: 4 Westall Road, Springvale		
Project Manager: SH	Phone No: 8549 9600 Fax: 8549 9626		
Contact: laboratory@compassenviro.com.au compassenviro@esdat.com.au	Lab Quote Number: MEBQ-266-18		

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	major anions and cations*	Metal screen (Compass 21 metals, see below)	Compass Water 2	Cr6+	Total + Free cyanide	Phenols *	Compass Solvents	PFAS 24 low level	Dissolved Cr6+	TOC	COD	Volatile Fatty Acids	Alkalinity	TRH/ BTEXN and Compass HVOCs
DP02B	4	22.12.21		2	ICE	18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FSG-BH3	5	↓		↓	↓	↓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FSG-BH 221221	6								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RIN221221	7								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TB221221	8					5														✓
FSG-BH09	1	23.12.21		2	ICE	19			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RIN 231221	2	↓		↓	↓	19			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TB231221	3	↓		↓	↓	5														✓

Analysis comments:

Metal sceen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

*For major anion & cation analysis please include ionic balance

Please analyse Cr(VI) samples to achieve LOR of 0.001 mg/L (Method EG050LL)

* halogenated and non halogenated

* KEY:

Preservative: 1 = NaOH, 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 23.12.21	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2125901**	Page	: 1 of 21
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 23-Dec-2021 10:48
Order number	: ----	Date Analysis Commenced	: 23-Dec-2021
C-O-C number	: 21135-11038	Issue Date	: 11-Jan-2022 13:03
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP074-WF: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074-WF: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total 1.2-Dichloroethene is the sum of the reported concentrations of trans-1.2-Dichloroethene and cis-1.2-Dichloroethene at or above the LOR.
- EP074-WF: Where reported, Sum of Trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP231X-LL: Particular samples EM2125901-005, 006 LOR has been raised for 6:2 FTS due to laboratory background level.
- EP074-WF: Sample EM2125901_005 has been confirmed by re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- EK026SF: EM2125870 #3, Poor matrix spike recovery for Total cyanide due to matrix effects.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Solvents (WP125) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	1390	<10	----	2520	4400
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	550	4	----	472	614
Total Alkalinity as CaCO3	----	1	mg/L	550	4	----	472	614
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	404	<1	----	900	237
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	128	<1	----	294	1820
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	14	<1	----	99	65
Magnesium	7439-95-4	1	mg/L	26	<1	----	128	106
Sodium	7440-23-5	1	mg/L	404	<1	----	528	1360
Potassium	7440-09-7	1	mg/L	12	<1	----	42	53
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.03	----	----	0.02	----
Antimony	7440-36-0	0.001	mg/L	<0.001	----	----	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	<0.001	----
Barium	7440-39-3	0.001	mg/L	0.045	----	----	0.025	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	0.003	----	----	<0.001	----
Copper	7440-50-8	0.001	mg/L	0.015	----	----	0.016	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	<0.001	----
Manganese	7439-96-5	0.001	mg/L	0.394	----	----	0.034	----
Molybdenum	7439-98-7	0.001	mg/L	0.011	----	----	0.003	----
Nickel	7440-02-0	0.001	mg/L	0.073	----	----	0.012	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	0.263	----	----	0.045	----
Boron	7440-42-8	0.05	mg/L	1.34	----	----	1.53	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	0.07	----
EG020T: Total Metals by ICP-MS								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
				Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit		EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Aluminium	7429-90-5	0.01	mg/L		----	<0.01	----	----	**44.6**
Antimony	7440-36-0	0.001	mg/L		----	<0.001	----	----	<0.001
Arsenic	7440-38-2	0.001	mg/L		----	<0.001	----	----	**0.016**
Beryllium	7440-41-7	0.001	mg/L		----	<0.001	----	----	**0.004**
Barium	7440-39-3	0.001	mg/L		----	<0.001	----	----	**0.466**
Cadmium	7440-43-9	0.0001	mg/L		----	<0.0001	----	----	**0.0001**
Chromium	7440-47-3	0.001	mg/L		----	<0.001	----	----	**0.208**
Cobalt	7440-48-4	0.001	mg/L		----	<0.001	----	----	**0.117**
Copper	7440-50-8	0.001	mg/L		----	<0.001	----	----	**0.147**
Lead	7439-92-1	0.001	mg/L		----	<0.001	----	----	**0.148**
Manganese	7439-96-5	0.001	mg/L		----	<0.001	----	----	**2.07**
Molybdenum	7439-98-7	0.001	mg/L		----	<0.001	----	----	**0.024**
Nickel	7440-02-0	0.001	mg/L		----	<0.001	----	----	**0.169**
Selenium	7782-49-2	0.01	mg/L		----	<0.01	----	----	**0.02**
Silver	7440-22-4	0.001	mg/L		----	<0.001	----	----	<0.001
Tin	7440-31-5	0.001	mg/L		----	<0.001	----	----	<0.001
Vanadium	7440-62-2	0.01	mg/L		----	<0.01	----	----	**0.07**
Zinc	7440-66-6	0.005	mg/L		----	<0.005	----	----	**0.765**
Boron	7440-42-8	0.05	mg/L		----	<0.05	----	----	**0.15**
Iron	7439-89-6	0.05	mg/L		----	<0.05	----	----	**73.0**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	----	----	<0.0001
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level									
Hexavalent Chromium	18540-29-9	0.001	mg/L		**0.001**	----	----	**0.001**	----
EG050G LL-T: Total Hexavalent Chromium by Discrete Analyser - Low Level									
Hexavalent Chromium	18540-29-9	0.001	mg/L		----	<0.001	----	----	<0.001
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Beryllium	7440-41-7	0.1	µg/L		<0.1	<0.1	----	<0.1	----
Silver	7440-22-4	0.1	µg/L		<0.1	<0.1	----	<0.1	----
Vanadium	7440-62-2	0.2	µg/L		**0.6**	<0.2	----	**1.3**	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Beryllium	7440-41-7	0.1	µg/L		----	----	----	----	**4.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
EG094T: Total metals in Fresh water by ORC-ICPMS - Continued								
Silver	7440-22-4	0.1	µg/L	----	----	----	----	0.3
Vanadium	7440-62-2	0.2	µg/L	----	----	----	----	63.8
EK025SF: Free CN by Segmented Flow Analyser								
Free Cyanide	----	0.004	mg/L	<0.004	<0.004	----	<0.004	<0.004
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	----	<0.004	<0.004
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.51	<0.02	----	0.06	0.99
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.40	<0.01	----	0.25	0.28
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	28.3	<0.01	----	99.8	1.05
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	28.7	<0.01	----	100	1.33
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.8	<0.1	----	4.2	1.4
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	30.5	<0.1	----	104	2.7
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	23.0	0.08	----	36.5	68.5
ø Total Cations	----	0.01	meq/L	20.7	<0.01	----	39.5	72.5
ø Ionic Balance	----	0.01	%	5.24	----	----	4.02	2.79
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	20	<1	----	30	6
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	13	<10	----	32	15
EP033: C1 - C4 Hydrocarbon Gases								
Methane	74-82-8	10	µg/L	<10	<10	----	<10	20
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	43	<5	----	59	26
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1
1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1
EP074E: Halogenated Aliphatic Compounds								
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10
Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1
Methylene chloride	75-09-2	2	µg/L	<2	<2	<2	<2	<2
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	74-97-5	1	µg/L	<1	<1	<1	<1	<1
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1
EP074G: Trihalomethanes								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
EP074G: Trihalomethanes - Continued								
Chloroform	67-66-3	1	µg/L	**2**	<1	<1	<1	**1**
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
2-Methylnaphthalene	91-57-6	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Acenaphthylene	208-96-8	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Acenaphthene	83-32-9	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Fluorene	86-73-7	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Phenanthrene	85-01-8	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Anthracene	120-12-7	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Fluoranthene	206-44-0	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Pyrene	129-00-0	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Benz(a)anthracene	56-55-3	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Chrysene	218-01-9	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Benzo(k)fluoranthene	207-08-9	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Benzo(a)pyrene	50-32-8	0.050	µg/L	<0.050	<0.050	----	<0.050	<0.050
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
^ Sum of polycyclic aromatic hydrocarbons	----	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
^ Benzo(a)pyrene TEQ (zero)	----	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	<2	<2
4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	<4	----	<4	<4
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	<2	<2
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L	<2	<2	----	<2	<2
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L	<2	<2	----	<2	<2
Pentachlorophenol	87-86-5	2	µg/L	<2	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
				Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit		EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
^ Sum of Phenols (halogenated)	----	2	µg/L		<2	<2	----	<2	<2
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	<4	----	<4	<4
2-Methylphenol	95-48-7	4	µg/L		<4	<4	----	<4	<4
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	<4	----	<4	<4
2-Nitrophenol	88-75-5	4	µg/L		<4	<4	----	<4	<4
2.4-Dimethylphenol	105-67-9	4	µg/L		<4	<4	----	<4	<4
2.4-Dinitrophenol	51-28-5	100	µg/L		<100	<100	----	<100	<100
4-Nitrophenol	100-02-7	50	µg/L		<50	<50	----	<50	<50
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L		<50	<50	----	<50	<50
Dinoseb	88-85-7	50	µg/L		<50	<50	----	<50	<50
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L		<50	<50	----	<50	<50
^ Cresols (Total)	----	4	µg/L		<4	<4	----	<4	<4
^ Sum of Phenols (non-halogenated)	----	4	µg/L		<4	<4	----	<4	<4
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	**200**	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	**1080**	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	**1280**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	**610**	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	**680**	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	**1290**	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	**610**	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L	<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L	**0.128**	<0.002	----	**0.007**	**0.015**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L	**0.108**	<0.002	----	<0.002	**0.012**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L	**0.332**	<0.002	----	**0.003**	**0.070**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L	**0.017**	<0.002	----	<0.002	**0.003**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L	**0.083**	<0.002	----	**0.026**	**0.064**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L	<0.002	<0.002	----	<0.002	<0.002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L	**0.03**	<0.01	----	<0.01	**0.02**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L	**0.038**	<0.002	----	<0.002	**0.037**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L	**0.095**	<0.002	----	**0.003**	**0.038**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L	**0.021**	<0.002	----	<0.002	**0.014**
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L	**0.039**	<0.002	----	**0.008**	**0.030**
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L	<0.002	<0.002	----	<0.002	**0.035**
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L	<0.002	<0.002	----	<0.002	**0.002**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L	<0.002	<0.002	----	<0.002	<0.002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L	<0.002	<0.002	----	<0.002	<0.002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L	<0.002	<0.002	----	<0.002	<0.002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L	<0.005	<0.005	----	<0.005	<0.005

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
				Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit		EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	<0.002	----	<0.002	<0.002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	<0.002	----	<0.002	<0.002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		**0.004**	<0.002	----	<0.002	<0.002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		**0.014**	<0.005	----	**0.017**	<0.010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L		<0.005	<0.005	----	<0.005	<0.005
EP231P: PFAS Sums									
Sum of PFAS	----	0.002	µg/L		**0.909**	<0.002	----	**0.064**	**0.340**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L		**0.415**	<0.002	----	**0.029**	**0.134**
Sum of PFAS (WA DER List)	----	0.002	µg/L		**0.780**	<0.002	----	**0.064**	**0.288**
WP125: Miscellaneous Alcohols & Solvents									
Acetone	67-64-1	0.01	mg/L		<0.01	<0.01	----	<0.01	<0.01
Acrylonitrile	107-13-1	0.01	mg/L		<0.01	<0.01	----	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH09	RIN231221	TB231221	DP02B	FSG-BH3
			Sampling date / time	23-Dec-2021 00:00	23-Dec-2021 00:00	23-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2125901-001	EM2125901-002	EM2125901-003	EM2125901-004	EM2125901-005
				Result	Result	Result	Result	Result
WP125: Miscellaneous Alcohols & Solvents - Continued								
Ethylhexyl Acrylate	103-11-7	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01
Isopropanol	67-63-0	0.01	mg/L	<0.01	<0.01	----	<0.01	0.01
Methyl Ethyl Ketone	78-93-3	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	1	%	115	111	112	120	109
Toluene-D8	2037-26-5	1	%	113	107	109	120	104
4-Bromofluorobenzene	460-00-4	1	%	123	119	119	119	117
EP075(SIM)V: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.10	%	82.7	78.2	----	87.4	78.3
Anthracene-d10	1719-06-8	0.10	%	86.7	86.2	----	98.4	93.9
4-Terphenyl-d14	1718-51-0	0.10	%	67.6	69.0	----	82.0	80.5
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.2	%	24.4	28.6	----	25.5	24.8
2-Chlorophenol-D4	93951-73-6	0.2	%	50.7	57.4	----	58.8	50.1
2.4.6-Tribromophenol	118-79-6	0.2	%	63.3	65.0	----	64.7	62.0
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.2	%	74.6	84.4	----	69.8	76.0
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%	67.0	71.1	----	72.0	62.4
2-Fluorobiphenyl	321-60-8	0.2	%	77.5	84.9	----	81.8	73.3
Anthracene-d10	1719-06-8	0.2	%	89.6	99.0	----	84.2	85.8
4-Terphenyl-d14	1718-51-0	0.2	%	71.4	81.9	----	71.5	71.0
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	115	111	112	120	109
Toluene-D8	2037-26-5	2	%	113	107	109	120	104
4-Bromofluorobenzene	460-00-4	2	%	123	119	119	119	117
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.002	%	104	102	----	103	99.5
13C8-PFOA	----	0.002	%	101	99.1	----	100	101

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
			Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
				Result	Result	Result	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**4530**	<10	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**615**	**2**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**615**	**2**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**236**	<1	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**1820**	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**63**	<1	----	----	----
Magnesium	7439-95-4	1	mg/L	**104**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1340**	<1	----	----	----
Potassium	7440-09-7	1	mg/L	**52**	<1	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**52.0**	<0.01	----	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.017**	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L	**0.005**	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.513**	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	**0.247**	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.135**	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.172**	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	**0.169**	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**2.19**	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	**0.052**	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.200**	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	**0.03**	<0.01	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L	**0.001**	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L	**0.08**	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.903**	<0.005	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
			Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Boron	7440-42-8	0.05	mg/L	**0.16**	<0.05	----	----	----
Iron	7439-89-6	0.05	mg/L	**86.6**	<0.05	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG050G LL-T: Total Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	**0.001**	<0.001	----	----	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS								
Beryllium	7440-41-7	0.1	µg/L	----	<0.1	----	----	----
Silver	7440-22-4	0.1	µg/L	----	<0.1	----	----	----
Vanadium	7440-62-2	0.2	µg/L	----	<0.2	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS								
Beryllium	7440-41-7	0.1	µg/L	**3.8**	----	----	----	----
Silver	7440-22-4	0.1	µg/L	**0.3**	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L	**58.2**	----	----	----	----
EK025SF: Free CN by Segmented Flow Analyser								
Free Cyanide	----	0.004	mg/L	<0.004	<0.004	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**1.00**	<0.01	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.28**	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**1.05**	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.33**	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.4**	<0.1	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.7**	<0.1	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**68.5**	**0.04**	----	----	----
ø Total Cations	----	0.01	meq/L	**71.3**	<0.01	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
			Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
				Result	Result	Result	----	----
EN055: Ionic Balance - Continued								
ø Ionic Balance	----	0.01	%	**1.99**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**5**	<1	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	**14**	<10	----	----	----
EP033: C1 - C4 Hydrocarbon Gases								
Methane	74-82-8	10	µg/L	**19**	<10	----	----	----
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	**58**	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	----	----
1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	----	----
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	----	----
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	----	----
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	----	----
EP074E: Halogenated Aliphatic Compounds								
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	----	----
Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	<0.2	----	----
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	----	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	----	----
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	----	----
Methylene chloride	75-09-2	2	µg/L	<2	<2	<2	----	----
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	----	----
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	----	----
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	----	----
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	----	----
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	----	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	----	----
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	----	----
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	----	----
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	----	----
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	----	----
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	----	----
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
				Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L		<1	<1	<1	----	----
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L		<1	<1	<1	----	----
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L		<1	<1	<1	----	----
1.2.3-Trichloropropane	96-18-4	1	µg/L		<1	<1	<1	----	----
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L		<1	<1	<1	----	----
Bromochloromethane	74-97-5	1	µg/L		<1	<1	<1	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	1	µg/L		<1	<1	<1	----	----
Bromobenzene	108-86-1	1	µg/L		<1	<1	<1	----	----
2-Chlorotoluene	95-49-8	1	µg/L		<1	<1	<1	----	----
4-Chlorotoluene	106-43-4	1	µg/L		<1	<1	<1	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	1	µg/L		**1**	<1	<1	----	----
Bromodichloromethane	75-27-4	1	µg/L		<1	<1	<1	----	----
Dibromochloromethane	124-48-1	1	µg/L		<1	<1	<1	----	----
Bromoform	75-25-2	1	µg/L		<1	<1	<1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.10	µg/L		<0.10	<0.10	----	----	----
2-Methylnaphthalene	91-57-6	0.10	µg/L		<0.10	<0.10	----	----	----
Acenaphthylene	208-96-8	0.10	µg/L		<0.10	<0.10	----	----	----
Acenaphthene	83-32-9	0.10	µg/L		<0.10	<0.10	----	----	----
Fluorene	86-73-7	0.10	µg/L		<0.10	<0.10	----	----	----
Phenanthrene	85-01-8	0.10	µg/L		<0.10	<0.10	----	----	----
Anthracene	120-12-7	0.10	µg/L		<0.10	<0.10	----	----	----
Fluoranthene	206-44-0	0.10	µg/L		<0.10	<0.10	----	----	----
Pyrene	129-00-0	0.10	µg/L		<0.10	<0.10	----	----	----
Benz(a)anthracene	56-55-3	0.10	µg/L		<0.10	<0.10	----	----	----
Chrysene	218-01-9	0.10	µg/L		<0.10	<0.10	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L		<0.10	<0.10	----	----	----
Benzo(k)fluoranthene	207-08-9	0.10	µg/L		<0.10	<0.10	----	----	----
Benzo(a)pyrene	50-32-8	0.050	µg/L		<0.050	<0.050	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L		<0.10	<0.10	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L		<0.10	<0.10	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L		<0.10	<0.10	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
			Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Sum of polycyclic aromatic hydrocarbons	----	0.10	µg/L	<0.10	<0.10	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.10	µg/L	<0.10	<0.10	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	<4	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L	<2	<2	----	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L	<2	<2	----	----	----
Pentachlorophenol	87-86-5	2	µg/L	<2	<2	----	----	----
^ Sum of Phenols (halogenated)	----	2	µg/L	<2	<2	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	4	µg/L	<4	<4	----	----	----
2-Methylphenol	95-48-7	4	µg/L	<4	<4	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	----	----
2-Nitrophenol	88-75-5	4	µg/L	<4	<4	----	----	----
2.4-Dimethylphenol	105-67-9	4	µg/L	<4	<4	----	----	----
2.4-Dinitrophenol	51-28-5	100	µg/L	<100	<100	----	----	----
4-Nitrophenol	100-02-7	50	µg/L	<50	<50	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L	<50	<50	----	----	----
Dinoseb	88-85-7	50	µg/L	<50	<50	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L	<50	<50	----	----	----
^ Cresols (Total)	----	4	µg/L	<4	<4	----	----	----
^ Sum of Phenols (non-halogenated)	----	4	µg/L	<4	<4	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
				Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L		**0.015**	<0.002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L		**0.012**	<0.002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L		**0.073**	<0.002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L		**0.003**	<0.002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L		**0.066**	<0.002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L		<0.002	<0.002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L		**0.02**	<0.01	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L		**0.037**	<0.002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L		**0.037**	<0.002	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
				Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
					Result	Result	Result	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L		**0.014**	<0.002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L		**0.030**	<0.002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L		**0.035**	<0.002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L		**0.003**	<0.002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L		<0.002	<0.002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L		<0.005	<0.005	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	<0.002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	<0.002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		<0.002	<0.002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		<0.010	<0.005	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
			Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
				Result	Result	Result	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L	<0.005	<0.005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L	<0.005	<0.005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.002	µg/L	**0.345**	<0.002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L	**0.139**	<0.002	----	----	----
Sum of PFAS (WA DER List)	----	0.002	µg/L	**0.292**	<0.002	----	----	----
WP125: Miscellaneous Alcohols & Solvents								
Acetone	67-64-1	0.01	mg/L	<0.01	<0.01	----	----	----
Acrylonitrile	107-13-1	0.01	mg/L	<0.01	<0.01	----	----	----
Ethylhexyl Acrylate	103-11-7	0.01	mg/L	<0.01	<0.01	----	----	----
Isopropanol	67-63-0	0.01	mg/L	<0.01	<0.01	----	----	----
Methyl Ethyl Ketone	78-93-3	0.01	mg/L	<0.01	<0.01	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L	<0.01	<0.01	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	1	%	**109**	**103**	**105**	----	----
Toluene-D8	2037-26-5	1	%	**107**	**101**	**105**	----	----
4-Bromofluorobenzene	460-00-4	1	%	**118**	**112**	**115**	----	----
EP075(SIM)V: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.10	%	**80.7**	**91.3**	----	----	----
Anthracene-d10	1719-06-8	0.10	%	**99.1**	**108**	----	----	----
4-Terphenyl-d14	1718-51-0	0.10	%	**76.8**	**82.9**	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.2	%	**23.2**	**27.6**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.2	%	**47.6**	**52.1**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.2	%	**59.0**	**58.5**	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.2	%	**72.9**	**72.7**	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%	**55.2**	**61.3**	----	----	----
2-Fluorobiphenyl	321-60-8	0.2	%	**67.2**	**74.2**	----	----	----
Anthracene-d10	1719-06-8	0.2	%	**83.0**	**92.3**	----	----	----
4-Terphenyl-d14	1718-51-0	0.2	%	**69.0**	**74.9**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSG-BH221221	RIN221221	TB221221	----	----
				Sampling date / time	22-Dec-2021 00:00	22-Dec-2021 00:00	22-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2125901-006	EM2125901-007	EM2125901-008	--------	--------
					Result	Result	Result	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		109	103	105	----	----
Toluene-D8	2037-26-5	2	%		107	101	105	----	----
4-Bromofluorobenzene	460-00-4	2	%		118	112	115	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.002	%		104	102	----	----	----
13C8-PFOA	----	0.002	%		101	102	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)V: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	57
2-Chlorophenol-D4	93951-73-6	33	118
2.4.6-Tribromophenol	118-79-6	28	135
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	41	136
1.2-Dichlorobenzene-D4	2199-69-1	42	134
2-Fluorobiphenyl	321-60-8	45	137
Anthracene-d10	1719-06-8	53	141
4-Terphenyl-d14	1718-51-0	43	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EG035F: Dissolved Mercury by FIMS

(WATER) EG020F: Dissolved Metals by ICP-MS

(WATER) EP033: C1 - C4 Hydrocarbon Gases

(WATER) EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

(WATER) EG035T: Total Recoverable Mercury by FIMS

(WATER) EG020T: Total Metals by ICP-MS

(WATER) EG094T: Total metals in Fresh water by ORC-ICPMS

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11100

Project Number: 21135
Project Location: Northcote
Project Manager: SH
Contact: laboratory@compassenviro.com.au
~~compassenviro@esdat.com.au~~

Laboratory: ALS Springvale
Address: 4 Westall Road, Springvale
Phone No: 8549 9600 Fax: 8549 9626
Lab Quote Number: MEBQ-206-18

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ ~~5 days~~

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: Compass Water 2	Cr6+	Total + Free cyanide	Phenols *	Compass Solvents	PFAS 28 low level	Dissolved CH4	TOC	COD	BOD	Volatile Fatty Acids	Alkalinity	TRH / BTEXN	Compass Hydro
FSGBH1	1	17.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
DP08	2	17.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
DP02B	3	17.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
DP170222	4	17.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
RIN170222	5	17.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
TB170222	6	17.02.22		2	ICE	5													✓	✓

Analysis comments: Metal sceen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn. *For major anion & cation analysis please include ionic balance

Phenols: halogenated and non-halogenated **Please analyse Cr(VI) samples to achieve LOR of 0.001 mg/L (Method EG050LL)**

Environmental Division
Melbourne
Work Order Reference
EM2202680

Telephone : +61-3-8549 9600

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

* phenols - halogenated and non halogenated
~~Low holding time exceedances - restrict to direct~~

Relinquished by: CG	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 18.02.22	Date/time	Date/time.	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Received: ~~18/2, 13:05~~ Carrier: Courier
C/note:
Temp 3.1 °C Seal: Y ⊘
Ice / Ice Bricks / NA

Low level metals

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2202680**	Page	: 1 of 15
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 18-Feb-2022 13:45
Order number	: ----	Date Analysis Commenced	: 18-Feb-2022
C-O-C number	: 21135-11100	Issue Date	: 28-Feb-2022 15:19
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG050G LL-F: It is recognised that dissolved hexavalent chromium is greater than dissolved chromium by ORC-ICPMS for EM2202680 samples #1, 2 & 3. However, the difference is within limits of experimental variation of the methods. Results have been confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP074-WF: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074-WF: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total 1.2-Dichloroethene is the sum of the reported concentrations of trans-1.2-Dichloroethene and cis-1.2-Dichloroethene at or above the LOR.
- EP074-WF: Where reported, Sum of Trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample EM2202680 # 2. Confirmed by re-analysis.
- EP071: EM2202680_006 has LOR raised due to laboratory background.
- EK025SF: EM2202680 #4 Poor matrix spike recovery for free cyanide due to matrix effects. Confirmed by re-preparation and re-analysis.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Solvents (WP125) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
					EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**1270**	**1790**	**2800**	**1910**	<10
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**462**	**721**	**498**	**716**	**1**
Total Alkalinity as CaCO3	----	1	mg/L		**462**	**721**	**498**	**716**	**1**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**476**	**246**	**891**	**247**	<1
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**92**	**474**	**436**	**474**	<1
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**61**	**71**	**88**	**70**	<1
Magnesium	7439-95-4	1	mg/L		**98**	**91**	**120**	**88**	<1
Sodium	7440-23-5	1	mg/L		**216**	**420**	**692**	**408**	<1
Potassium	7440-09-7	1	mg/L		**17**	**39**	**34**	**38**	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.00004	mg/L		<0.00004	<0.00004	<0.00004	<0.00004	----
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.00004	mg/L		----	----	----	----	<0.00004
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level									
Hexavalent Chromium	18540-29-9	0.001	mg/L		**0.002**	**0.001**	**0.002**	<0.001	----
EG050G LL-T: Total Hexavalent Chromium by Discrete Analyser - Low Level									
Hexavalent Chromium	18540-29-9	0.001	mg/L		----	----	----	----	<0.001
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**46**	<5	**13**	<5	----
Antimony	7440-36-0	0.2	µg/L		**0.5**	<0.2	**0.9**	<0.2	----
Arsenic	7440-38-2	0.2	µg/L		**0.7**	**1.8**	**1.4**	**1.8**	----
Barium	7440-39-3	0.5	µg/L		**39.8**	**59.0**	**28.5**	**59.6**	----
Beryllium	7440-41-7	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	----
Boron	7440-42-8	5	µg/L		**724**	**915**	**1520**	**920**	----
Cadmium	7440-43-9	0.05	µg/L		**0.11**	<0.05	**0.17**	<0.05	----
Chromium	7440-47-3	0.2	µg/L		**0.8**	**0.4**	**0.4**	**0.4**	----
Cobalt	7440-48-4	0.1	µg/L		**2.1**	**1.5**	**1.4**	**1.6**	----
Copper	7440-50-8	0.5	µg/L		**137**	**4.5**	**45.9**	**5.0**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
					EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS - Continued									
Iron	7439-89-6	2	µg/L		**15**	**256**	**62**	**233**	----
Lead	7439-92-1	0.1	µg/L		**3.0**	**0.2**	**2.0**	**0.2**	----
Manganese	7439-96-5	0.5	µg/L		**123**	**182**	**39.8**	**184**	----
Molybdenum	7439-98-7	0.1	µg/L		**14.2**	**2.1**	**4.3**	**2.0**	----
Nickel	7440-02-0	0.5	µg/L		**45.6**	**13.3**	**15.7**	**13.2**	----
Selenium	7782-49-2	0.2	µg/L		**1.1**	**0.2**	**3.2**	**0.3**	----
Silver	7440-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	----
Tin	7440-31-5	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	----
Vanadium	7440-62-2	0.2	µg/L		**4.4**	<0.2	**1.0**	<0.2	----
Zinc	7440-66-6	1	µg/L		**825**	**63**	**279**	**60**	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	<5
Antimony	7440-36-0	0.2	µg/L		----	----	----	----	<0.2
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	<0.2
Barium	7440-39-3	0.5	µg/L		----	----	----	----	<0.5
Beryllium	7440-41-7	0.1	µg/L		----	----	----	----	<0.1
Boron	7440-42-8	5	µg/L		----	----	----	----	<5
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	<0.05
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	<0.2
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	<0.1
Copper	7440-50-8	0.5	µg/L		----	----	----	----	<0.5
Iron	7439-89-6	2	µg/L		----	----	----	----	<2
Lead	7439-92-1	0.1	µg/L		----	----	----	----	<0.1
Manganese	7439-96-5	0.5	µg/L		----	----	----	----	<0.5
Molybdenum	7439-98-7	0.1	µg/L		----	----	----	----	<0.1
Selenium	7782-49-2	0.2	µg/L		----	----	----	----	<0.2
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	<0.5
Silver	7440-22-4	0.1	µg/L		----	----	----	----	<0.1
Tin	7440-31-5	0.2	µg/L		----	----	----	----	<0.2
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	<0.2
Zinc	7440-66-6	1	µg/L		----	----	----	----	<1
EK025SF: Free CN by Segmented Flow Analyser									
Free Cyanide	----	0.004	mg/L		<0.004	<0.004	<0.004	<0.004	<0.004
EK026SF: Total CN by Segmented Flow Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
			Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
Compound	CAS Number	LOR	Unit	EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
				Result	Result	Result	Result	Result
EK026SF: Total CN by Segmented Flow Analyser - Continued								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.24**	**2.05**	**0.02**	**2.10**	<0.01
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.48**	<0.01	**0.54**	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**6.53**	<0.01	**93.8**	**0.05**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**7.01**	<0.01	**94.3**	**0.05**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.1**	**2.5**	**4.1**	**2.4**	<0.1
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**8.1**	**2.5**	**98.4**	**2.4**	<0.1
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**21.7**	**32.9**	**40.8**	**32.8**	**0.02**
ø Total Cations	----	0.01	meq/L	**20.9**	**30.3**	**45.2**	**29.4**	<0.01
ø Ionic Balance	----	0.01	%	**1.87**	**4.11**	**5.16**	**5.40**	**----**
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**21**	**17**	**23**	**16**	<1
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	**14**	**39**	**63**	**37**	<10
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	<2	<2	<2	<2	<2
EP033: C1 - C4 Hydrocarbon Gases								
Methane	74-82-8	10	µg/L	<10	**818**	<10	**832**	<10
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	**30**	**90**	**84**	**78**	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1
1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
			Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
Compound	CAS Number	LOR	Unit	EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds								
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10
Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1
Methylene chloride	75-09-2	2	µg/L	<2	<2	<2	<2	<2
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	74-97-5	1	µg/L	<1	<1	<1	<1	<1
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1
EP074G: Trihalomethanes								
Chloroform	67-66-3	1	µg/L	**4**	<1	<1	<1	<1
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
					EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	91-57-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	208-96-8	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthene	83-32-9	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	86-73-7	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	85-01-8	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	120-12-7	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	206-44-0	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	129-00-0	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Benz(a)anthracene	56-55-3	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	218-01-9	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	207-08-9	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	50-32-8	0.050	µg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
^ **Benzo(a)pyrene TEQ (zero)**	----	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L		<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L		<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	<4	<4	<4	<4
2.4.5-Trichlorophenol	95-95-4	2	µg/L		<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L		<2	<2	<2	<2	<2
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L		<2	<2	<2	<2	<2
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of Phenols (halogenated)**	----	2	µg/L		<2	<2	<2	<2	<2
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	<4	<4	<4	<4
2-Methylphenol	95-48-7	4	µg/L		<4	<4	<4	<4	<4
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	<4	<4	<4	<4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
Compound	CAS Number	LOR	Unit		EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2-Nitrophenol	88-75-5	4	µg/L		<4	<4	<4	<4	<4
2.4-Dimethylphenol	105-67-9	4	µg/L		<4	<4	<4	<4	<4
2.4-Dinitrophenol	51-28-5	100	µg/L		<100	<100	<100	<100	<100
4-Nitrophenol	100-02-7	50	µg/L		<50	<50	<50	<50	<50
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L		<50	<50	<50	<50	<50
Dinoseb	88-85-7	50	µg/L		<50	<50	<50	<50	<50
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L		<50	<50	<50	<50	<50
^ Cresols (Total)	----	4	µg/L		<4	<4	<4	<4	<4
^ Sum of Phenols (non-halogenated)	----	4	µg/L		<4	<4	<4	<4	<4
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	**50**	<50
C15 - C28 Fraction	----	100	µg/L		<100	**260**	**630**	**370**	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	**70**	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	**260**	**700**	**420**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	**220**	**110**	<100
>C16 - C34 Fraction	----	100	µg/L		<100	**250**	**490**	**340**	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	**250**	**710**	**450**	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	**220**	**110**	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
					EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L		**0.040**	**0.074**	**0.012**	**0.058**	<0.002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L		**0.024**	**0.039**	<0.002	**0.038**	<0.002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L		**0.081**	**0.181**	<0.002	**0.189**	<0.002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L		**0.002**	**0.008**	<0.002	**0.006**	<0.002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L		**0.036**	**0.170**	**0.043**	**0.178**	<0.002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L		**0.07**	**0.23**	<0.01	**0.23**	<0.01
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L		**0.256**	**0.181**	<0.002	**0.200**	<0.002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L		**0.265**	**0.209**	<0.002	**0.211**	<0.002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L		**0.056**	**0.101**	<0.002	**0.092**	<0.002
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L		**0.166**	**0.351**	**0.014**	**0.350**	<0.002
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L		**0.002**	**0.028**	<0.002	**0.028**	<0.002
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L		<0.002	**0.002**	<0.002	<0.002	<0.002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	**0.002**	<0.002	**0.002**	<0.002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
Compound	CAS Number	LOR	Unit		EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	**0.002**	<0.002	**0.002**	<0.002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		<0.002	**0.008**	<0.002	**0.009**	<0.002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		**0.006**	**0.015**	**0.056**	**0.016**	<0.005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP231P: PFAS Sums									
Sum of PFAS	----	0.002	µg/L		**1.00**	**1.60**	**0.125**	**1.61**	<0.002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L		**0.117**	**0.351**	**0.043**	**0.367**	<0.002
Sum of PFAS (WA DER List)	----	0.002	µg/L		**0.976**	**1.51**	**0.125**	**1.52**	<0.002
WP125: Miscellaneous Alcohols & Solvents									
Acetone	67-64-1	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Acrylonitrile	107-13-1	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Ethylhexyl Acrylate	103-11-7	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Isopropanol	67-63-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Methyl Ethyl Ketone	78-93-3	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	1	%		**99.3**	**103**	**82.0**	**105**	**89.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FSGBH1	DP08	DP02B	DP170222	RIN170222
				Sampling date / time	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00	17-Feb-2022 00:00
Compound	CAS Number	LOR	Unit		EM2202680-001	EM2202680-002	EM2202680-003	EM2202680-004	EM2202680-005
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates - Continued									
Toluene-D8	2037-26-5	1	%		103	107	75.2	112	90.2
4-Bromofluorobenzene	460-00-4	1	%		110	112	75.4	119	102
EP075(SIM)V: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.10	%		79.0	75.9	61.5	74.1	65.2
Anthracene-d10	1719-06-8	0.10	%		78.9	81.5	65.8	78.6	74.6
4-Terphenyl-d14	1718-51-0	0.10	%		90.6	92.2	82.2	90.6	86.3
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.2	%		23.1	30.2	19.9	31.5	32.2
2-Chlorophenol-D4	93951-73-6	0.2	%		51.8	61.5	52.5	61.8	62.3
2.4.6-Tribromophenol	118-79-6	0.2	%		57.3	66.2	57.7	66.9	59.7
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.2	%		63.0	71.8	69.2	74.3	72.3
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%		61.0	70.1	67.2	72.4	71.3
2-Fluorobiphenyl	321-60-8	0.2	%		65.3	74.2	70.8	76.1	75.1
Anthracene-d10	1719-06-8	0.2	%		66.7	76.9	66.6	77.7	75.1
4-Terphenyl-d14	1718-51-0	0.2	%		59.0	66.8	63.0	68.0	65.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		99.3	103	82.0	105	89.4
Toluene-D8	2037-26-5	2	%		103	107	75.2	112	90.2
4-Bromofluorobenzene	460-00-4	2	%		110	112	75.4	119	102
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.002	%		102	93.3	93.8	94.0	104
13C8-PFOA	----	0.002	%		100	87.2	94.5	92.3	105

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB170222	----	----	----	----
				Sampling date / time	17-Feb-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2202680-006	--------	--------	--------	--------
					Result	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	1	µg/L		<1	----	----	----	----
1.2-Dichloropropane	78-87-5	1	µg/L		<1	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L		<2	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L		<2	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L		<1	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Chloromethane	74-87-3	10	µg/L		<10	----	----	----	----
Vinyl chloride	75-01-4	0.2	µg/L		<0.2	----	----	----	----
Bromomethane	74-83-9	10	µg/L		<10	----	----	----	----
Trichlorofluoromethane	75-69-4	10	µg/L		<10	----	----	----	----
1.1-Dichloroethene	75-35-4	1	µg/L		<1	----	----	----	----
Methylene chloride	75-09-2	2	µg/L		<2	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	1	µg/L		<1	----	----	----	----
1.1-Dichloroethane	75-34-3	1	µg/L		<1	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	1	µg/L		<1	----	----	----	----
1.1.1-Trichloroethane	71-55-6	1	µg/L		<1	----	----	----	----
1.1-Dichloropropylene	563-58-6	1	µg/L		<1	----	----	----	----
Carbon Tetrachloride	56-23-5	1	µg/L		<1	----	----	----	----
1.2-Dichloroethane	107-06-2	1	µg/L		<1	----	----	----	----
Trichloroethene	79-01-6	1	µg/L		<1	----	----	----	----
Dibromomethane	74-95-3	1	µg/L		<1	----	----	----	----
1.1.2-Trichloroethane	79-00-5	1	µg/L		<1	----	----	----	----
1.3-Dichloropropane	142-28-9	1	µg/L		<1	----	----	----	----
Tetrachloroethene	127-18-4	1	µg/L		<1	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L		<1	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L		<1	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L		<1	----	----	----	----
1.2.3-Trichloropropane	96-18-4	1	µg/L		<1	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L		<1	----	----	----	----
Bromochloromethane	74-97-5	1	µg/L		<1	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	1	µg/L		<1	----	----	----	----
Bromobenzene	108-86-1	1	µg/L		<1	----	----	----	----
2-Chlorotoluene	95-49-8	1	µg/L		<1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB170222	----	----	----	----
				Sampling date / time	17-Feb-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2202680-006	--------	--------	--------	--------
					Result	----	----	----	----
EP074F: Halogenated Aromatic Compounds - Continued									
4-Chlorotoluene	106-43-4	1	µg/L		<1	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	1	µg/L		<1	----	----	----	----
Bromodichloromethane	75-27-4	1	µg/L		<1	----	----	----	----
Dibromochloromethane	124-48-1	1	µg/L		<1	----	----	----	----
Bromoform	75-25-2	1	µg/L		<1	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<90	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	1	%		**92.2**	----	----	----	----
Toluene-D8	2037-26-5	1	%		**98.2**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB170222	----	----	----	----
				Sampling date / time	17-Feb-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2202680-006	--------	--------	--------	--------
					Result	----	----	----	----
EP074S: VOC Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	1	%		**107**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**92.2**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**98.2**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**107**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)V: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	57
2-Chlorophenol-D4	93951-73-6	33	118
2.4.6-Tribromophenol	118-79-6	28	135
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	41	136
1.2-Dichlorobenzene-D4	2199-69-1	42	134
2-Fluorobiphenyl	321-60-8	45	137
Anthracene-d10	1719-06-8	53	141
4-Terphenyl-d14	1718-51-0	43	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

(WATER) EP033: C1 - C4 Hydrocarbon Gases

(WATER) EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

(WATER) EG035F: Dissolved Mercury by FIMS

(WATER) EG094T: Total metals in Fresh water by ORC-ICPMS

(WATER) EG035T: Total Mercury by FIMS

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135 - 1104

Project Number: 21135	Laboratory: **ALS Springvale**	Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days	
Project Location: Northcote	Address: 4 Westall Road, Springvale		
Project Manager: SH	Phone No. 8549 9600 Fax: 8549 9626		
Contact: laboratory@compassenviro.com.au compassenviro@esdat.com.au	Lab Quote Number: MEBQ-266-18		

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: Compass Water VOC	Cr6+	Total + Free Cyanide	Phenols *	Compass Solvents	PFAS 28 low level	Dissolved Cr6+	TOC	COD	BOD	Sulphide Filtered Acidified	Alkalinity	TRH / BTEXN	Compass Metals (Hg/Cr6)
FSGBH5	1	18.02.22		2	ICE	21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
FSGBH9	2	↓		↓	↓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
RIN180222	3						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
TB180222	4					5													✓	✓

Analysis comments: Metal sceen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

*For major anion & cation analysis please include ionic balance

Please analyse Cr(VI) samples to achieve LOR of 0.001 mg/L (Method EG050LL)

* Phenols - halogenated and non halogenated

Low holding time analytes to be extracted on arrival.

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 18.02.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Low level metals

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2202683**	Page	: 1 of 12
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: LAB RESULTS	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 18-Feb-2022 14:20
Order number	: ----	Date Analysis Commenced	: 21-Feb-2022
C-O-C number	: 21135-11104	Issue Date	: 03-Mar-2022 15:14
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP074-WF: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074-WF: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-WF: Where reported, Total 1.2-Dichloroethene is the sum of the reported concentrations of trans-1.2-Dichloroethene and cis-1.2-Dichloroethene at or above the LOR.
- EP074-WF: Where reported, Sum of Trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- ES026SP: Sample EM2202683-001 required dilution prior to COD analysis due to matrix interferences. LOR values have been adjusted accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- EP075(SIM)-LL: MB has LOR raised for 2-Methylnaphthalene due to laboratory background.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Solvents (WP125) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**4190**	**1570**	<10	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**296**	**502**	<1	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**296**	**502**	<1	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**211**	**421**	<1	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**2420**	**136**	<1	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**69**	**22**	<1	----	----
Magnesium	7439-95-4	1	mg/L		**103**	**38**	<1	----	----
Sodium	7440-23-5	1	mg/L		**1320**	**428**	<1	----	----
Potassium	7440-09-7	1	mg/L		**20**	**12**	<1	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.45**	**0.08**	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L		**0.080**	**0.062**	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0001**	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.001**	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.002**	**0.004**	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.250**	**0.059**	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.004**	**0.001**	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.039**	**0.445**	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.012**	**0.012**	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.033**	**0.028**	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Silver	7440-22-4	0.001	mg/L		**0.001**	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.964**	**0.341**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
			Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit	EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
				Result	Result	Result	Result	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Boron	7440-42-8	0.05	mg/L	**0.06**	**1.70**	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.08**	<0.05	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	----	<0.01	----	----
Antimony	7440-36-0	0.001	mg/L	----	----	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	<0.001	----	----
Beryllium	7440-41-7	0.001	mg/L	----	----	<0.001	----	----
Barium	7440-39-3	0.001	mg/L	----	----	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	----	----	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	----	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	----	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	----	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	----	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	----	----	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	----	----	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	----	----	<0.01	----	----
Silver	7440-22-4	0.001	mg/L	----	----	<0.001	----	----
Tin	7440-31-5	0.001	mg/L	----	----	<0.001	----	----
Vanadium	7440-62-2	0.01	mg/L	----	----	<0.01	----	----
Zinc	7440-66-6	0.005	mg/L	----	----	<0.005	----	----
Boron	7440-42-8	0.05	mg/L	----	----	<0.05	----	----
Iron	7439-89-6	0.05	mg/L	----	----	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	<0.0001	----	----
EG050T: Total Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK025SF: Free CN by Segmented Flow Analyser								
Free Cyanide	----	0.004	mg/L	<0.004	<0.004	<0.004	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	<0.004	----	----
EK055G: Ammonia as N by Discrete Analyser								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EK055G: Ammonia as N by Discrete Analyser - Continued									
Ammonia as N	7664-41-7	0.01	mg/L		**0.10**	**0.84**	<0.01	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.10**	**0.34**	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.11**	**29.8**	<0.01	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.21**	**30.1**	<0.01	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.6**	**2.5**	<0.1	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.8**	**32.6**	<0.1	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**78.6**	**22.6**	<0.01	----	----
ø Total Cations	----	0.01	meq/L		**69.8**	**23.1**	<0.01	----	----
ø Ionic Balance	----	0.01	%		**----**	**----**	<0.01	----	----
ø Ionic Balance	----	0.01	%		**5.88**	**1.13**	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		<1	**13**	<1	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	----	10	mg/L		**39**	**16**	**11**	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	<2	----	----
EP033: C1 - C4 Hydrocarbon Gases									
Methane	74-82-8	10	µg/L		<10	<10	<10	----	----
EP045: Volatile Acids as CH3COOH									
Volatile Acids as Acetic Acid	----	5	mg/L		**66**	**71**	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	1	µg/L		<1	<1	<1	<1	----
1.2-Dichloropropane	78-87-5	1	µg/L		<1	<1	<1	<1	----
cis-1.3-Dichloropropylene	10061-01-5	2	µg/L		<2	<2	<2	<2	----
trans-1.3-Dichloropropylene	10061-02-6	2	µg/L		<2	<2	<2	<2	----
1.2-Dibromoethane (EDB)	106-93-4	1	µg/L		<1	<1	<1	<1	----
EP074E: Halogenated Aliphatic Compounds									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
			Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit	EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----
Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	----
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----
Methylene chloride	75-09-2	2	µg/L	<2	<2	<2	<2	----
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	----
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----
Bromochloromethane	74-97-5	1	µg/L	<1	<1	<1	<1	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	1	µg/L	**4**	**2**	<1	<1	----
Bromodichloromethane	75-27-4	1	µg/L	**2**	<1	<1	<1	----
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
			Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit	EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
2-Methylnaphthalene	91-57-6	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Acenaphthylene	208-96-8	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Acenaphthene	83-32-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Fluorene	86-73-7	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Phenanthrene	85-01-8	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Anthracene	120-12-7	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Fluoranthene	206-44-0	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Pyrene	129-00-0	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benz(a)anthracene	56-55-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Chrysene	218-01-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(k)fluoranthene	207-08-9	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(a)pyrene	50-32-8	0.050	µg/L	<0.050	<0.050	<0.050	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Dibenz(a.h)anthracene	53-70-3	0.10	µg/L	<0.10	<0.10	<0.10	----	----
Benzo(g.h.i)perylene	191-24-2	0.10	µg/L	<0.10	<0.10	<0.10	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.10	µg/L	<0.10	<0.10	<0.10	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.10	µg/L	<0.10	<0.10	<0.10	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	<4	<4	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	2	µg/L	<2	<2	<2	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	2	µg/L	<2	<2	<2	----	----
^ **Sum of Phenols (halogenated)**	----	2	µg/L	<2	<2	<2	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	4	µg/L	<4	<4	<4	----	----
2-Methylphenol	95-48-7	4	µg/L	<4	<4	<4	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2-Nitrophenol	88-75-5	4	µg/L		<4	<4	<4	----	----
2.4-Dimethylphenol	105-67-9	4	µg/L		<4	<4	<4	----	----
2.4-Dinitrophenol	51-28-5	100	µg/L		<100	<100	<100	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	<50	<50	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	50	µg/L		<50	<50	<50	----	----
Dinoseb	88-85-7	50	µg/L		<50	<50	<50	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	50	µg/L		<50	<50	<50	----	----
^ Cresols (Total)	----	4	µg/L		<4	<4	<4	----	----
^ Sum of Phenols (non-halogenated)	----	4	µg/L		<4	<4	<4	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.002	µg/L		<0.002	**0.138**	<0.002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.002	µg/L		<0.002	**0.103**	<0.002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.002	µg/L		<0.002	**0.383**	<0.002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.002	µg/L		<0.002	**0.022**	<0.002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.002	µg/L		<0.002	**0.138**	<0.002	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.002	µg/L		<0.002	<0.002	<0.002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.01	µg/L		<0.01	**0.01**	<0.01	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.002	µg/L		**0.021**	**0.044**	<0.002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.002	µg/L		**0.022**	**0.106**	<0.002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.002	µg/L		**0.003**	**0.022**	<0.002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.002	µg/L		<0.002	**0.063**	<0.002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.002	µg/L		<0.002	<0.002	<0.002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.002	µg/L		<0.002	<0.002	<0.002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.002	µg/L		<0.002	<0.002	<0.002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.002	µg/L		<0.002	<0.002	<0.002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.002	µg/L		<0.002	<0.002	<0.002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.002	µg/L		<0.002	<0.002	<0.002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.005	µg/L		<0.005	<0.005	<0.005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.002	µg/L		<0.002	<0.002	<0.002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.002	µg/L		<0.002	**0.012**	<0.002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.005	µg/L		<0.005	<0.005	<0.005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.005	µg/L		**0.009**	**0.030**	<0.005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.005	µg/L		<0.005	**0.006**	<0.005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.005	µg/L		<0.005	<0.005	<0.005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.002	µg/L		**0.055**	**1.08**	<0.002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.002	µg/L		<0.002	**0.521**	<0.002	----	----
Sum of PFAS (WA DER List)	----	0.002	µg/L		**0.055**	**0.940**	<0.002	----	----
WP125: Miscellaneous Alcohols & Solvents									
Acetone	67-64-1	0.01	mg/L		<0.01	<0.01	----	----	----
Acrylonitrile	107-13-1	0.01	mg/L		<0.01	<0.01	----	----	----
Ethylhexyl Acrylate	103-11-7	0.01	mg/L		<0.01	<0.01	----	----	----
Isopropanol	67-63-0	0.01	mg/L		<0.01	<0.01	----	----	----
Methyl Ethyl Ketone	78-93-3	0.01	mg/L		<0.01	<0.01	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.01	mg/L		<0.01	<0.01	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	1	%		**104**	**103**	**104**	**100**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	FS6BH5	FS6BH9	RIN180222	TB18022	----
				Sampling date / time	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	18-Feb-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2202683-001	EM2202683-002	EM2202683-003	EM2202683-004	--------
					Result	Result	Result	Result	----
EP074S: VOC Surrogates - Continued									
Toluene-D8	2037-26-5	1	%		109	111	111	105	----
4-Bromofluorobenzene	460-00-4	1	%		105	105	106	102	----
EP075(SIM)V: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.10	%		75.2	71.3	67.3	----	----
Anthracene-d10	1719-06-8	0.10	%		80.7	75.2	71.5	----	----
4-Terphenyl-d14	1718-51-0	0.10	%		93.2	88.0	80.1	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.2	%		30.2	24.6	34.6	----	----
2-Chlorophenol-D4	93951-73-6	0.2	%		53.0	51.5	66.6	----	----
2.4.6-Tribromophenol	118-79-6	0.2	%		52.4	54.6	63.3	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.2	%		60.9	63.1	79.9	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.2	%		54.1	60.5	76.0	----	----
2-Fluorobiphenyl	321-60-8	0.2	%		65.1	70.1	87.6	----	----
Anthracene-d10	1719-06-8	0.2	%		61.0	62.5	79.5	----	----
4-Terphenyl-d14	1718-51-0	0.2	%		62.5	67.2	83.5	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		100	99.2	99.7	96.5	----
Toluene-D8	2037-26-5	2	%		96.4	98.6	97.9	93.0	----
4-Bromofluorobenzene	460-00-4	2	%		107	108	108	104	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.002	%		98.2	103	101	----	----
13C8-PFOA	----	0.002	%		106	107	104	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)V: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	57
2-Chlorophenol-D4	93951-73-6	33	118
2.4.6-Tribromophenol	118-79-6	28	135
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	41	136
1.2-Dichlorobenzene-D4	2199-69-1	42	134
2-Fluorobiphenyl	321-60-8	45	137
Anthracene-d10	1719-06-8	53	141
4-Terphenyl-d14	1718-51-0	43	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP033: C1 - C4 Hydrocarbon Gases

Rebatch

Client / Client code: COMPENV
Project: 21135
Project Manger: STEPHEN HARVEY
Date /time sample rec: 18/02/2022 13:45
Date/time Instructions rec: Wed 9/03/2022 3:14 PM
Due date: Thursday, 17 March 2022
Due date surcharge: **standard**

CS Contact: KATIE DAVIS
Additional Information:

Environmental Division
Melbourne
Work Order Reference
EM2204262



Telephone : +61-3-8549 9600

New Lab ID	Sample information						Number of Containers	Analysis									Shortest Holding time expiry
								Standard					Leach				
	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container		TRH silica gel cleanup									
	DP02B	17/02/2022 0:00	EM2202680	3	USE EXTRACT			X									29-Mar-22
	DP170222	17/02/2022 0:00	EM2202680	4	USE EXTRACT			X									29-Mar-22
						TOTAL	0										

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2204262**	Page	: 1 of 3
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 18-Feb-2022 13:45
Order number	: ----	Date Analysis Commenced	: 11-Mar-2022
C-O-C number	: ----	Issue Date	: 15-Mar-2022 16:38
Sampler	: ----		
Site	: ----		
Quote number	: MEBQ/266/21		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- This is a rebatch of EM2202680
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP071SG: EM2204262_002 Particular sample has LOR raised due to laboratory background.

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Sample ID	**DP02B**	**DP170222**	**----**	**----**	**----**
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EM2204262-001**	**EM2204262-002**	**--------**	**--------**	**--------**
					Result	Result	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup									
C10 - C14 Fraction	----	50	µg/L		**80**	<60	**----**	**----**	**----**
C15 - C28 Fraction	----	100	µg/L		**270**	<120	**----**	**----**	**----**
C29 - C36 Fraction	----	50	µg/L		<50	<60	**----**	**----**	**----**
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**350**	<60	**----**	**----**	**----**
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup									
>C10 - C16 Fraction	----	100	µg/L		**150**	<120	**----**	**----**	**----**
>C16 - C34 Fraction	----	100	µg/L		**190**	<120	**----**	**----**	**----**
>C34 - C40 Fraction	----	100	µg/L		<100	<120	**----**	**----**	**----**
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**340**	<120	**----**	**----**	**----**
>C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		**150**	<120	**----**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**82.0**	**105**	**----**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**75.2**	**112**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**75.4**	**119**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135 - 110329

Project Number:	21135
Project Location:	Northcote
Project Manager:	SH
Contact: laboratory@compassenviro.com.au compassenviro@esdat.com.au	
Eurofins	
Address: 6 Monterey Road, Dandenong Sou	
Phone No: 8564 5000 Fax: 9564 7190	
Lab Quote Number:	

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Alkalinity	Metal screen (see below)	Cr6+	Nitrogen - speciated	Total + Free cyanide	BTEX	HVOCs	CHCs	Non chlorinated solvents	PFAS 28 low level	Dissolved Chromium	TOC	COD	Volatile Fatty Acids	Comments
FS6 - BH203		22.12.21		2	ICE	17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Temp: 23.12.21 1:48pm
Correction: 10.7 +0.5
Final Temp: 11.2c
Courier

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

Report Sulphate as SO4

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 23.12.21.	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

852931

COCform Rev.5 11 August 2009

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Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Stephen Harvey**

Report **852931-W-V2**
Project name NORTHCOTE
Project ID 21135
Received Date Dec 23, 2021

Client Sample ID			**FS6-BH203**
Sample Matrix			**Water**
Eurofins Sample No.			**M21-De56670**
Date Sampled			**Dec 22, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Solvent Screen			
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	0.009
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Acrylonitrile	1.25	mg/L	< 1.25
Ethyl hexyl acrylate	0.1	mg/L	< 0.1
Isopropanol	0.05	mg/L	< 0.05
n-Hexane	0.05	mg/L	< 0.05
Trichloroethene	0.001	mg/L	< 0.001
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99
Dissolved Gases			
Methane	0.05	mg/L	< 0.05

Client Sample ID			FS6-BH203
Sample Matrix			Water
Eurofins Sample No.			M21-De56670
Date Sampled			Dec 22, 2021
Test/Reference	LOR	Unit	
Halogenated Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Methylene Chloride	0.005	mg/L	< 0.005
Tetrachloroethene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	99
Toluene-d8 (surr.)	1	%	96
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001

Client Sample ID			FS6-BH203
Sample Matrix			Water
Eurofins Sample No.			M21-De56670
Date Sampled			Dec 22, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	58
p-Terphenyl-d14 (surr.)	1	%	140
Chlorinated Hydrocarbons			
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
Benzal chloride	0.0001	mg/L	< 0.0001
Benzotrichloride	0.0001	mg/L	< 0.0001
Benzyl chloride	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Pentachlorobenzene	0.005	mg/L	< 0.005
Tetrachloro-m-xylene (surr.)	1	%	111
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
Total cresols*	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003

Client Sample ID			FS6-BH203
Sample Matrix			Water
Eurofins Sample No.			M21-De56670
Date Sampled			Dec 22, 2021
Test/Reference	LOR	Unit	
Phenols (non-Halogenated)			
Phenol-d6 (surr.)	1	%	42
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Volatile Fatty Acids (VFA) by GC-MS			
Acetic Acid	5	mg/L	< 5
Propionic acid	5	mg/L	< 5
Isobutyric acid	5	mg/L	< 5
Butyric acid	5	mg/L	< 5
Isovaleric acid	5	mg/L	< 5
Valeric acid	5	mg/L	< 5
4-Methylvaleric acid	5	mg/L	< 5
Hexanoic acid	5	mg/L	< 5
Heptanoic acid	5	mg/L	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5
Ammonia (as N)	0.01	mg/L	0.81
Chemical Oxygen Demand (COD)	25	mg/L	40
Chromium (hexavalent)	0.005	mg/L	< 0.005
Cyanide (free)	0.005	mg/L	< 0.005
Cyanide (total)	0.005	mg/L	< 0.005
Nitrate & Nitrite (as N)	0.05	mg/L	1.4
Nitrate (as N)	0.02	mg/L	1.3
Nitrite (as N)	0.02	mg/L	0.04
Organic Nitrogen (as N)*	0.2	mg/L	0.29
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.1
Total Nitrogen (as N)*	0.2	mg/L	2.5
Total Organic Carbon	5	mg/L	< 5
Alkalinity (speciated)			
Total Alkalinity (as CaCO3)	20	mg/L	570
Heavy Metals			
Aluminium (filtered)	0.05	mg/L	2.7
Antimony (filtered)	0.005	mg/L	< 0.005
Arsenic (filtered)	0.001	mg/L	0.001
Barium (filtered)	0.02	mg/L	0.25
Beryllium (filtered)	0.001	mg/L	< 0.001
Boron (filtered)	0.05	mg/L	0.86
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	0.004
Cobalt (filtered)	0.001	mg/L	0.089
Copper (filtered)	0.001	mg/L	0.010
Iron (filtered)	0.05	mg/L	6.8
Lead (filtered)	0.001	mg/L	0.004
Manganese (filtered)	0.005	mg/L	2.1
Mercury (filtered)	0.0001	mg/L	< 0.0001
Molybdenum (filtered)	0.005	mg/L	0.007
Nickel (filtered)	0.001	mg/L	0.039
Selenium (filtered)	0.001	mg/L	0.004
Silver (filtered)	0.005	mg/L	< 0.005
Tin (filtered)	0.005	mg/L	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	0.42

Client Sample ID			FS6-BH203
Sample Matrix			Water
Eurofins Sample No.			M21-De56670
Date Sampled			Dec 22, 2021
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	0.001	ug/L	0.196
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.001	ug/L	0.231
Sum of PFASs (n=30)*	0.005	ug/L	0.433
Sum of US EPA PFAS (PFOS + PFOA)*	0.001	ug/L	0.133
Sum of WA DWER PFAS (n=10)*	0.005	ug/L	0.368
Perfluoroalkyl sulfonamido substances- Trace			
Perfluorooctane sulfonamide (FOSA)[N11]	0.005	ug/L	< 0.005
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.005	ug/L	< 0.005
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.005	ug/L	< 0.005
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.005	ug/L	< 0.005
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.005	ug/L	< 0.005
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.005	ug/L	< 0.005
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.005	ug/L	< 0.005
13C8-FOSA (surr.)	1	%	86
D3-N-MeFOSA (surr.)	1	%	167
D5-N-EtFOSA (surr.)	1	%	147
D7-N-MeFOSE (surr.)	1	%	50
D9-N-EtFOSE (surr.)	1	%	47
D5-N-EtFOSAA (surr.)	1	%	82
D3-N-MeFOSAA (surr.)	1	%	65
Perfluoroalkyl carboxylic acids (PFCAs) - Trace			
Perfluorobutanoic acid (PFBA)[N11]	0.005	ug/L	0.017
Perfluoropentanoic acid (PFPeA)[N11]	0.001	ug/L	0.036
Perfluorohexanoic acid (PFHxA)[N11]	0.001	ug/L	0.041
Perfluoroheptanoic acid (PFHpA)[N11]	0.001	ug/L	0.016
Perfluorooctanoic acid (PFOA)[N11]	0.001	ug/L	0.035
Perfluorononanoic acid (PFNA)[N11]	0.001	ug/L	0.034
Perfluorodecanoic acid (PFDA)[N11]	0.001	ug/L	0.003
Perfluorotridecanoic acid (PFTrDA)[N15]	0.001	ug/L	< 0.001
Perfluoroundecanoic acid (PFUnDA)[N11]	0.001	ug/L	< 0.001
Perfluorododecanoic acid (PFDoDA)[N11]	0.001	ug/L	< 0.001
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.001	ug/L	< 0.001
13C4-PFBA (surr.)	1	%	54
13C5-PFPeA (surr.)	1	%	71
13C5-PFHxA (surr.)	1	%	94
13C4-PFHpA (surr.)	1	%	87
13C8-PFOA (surr.)	1	%	88
13C5-PFNA (surr.)	1	%	109
13C6-PFDA (surr.)	1	%	62
13C2-PFUnDA (surr.)	1	%	88
13C2-PFDoDA (surr.)	1	%	91
13C2-PFTeDA (surr.)	1	%	92

Client Sample ID			FS6-BH203
Sample Matrix			**Water**
Eurofins Sample No.			**M21-De56670**
Date Sampled			**Dec 22, 2021**
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFSAs)- Trace			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.001	ug/L	0.017
Perfluorononanesulfonic acid (PFNS)[N15]	0.001	ug/L	< 0.001
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.001	ug/L	0.009
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.001	ug/L	0.015
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.001	ug/L	0.098
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.001	ug/L	0.004
Perfluorooctanesulfonic acid (PFOS)[N11]	0.001	ug/L	0.098
Perfluorodecanesulfonic acid (PFDS)[N15]	0.001	ug/L	< 0.001
13C3-PFBS (surr.)	1	%	76
18O2-PFHxS (surr.)	1	%	75
13C8-PFOS (surr.)	1	%	76
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.001	ug/L	< 0.001
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.005	ug/L	0.010
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.001	ug/L	< 0.001
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.001	ug/L	< 0.001
13C2-4:2 FTSA (surr.)	1	%	117
13C2-6:2 FTSA (surr.)	1	%	93
13C2-8:2 FTSA (surr.)	1	%	124
13C2-10:2 FTSA (surr.)	1	%	45

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Dec 31, 2021	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Solvent Screen	Melbourne	Dec 31, 2021	14 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS and USEPA 8000			
Dissolved Gases	Melbourne	Dec 31, 2021	14 Days
- Method: in-house method LTM-ORG-2070 by Headspace GC-FID			
Halogenated Volatile Organics	Melbourne	Dec 31, 2021	7 Days
- Method: USEPA 8260 MGT 350A Halogenated Volatile Organics			
Chlorinated Hydrocarbons	Melbourne	Dec 31, 2021	7 Days
- Method: USEPA 8121 Chlorinated Hydrocarbons			
Volatile Fatty Acids (VFA) by GC-MS	Melbourne	Dec 31, 2021	28 Day
- Method: LTM-ORG-2360 Determination of Volatile Fatty Acids in Water by GC-MS			
Chemical Oxygen Demand (COD)	Melbourne	Jan 04, 2022	28 Days
- Method: LTM-INO-4220 Determination of COD in Water			
Chromium (hexavalent)	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			
Cyanide (free)	Melbourne	Dec 31, 2021	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Cyanide (total)	Melbourne	Dec 31, 2021	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Total Organic Carbon	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Alkalinity (speciated)	Melbourne	Dec 31, 2021	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Aluminium (filtered)	Melbourne	Jan 07, 2022	6 Months
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Melbourne	Jan 04, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Iron (filtered)	Melbourne	Jan 07, 2022	6 Month
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mobil Metals : Metals M15	Melbourne	Jan 04, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Nitrogens (speciated)			
Ammonia (as N)	Melbourne	Dec 31, 2021	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 31, 2021	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 31, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Organic Nitrogen (as N)*	Melbourne	Dec 23, 2021	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 31, 2021	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Per- and Polyfluoroalkyl Substances (PFASs) - Trace			
PFASs Summations	Melbourne	Dec 23, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl sulfonamido substances- Trace	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl carboxylic acids (PFCAs) - Trace	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl sulfonic acids (PFSAs)- Trace	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			

eurofins | Environment Testing

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Project Name: NORTHCOTE
Project ID: 21135

Order No.:
Report #: 852931
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Dec 23, 2021 1:48 PM
Due: Jan 10, 2022
Priority: 10 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail	Antimony (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Cadmium (filtered)	Chemical Oxygen Demand (COD)	Chromium (filtered)	Chromium (hexavalent)	Cobalt (filtered)	Copper (filtered)	Cyanide (free)	Cyanide (total)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Methane	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Tin (filtered)	Total Alkalinity (as CaCO3)	Total Organic Carbon	Vanadium (filtered)	Zinc (filtered)	Chlorinated Hydrocarbons	Solvent Screen	Nitrogens (speciated)	Halogenated Volatile Organics	Eurofins Suite B4A	Per- and Polyfluoroalkyl Substances (PFASs) - Trace	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																	
Brisbane Laboratory - NATA # 1261 Site # 20794																																	
Mayfield Laboratory - NATA # 1261 Site # 25079																																	
Perth Laboratory - NATA # 2377 Site # 2370																																	
External Laboratory																																	

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	FS6-BH203	Dec 22, 2021		Water	M21-De56670	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Solvent Screen							
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Acrylonitrile	mg/L	< 1.25			1.25	Pass	
Ethyl hexyl acrylate	mg/L	< 0.1			0.1	Pass	
Isopropanol	mg/L	< 0.05			0.05	Pass	
n-Hexane	mg/L	< 0.05			0.05	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Dissolved Gases							
Methane	mg/L	< 0.05			0.05	Pass	
Method Blank							
Halogenated Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Chlorinated Hydrocarbons							
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
Benzal chloride	mg/L	< 0.0001			0.0001	Pass	
Benzotrichloride	mg/L	< 0.0001			0.0001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	mg/L	< 5			5	Pass	
Propionic acid	mg/L	< 5			5	Pass	
Isobutyric acid	mg/L	< 5			5	Pass	
Butyric acid	mg/L	< 5			5	Pass	
Isovaleric acid	mg/L	< 5			5	Pass	
Valeric acid	mg/L	< 5			5	Pass	
4-Methylvaleric acid	mg/L	< 5			5	Pass	
Hexanoic acid	mg/L	< 5			5	Pass	
Heptanoic acid	mg/L	< 5			5	Pass	
Total VFA as Acetic Acid Equivalents	mg/L	< 5			5	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Cyanide (free)	mg/L	< 0.005			0.005	Pass	
Cyanide (total)	mg/L	< 0.005			0.005	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Molybdenum (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Tin (filtered)	mg/L	< 0.005			0.005	Pass	
Vanadium (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.005			0.005	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.005			0.005	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.005			0.005	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.005			0.005	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.005			0.005	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.005			0.005	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.005			0.005	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.001			0.001	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.001			0.001	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.001			0.001	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.001			0.001	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.001			0.001	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.001			0.001	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.001			0.001	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.001			0.001	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.001			0.001	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.001			0.001	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)- Trace							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.001			0.001	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.001			0.001	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.001			0.001	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.001			0.001	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.001			0.001	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.001			0.001	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.001			0.001	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.001			0.001	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.001			0.001	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.005			0.005	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.001			0.001	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	122			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	%	88			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	81			70-130	Pass	
LCS - % Recovery							
Solvent Screen							
1.1.1-Trichloroethane	%	95			70-130	Pass	
Ethyl hexyl acrylate	%	120			70-130	Pass	
Isopropanol	%	105			70-130	Pass	
n-Hexane	%	80			70-130	Pass	
Trichloroethene	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	87			70-130	Pass	
Toluene	%	84			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	85			70-130	Pass	
Xylenes - Total*	%	84			70-130	Pass	
LCS - % Recovery							
Dissolved Gases							
Methane	%	110			70-130	Pass	
LCS - % Recovery							
Halogenated Volatile Organics							
1.1-Dichloroethene	%	112			70-130	Pass	
1.2-Dichlorobenzene	%	89			70-130	Pass	
1.2-Dichloroethane	%	119			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	88			70-130	Pass	
Anthracene	%	77			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	105			70-130	Pass	
Benzo(g.h.i)perylene	%	90			70-130	Pass	
Benzo(k)fluoranthene	%	120			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	75			70-130	Pass	
Fluoranthene	%	72			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	83			70-130	Pass	
Pyrene	%	75			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	66			25-140	Pass	
2.4-Dichlorophenol	%	68			25-140	Pass	
2.4.5-Trichlorophenol	%	36			25-140	Pass	
2.4.6-Trichlorophenol	%	106			25-140	Pass	
2.6-Dichlorophenol	%	41			25-140	Pass	
4-Chloro-3-methylphenol	%	91			25-140	Pass	
Pentachlorophenol	%	38			25-140	Pass	
Tetrachlorophenols - Total	%	44			25-140	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	90			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	33			25-140	Pass	
2-Nitrophenol	%	124			25-140	Pass	
2.4-Dimethylphenol	%	75			25-140	Pass	
2.4-Dinitrophenol	%	41			25-140	Pass	
2-Methylphenol (o-Cresol)	%	53			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	57			25-140	Pass	
4-Nitrophenol	%	57			25-140	Pass	
Dinoseb	%	118			25-140	Pass	
Phenol	%	42			25-140	Pass	
LCS - % Recovery							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	%	110			70-130	Pass	
Propionic acid	%	102			70-130	Pass	
Isobutyric acid	%	105			70-130	Pass	
Butyric acid	%	118			70-130	Pass	
Isovaleric acid	%	103			70-130	Pass	
Valeric acid	%	109			70-130	Pass	
4-Methylvaleric acid	%	102			70-130	Pass	
Hexanoic acid	%	123			70-130	Pass	
Heptanoic acid	%	112			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	102			70-130	Pass	
Chemical Oxygen Demand (COD)	%	88			70-130	Pass	
Chromium (hexavalent)	%	75			70-130	Pass	
Cyanide (total)	%	99			70-130	Pass	
Nitrate & Nitrite (as N)	%	100			70-130	Pass	
Nitrate (as N)	%	100			70-130	Pass	
Nitrite (as N)	%	101			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	90			70-130	Pass	
Total Organic Carbon	%	82			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	122			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	%	117			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	129			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	128			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	127			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	138			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	97			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	%	108			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	92			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	109			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	115			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	120			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	134			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	115			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	129			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroundecanoic acid (PFUnDA)	%	130			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	125			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	121			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)- Trace							
Perfluorobutanesulfonic acid (PFBS)	%	109			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	110			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	133			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	115			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	114			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	118			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	133			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	66			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	147			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	130			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	95			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	B21-De57750	NCP	%	74			70-130	Pass	
TRH >C10-C16	B21-De57750	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Solvent Screen				Result 1					
Isopropanol	B21-De33654	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Dissolved Gases				Result 1					
Methane	S21-De54629	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	N21-De50424	NCP	%	85			70-130	Pass	
Acenaphthylene	N21-De50424	NCP	%	104			70-130	Pass	
Benz(a)anthracene	N21-De50424	NCP	%	81			70-130	Pass	
Benzo(a)pyrene	N21-De50424	NCP	%	74			70-130	Pass	
Benzo(b&j)fluoranthene	N21-De50424	NCP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	N21-De50424	NCP	%	111			70-130	Pass	
Benzo(k)fluoranthene	N21-De50424	NCP	%	75			70-130	Pass	
Chrysene	N21-De50424	NCP	%	109			70-130	Pass	
Dibenz(a.h)anthracene	N21-De50424	NCP	%	73			70-130	Pass	
Fluoranthene	N21-De50424	NCP	%	85			70-130	Pass	
Fluorene	N21-De50424	NCP	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	N21-De50424	NCP	%	100			70-130	Pass	
Naphthalene	N21-De50424	NCP	%	99			70-130	Pass	
Phenanthrene	N21-De50424	NCP	%	101			70-130	Pass	
Pyrene	N21-De50424	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Chlorinated Hydrocarbons				Result 1					
Hexachlorobenzene	N21-De50424	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	N21-De50424	NCP	%	74			30-130	Pass	
2.4-Dichlorophenol	N21-De50424	NCP	%	100			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.5-Trichlorophenol	N21-De50424	NCP	%	66			30-130	Pass	
2.4.6-Trichlorophenol	N21-De50424	NCP	%	87			30-130	Pass	
2.6-Dichlorophenol	N21-De50424	NCP	%	63			30-130	Pass	
4-Chloro-3-methylphenol	N21-De50424	NCP	%	101			30-130	Pass	
Pentachlorophenol	N21-De50424	NCP	%	120			30-130	Pass	
Tetrachlorophenols - Total	N21-De50424	NCP	%	122			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	N21-De50424	NCP	%	109			30-130	Pass	
2-Methyl-4.6-dinitrophenol	N21-De50424	NCP	%	124			30-130	Pass	
2-Nitrophenol	N21-De50424	NCP	%	116			30-130	Pass	
2.4-Dinitrophenol	N21-De50424	NCP	%	71			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	N21-De50424	NCP	%	81			30-130	Pass	
4-Nitrophenol	M21-De46599	NCP	%	37			30-130	Pass	
Dinoseb	N21-De50424	NCP	%	126			30-130	Pass	
Phenol	M21-De46599	NCP	%	66			30-130	Pass	
Spike - % Recovery									
Volatile Fatty Acids (VFA) by GC-MS				Result 1					
Isobutyric acid	M21-De52424	NCP	%	89			70-130	Pass	
Isovaleric acid	M21-De52424	NCP	%	82			70-130	Pass	
Valeric acid	M21-De52424	NCP	%	84			70-130	Pass	
4-Methylvaleric acid	M21-De52424	NCP	%	78			70-130	Pass	
Hexanoic acid	M21-De52424	NCP	%	98			70-130	Pass	
Heptanoic acid	M21-De52424	NCP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M21-De56670	CP	%	106			70-130	Pass	
Nitrate & Nitrite (as N)	M21-De56670	CP	%	92			70-130	Pass	
Nitrate (as N)	M21-De56670	CP	%	91			70-130	Pass	
Nitrite (as N)	M21-De56670	CP	%	91			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B22-Ja04186	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony (filtered)	M21-De57043	NCP	%	104			75-125	Pass	
Arsenic (filtered)	M21-De57043	NCP	%	104			75-125	Pass	
Barium (filtered)	M21-De57043	NCP	%	112			75-125	Pass	
Beryllium (filtered)	M21-De57043	NCP	%	107			75-125	Pass	
Boron (filtered)	M21-De57043	NCP	%	125			75-125	Pass	
Cadmium (filtered)	M21-De57043	NCP	%	101			75-125	Pass	
Chromium (filtered)	M21-De57043	NCP	%	103			75-125	Pass	
Cobalt (filtered)	M21-De57043	NCP	%	102			75-125	Pass	
Copper (filtered)	M21-De57043	NCP	%	101			75-125	Pass	
Lead (filtered)	M21-De57043	NCP	%	98			75-125	Pass	
Manganese (filtered)	M21-De57043	NCP	%	107			75-125	Pass	
Mercury (filtered)	M21-De57043	NCP	%	86			75-125	Pass	
Molybdenum (filtered)	M21-De57043	NCP	%	77			75-125	Pass	
Nickel (filtered)	M21-De57043	NCP	%	101			75-125	Pass	
Selenium (filtered)	M21-De57043	NCP	%	94			75-125	Pass	
Silver (filtered)	M21-De57043	NCP	%	81			75-125	Pass	
Tin (filtered)	M21-De57043	NCP	%	91			75-125	Pass	
Vanadium (filtered)	M21-De57043	NCP	%	105			75-125	Pass	
Zinc (filtered)	M21-De57043	NCP	%	105			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances- Trace				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctane sulfonamide (FOSA)	M21-De49599	NCP	%	131			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-De49599	NCP	%	117			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-De49599	NCP	%	99			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-De49599	NCP	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-De49599	NCP	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-De49599	NCP	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-De49599	NCP	%	110			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1					
Perfluorobutanoic acid (PFBA)	M21-De49599	NCP	%	120			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M21-De49599	NCP	%	82			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M21-De49599	NCP	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-De49599	NCP	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M21-De49599	NCP	%	105			50-150	Pass	
Perfluorononanoic acid (PFNA)	M21-De49599	NCP	%	97			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M21-De49599	NCP	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-De49599	NCP	%	129			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-De49599	NCP	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-De49599	NCP	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-De49599	NCP	%	52			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M21-De49599	NCP	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-De49599	NCP	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-De49599	NCP	%	133			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-De49599	NCP	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-De49599	NCP	%	107			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-De49599	NCP	%	100			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M21-De49599	NCP	%	127			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-De56110	NCP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-De49599	NCP	%	124			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-De49599	NCP	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-De49599	NCP	%	126			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-De49599	NCP	%	130			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	N21-De50423	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	N21-De50423	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	N21-De50423	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16	N21-De50423	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	N21-De50423	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	N21-De50423	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Solvent Screen				Result 1	Result 2	RPD			
Isopropanol	B21-De28880	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
n-Hexane	L21-De39676	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Dissolved Gases				Result 1	Result 2	RPD			
Methane	M21-De60098	NCP	mg/L	0.12	0.14	16	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	N21-De50435	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Chlorinated Hydrocarbons				Result 1	Result 2	RPD			
1.2-Dichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzal chloride	N21-De50435	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Benzotrichloride	N21-De50435	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Benzyl chloride	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorobenzene	N21-De50435	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	N21-De50435	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	N21-De50435	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	N21-De50435	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	N21-De50435	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	N21-De50435	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	N21-De50435	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	N21-De50435	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Nitrophenol	N21-De50435	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	N21-De50435	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	N21-De50435	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	N21-De50435	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	N21-De50435	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	N21-De50435	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M21-De56670	CP	mg/L	0.81	0.80	<1	30%	Pass	
Chemical Oxygen Demand (COD)	M21-De56670	CP	mg/L	40	49	22	30%	Pass	
Chromium (hexavalent)	M21-De56670	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cyanide (total)	L21-De58604	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrate & Nitrite (as N)	M21-De56670	CP	mg/L	1.4	1.4	1.0	30%	Pass	
Nitrate (as N)	M21-De56670	CP	mg/L	1.3	1.3	1.0	30%	Pass	
Nitrite (as N)	M21-De56670	CP	mg/L	0.04	0.06	33	30%	Fail	Q15
Total Organic Carbon	M21-De56670	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Total Alkalinity (as CaCO3)	M21-De56670	CP	mg/L	570	470	21	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony (filtered)	M21-De57043	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Arsenic (filtered)	M21-De57043	NCP	mg/L	0.003	0.003	<1	30%	Pass	
Barium (filtered)	M21-De57043	NCP	mg/L	0.02	0.02	<1	30%	Pass	
Beryllium (filtered)	M21-De57043	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron (filtered)	M21-De57043	NCP	mg/L	0.56	0.56	<1	30%	Pass	
Cadmium (filtered)	M21-De57043	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M21-De57043	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Cobalt (filtered)	M21-De57043	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Copper (filtered)	M21-De57043	NCP	mg/L	0.004	0.004	<1	30%	Pass	
Lead (filtered)	M21-De57043	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	M21-De57043	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury (filtered)	M21-De57043	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Molybdenum (filtered)	M21-De57043	NCP	mg/L	0.015	0.015	<1	30%	Pass	
Nickel (filtered)	M21-De57043	NCP	mg/L	0.003	0.003	<1	30%	Pass	
Selenium (filtered)	M21-De57043	NCP	mg/L	0.017	0.017	<1	30%	Pass	
Silver (filtered)	M21-De57043	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tin (filtered)	M21-De57043	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vanadium (filtered)	M21-De57043	NCP	mg/L	0.014	0.014	<1	30%	Pass	
Zinc (filtered)	M21-De57043	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances- Trace				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M21-De49598	NCP	ug/L	0.006	0.006	6.0	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M21-De49598	NCP	ug/L	0.002	0.002	4.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M21-De49598	NCP	ug/L	0.003	0.003	2.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M21-De49598	NCP	ug/L	0.001	0.001	5.0	30%	Pass	
Perfluorooctanoic acid (PFOA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M21-De49598	NCP	ug/L	0.002	0.002	9.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M21-De49598	NCP	ug/L	0.006	0.007	7.0	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1	Result 2	RPD			
Perfluorooctanesulfonic acid (PFOS)	M21-De49598	NCP	ug/L	0.013	0.013	1.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M21-De49598	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M21-De49598	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	

Comments

V2: Report amended to include aluminum and iron results on this report.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

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Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Compass Environmental Pty Ltd
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Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11101

Project Number: 21135	Laboratory: Eurofins
Project Location: Northcote	Address: 6 Monterey Rd, D'nong Sth
Project Manager: SH	Phone No: 8564-5000
Contact: laboratory@compassenviro.com.au compassenviro@esdat.com.au	Lab Quote Number:

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: Asbestos-ID	Cr6+	Metals (listed below)	Nitrogen - speciated	Total + Free cyanide	BTEX	HVOCs	CHCs	Non chlorinated solvents	PFAS 28 low level	Dissolved CH4	TOC	COD/TSOD	Comments: Volatile Fatty Acids
DP208		17.02.22		2	ICE	16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Analysis comments: Metal Screen: Al, Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Fe, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Conduct ultra trace analysis for HVOLs (HalVolSIM), PAH (<0.00001 mg/L) and Metals

Report HVOLs with standard LOR, apart from Vinyl Chloride (report to 0.0002 mg/L)

Temp: Time: Cooler No: 6 8.7 -0.4 8.7 Correction: Final Temp: Comm

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Low level metals

Relinquished by: CG	Received by: Emily Lo	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company: Eurofins	Company:	Company:
Date/time: 18.02.22	Date/time 18/2/22 - 5.29pm	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

864761

Jake

Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL RESULTS, SRA & COC**

Report **864761-W**
Project name NORTHCOTE
Project ID 21135
Received Date Feb 18, 2022

Client Sample ID			**DP208**
Sample Matrix			**Water**
Eurofins Sample No.			**M22-Fe38591**
Date Sampled			**Feb 17, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	0.08
TRH C15-C28	0.1	mg/L	0.2
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.28
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	0.07
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.07
TRH >C16-C34	0.1	mg/L	0.2
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.27
Solvent Screen			
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Acrylonitrile	1.25	mg/L	< 1.25
Ethyl hexyl acrylate	0.1	mg/L	< 0.1
Isopropanol	0.05	mg/L	< 0.05
n-Hexane	0.05	mg/L	< 0.05
Trichloroethene	0.001	mg/L	< 0.001
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	98

Client Sample ID			DP208
Sample Matrix			Water
Eurofins Sample No.			M22-Fe38591
Date Sampled			Feb 17, 2022
Test/Reference	LOR	Unit	
Halogenated Volatile Organics (selected analytes by SIM)			
1.1-Dichloroethane (SIM)	0.00001	mg/L	< 0.00001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane (SIM)	0.00001	mg/L	< 0.00001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.4-Dichlorobenzene (SIM)	0.00001	mg/L	< 0.00001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene (SIM)	0.00001	mg/L	< 0.00001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene (SIM)	0.00001	mg/L	< 0.00001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Methylene chloride (SIM)	0.00002	mg/L	< 0.00002
Tetrachloroethene (SIM)	0.00002	mg/L	< 0.00002
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene (SIM)	0.00001	mg/L	< 0.00001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride (SIM)	0.00005	mg/L	< 0.00005
4-Bromofluorobenzene (surr.)	1	%	98
Toluene-d8 (surr.)	1	%	95
Dissolved Gases			
Methane	0.05	mg/L	0.22
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001

Client Sample ID			DP208
Sample Matrix			Water
Eurofins Sample No.			M22-Fe38591
Date Sampled			Feb 17, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62
p-Terphenyl-d14 (surr.)	1	%	92
Chlorinated Hydrocarbons			
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
Benzal chloride	0.0001	mg/L	< 0.0001
Benzotrichloride	0.0001	mg/L	< 0.0001
Benzyl chloride	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Pentachlorobenzene	0.005	mg/L	< 0.005
Tetrachloro-m-xylene (surr.)	1	%	59
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
Total cresols*	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003

Client Sample ID			DP208
Sample Matrix			Water
Eurofins Sample No.			M22-Fe38591
Date Sampled			Feb 17, 2022
Test/Reference	LOR	Unit	
Phenols (non-Halogenated)			
Phenol-d6 (surr.)	1	%	52
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)			
Acenaphthene	0.00001	mg/L	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	62
p-Terphenyl-d14 (surr.)	1	%	92
Volatile Fatty Acids (VFA) by GC-MS			
Acetic Acid	5	mg/L	< 5
Propionic acid	5	mg/L	< 5
Isobutyric acid	5	mg/L	< 5
Butyric acid	5	mg/L	< 5
Isovaleric acid	5	mg/L	< 5
Valeric acid	5	mg/L	< 5
4-Methylvaleric acid	5	mg/L	< 5
Hexanoic acid	5	mg/L	< 5
Heptanoic acid	5	mg/L	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5
Ammonia (as N)	0.01	mg/L	2.5
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	< 5
Chemical Oxygen Demand (COD)	25	mg/L	40
Chromium (hexavalent)	0.005	mg/L	< 0.005
Cyanide (free)	0.005	mg/L	< 0.005
Cyanide (total)	0.005	mg/L	< 0.005
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.5
Total Nitrogen (as N)*	0.2	mg/L	2.5
Total Organic Carbon	5	mg/L	< 5
Alkalinity (speciated)			
Total Alkalinity (as CaCO3)	20	mg/L	800

Client Sample ID			DP208
Sample Matrix			Water
Eurofins Sample No.			M22-Fe38591
Date Sampled			Feb 17, 2022
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium (filtered)	0.05	mg/L	< 0.05
Antimony (filtered)	0.005	mg/L	< 0.005
Arsenic (filtered)	0.001	mg/L	0.002
Barium (filtered)	0.02	mg/L	0.06
Beryllium (filtered)	0.001	mg/L	< 0.001
Boron (filtered)	0.05	mg/L	1.1
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	0.002
Copper (filtered)	0.001	mg/L	0.006
Iron (filtered)	0.05	mg/L	0.22
Lead (filtered)	0.001	mg/L	< 0.001
Manganese (filtered)	0.005	mg/L	0.19
Mercury (filtered)	0.0001	mg/L	< 0.0001
Molybdenum (filtered)	0.005	mg/L	< 0.005
Nickel (filtered)	0.001	mg/L	0.014
Selenium (filtered)	0.001	mg/L	< 0.001
Silver (filtered)	0.005	mg/L	< 0.005
Tin (filtered)	0.005	mg/L	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	0.072
PFASs Summations			
Sum (PFHxS + PFOS)*	0.001	ug/L	0.44
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.001	ug/L	0.78
Sum of PFASs (n=30)*	0.005	ug/L	1.671
Sum of US EPA PFAS (PFOS + PFOA)*	0.001	ug/L	0.56
Sum of WA DWER PFAS (n=10)*	0.005	ug/L	1.593
Perfluoroalkyl sulfonamido substances- Trace			
Perfluorooctane sulfonamide (FOSA)[N11]	0.005	ug/L	< 0.005
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.005	ug/L	< 0.005
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.005	ug/L	< 0.005
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.005	ug/L	< 0.005
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.005	ug/L	< 0.005
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.005	ug/L	< 0.005
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.005	ug/L	< 0.005
13C8-FOSA (surr.)	1	%	67
D3-N-MeFOSA (surr.)	1	%	87
D5-N-EtFOSA (surr.)	1	%	77
D7-N-MeFOSE (surr.)	1	%	72
D9-N-EtFOSE (surr.)	1	%	80
D5-N-EtFOSAA (surr.)	1	%	141
D3-N-MeFOSAA (surr.)	1	%	116

Client Sample ID			DP208
Sample Matrix			Water
Eurofins Sample No.			M22-Fe38591
Date Sampled			Feb 17, 2022
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs) - Trace			
Perfluorobutanoic acid (PFBA)[N11]	0.005	ug/L	0.24
Perfluoropentanoic acid (PFPeA)[N11]	0.001	ug/L	[N09]0.21
Perfluorohexanoic acid (PFHxA)[N11]	0.001	ug/L	[N09]0.21
Perfluoroheptanoic acid (PFHpA)[N11]	0.001	ug/L	[N09]0.11
Perfluorooctanoic acid (PFOA)[N11]	0.001	ug/L	[N09]0.34
Perfluorononanoic acid (PFNA)[N11]	0.001	ug/L	0.021
Perfluorodecanoic acid (PFDA)[N11]	0.001	ug/L	0.002
Perfluorotridecanoic acid (PFTrDA)[N15]	0.001	ug/L	< 0.001
Perfluoroundecanoic acid (PFUnDA)[N11]	0.001	ug/L	< 0.001
Perfluorododecanoic acid (PFDoDA)[N11]	0.001	ug/L	< 0.001
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.001	ug/L	< 0.001
13C4-PFBA (surr.)	1	%	66
13C5-PFPeA (surr.)	1	%	55
13C5-PFHxA (surr.)	1	%	68
13C4-PFHpA (surr.)	1	%	78
13C8-PFOA (surr.)	1	%	92
13C5-PFNA (surr.)	1	%	64
13C6-PFDA (surr.)	1	%	61
13C2-PFUnDA (surr.)	1	%	73
13C2-PFDoDA (surr.)	1	%	94
13C2-PFTeDA (surr.)	1	%	107
Perfluoroalkyl sulfonic acids (PFSAs)- Trace			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.001	ug/L	0.043
Perfluorononanesulfonic acid (PFNS)[N15]	0.001	ug/L	< 0.001
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.001	ug/L	0.015
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.001	ug/L	[N09]0.031
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.001	ug/L	[N09]0.22
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.001	ug/L	[N09]0.009
Perfluorooctanesulfonic acid (PFOS)[N11]	0.001	ug/L	[N09]0.22
Perfluorodecanesulfonic acid (PFDS)[N15]	0.001	ug/L	< 0.001
13C3-PFBS (surr.)	1	%	55
18O2-PFHxS (surr.)	1	%	79
13C8-PFOS (surr.)	1	%	86
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.001	ug/L	< 0.001
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.005	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.001	ug/L	< 0.005
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.001	ug/L	< 0.001
13C2-4:2 FTSA (surr.)	1	%	101
13C2-6:2 FTSA (surr.)	1	%	99
13C2-8:2 FTSA (surr.)	1	%	115
13C2-10:2 FTSA (surr.)	1	%	110

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 21, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Solvent Screen	Melbourne	Feb 21, 2022	14 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS and USEPA 8000			
Halogenated Volatile Organics (selected analytes by SIM)	Melbourne	Feb 21, 2022	7 Days
- Method: USEPA 8260 MGT 350A Halogenated Volatile Organics			
Dissolved Gases	Melbourne	Feb 21, 2022	14 Days
- Method: in-house method LTM-ORG-2070 by Headspace GC-FID			
Chlorinated Hydrocarbons	Melbourne	Feb 21, 2022	7 Days
- Method: USEPA 8121 Chlorinated Hydrocarbons			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Feb 21, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Volatile Fatty Acids (VFA) by GC-MS	Melbourne	Feb 21, 2022	28 Day
- Method: LTM-ORG-2360 Determination of Volatile Fatty Acids in Water by GC-MS			
Biochemical Oxygen Demand (BOD-5 Day)	Melbourne	Feb 21, 2022	2 Days
- Method: LTM-INO-4010 Biochemical Oxygen Demand (BOD5) in Water			
Chemical Oxygen Demand (COD)	Melbourne	Feb 22, 2022	28 Days
- Method: LTM-INO-4220 Determination of COD in Water			
Chromium (hexavalent)	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-INO-4100 Analysis of Cr6+ by Discrete Analyser			
Cyanide (free)	Melbourne	Feb 21, 2022	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Cyanide (total)	Melbourne	Feb 21, 2022	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Total Organic Carbon	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Alkalinity (speciated)	Melbourne	Feb 21, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Heavy Metals (filtered)	Sydney	Feb 22, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mercury (filtered)	Sydney	Feb 22, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Nitrogens (speciated)			
Ammonia (as N)	Melbourne	Feb 21, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Feb 21, 2022	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Feb 21, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Organic Nitrogen (as N)*	Melbourne	Feb 19, 2022	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Feb 21, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Per- and Polyfluoroalkyl Substances (PFASs) - Trace			
PFASs Summations	Melbourne	Feb 19, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl sulfonamido substances- Trace	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl carboxylic acids (PFCAs) - Trace	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
Perfluoroalkyl sulfonic acids (PFSAs)- Trace	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level			

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Received: Feb 18, 2022 5:29 PM
Due: Feb 25, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail	Aluminium (filtered)	Antimony (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Biochemical Oxygen Demand (BOD-5 Day)	Boron (filtered)	Cadmium (filtered)	Chemical Oxygen Demand (COD)	Chromium (filtered)	Chromium (hexavalent)	Cobalt (filtered)	Copper (filtered)	Cyanide (free)	Cyanide (total)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Methane	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Tin (filtered)	Total Alkalinity (as CaCO3)	Total Organic Carbon	Vanadium (filtered)	Zinc (filtered)	Chlorinated Hydrocarbons	Solvent Screen	Halogenated Volatile Organics (selected	Nitrogens (speciated)	Eurofins Suite B4A	Polycyclic Aromatic Hydrocarbons (Trace	Per- and Polyfluoroalkyl Substances (PFASs)	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X			X		X			X	X					X						X	X			X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X	X	X		X	X		X		X	X			X	X	X	X		X	X	X	X	X			X	X							
Brisbane Laboratory - NATA # 1261 Site # 20794																																					
Mayfield Laboratory - NATA # 1261 Site # 25079																																					
Perth Laboratory - NATA # 2377 Site # 2370																																					
External Laboratory																																					

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																		
1	DP208	Feb 17, 2022		Water	M22-Fe38591	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Solvent Screen							
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Acrylonitrile	mg/L	< 1.25			1.25	Pass	
Ethyl hexyl acrylate	mg/L	< 0.1			0.1	Pass	
Isopropanol	mg/L	< 0.05			0.05	Pass	
n-Hexane	mg/L	< 0.05			0.05	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Halogenated Volatile Organics (selected analytes by SIM)							
1.1-Dichloroethane (SIM)	mg/L	< 0.00001			0.00001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane (SIM)	mg/L	< 0.00001			0.00001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene (SIM)	mg/L	< 0.00001			0.00001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene (SIM)	mg/L	< 0.00001			0.00001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
cis-1.2-Dichloroethene (SIM)	mg/L	< 0.00001			0.00001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene chloride (SIM)	mg/L	< 0.00002			0.00002	Pass	
Tetrachloroethene (SIM)	mg/L	< 0.00002			0.00002	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene (SIM)	mg/L	< 0.00001			0.00001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride (SIM)	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Dissolved Gases							
Methane	mg/L	< 0.05			0.05	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Chlorinated Hydrocarbons							
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
Benzal chloride	mg/L	< 0.0001			0.0001	Pass	
Benzotrichloride	mg/L	< 0.0001			0.0001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Phenols (Halogenated)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Total PAH*	mg/L	-			0.00001	N/A	
Method Blank							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	mg/L	< 5			5	Pass	
Propionic acid	mg/L	< 5			5	Pass	
Isobutyric acid	mg/L	< 5			5	Pass	
Butyric acid	mg/L	< 5			5	Pass	
Isovaleric acid	mg/L	< 5			5	Pass	
Valeric acid	mg/L	< 5			5	Pass	
4-Methylvaleric acid	mg/L	< 5			5	Pass	
Hexanoic acid	mg/L	< 5			5	Pass	
Heptanoic acid	mg/L	< 5			5	Pass	
Total VFA as Acetic Acid Equivalents	mg/L	< 5			5	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Biochemical Oxygen Demand (BOD-5 Day)	mg/L	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Cyanide (free)	mg/L	< 0.005			0.005	Pass	
Cyanide (total)	mg/L	< 0.005			0.005	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Molybdenum (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Tin (filtered)	mg/L	< 0.005			0.005	Pass	
Vanadium (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.005			0.005	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.005			0.005	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.005			0.005	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.005			0.005	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.005			0.005	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.005			0.005	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.005			0.005	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.001			0.001	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.001			0.001	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.001			0.001	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.001			0.001	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.001			0.001	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.001			0.001	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.001			0.001	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.001			0.001	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.001			0.001	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)- Trace							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.001			0.001	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.001			0.001	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.001			0.001	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.001			0.001	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.001			0.001	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.001			0.001	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.001			0.001	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.001			0.001	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.001			0.001	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.005			0.005	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.001			0.001	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	83			70-130	Pass	
TRH C10-C14	%	82			70-130	Pass	
Naphthalene	%	115			70-130	Pass	
TRH C6-C10	%	82			70-130	Pass	
TRH >C10-C16	%	85			70-130	Pass	
LCS - % Recovery							
Solvent Screen							
1.1.1-Trichloroethane	%	98			70-130	Pass	
Ethyl hexyl acrylate	%	123			70-130	Pass	
Isopropanol	%	92			70-130	Pass	
n-Hexane	%	103			70-130	Pass	
Trichloroethene	%	99			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	100			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	90			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	
LCS - % Recovery							
Halogenated Volatile Organics (selected analytes by SIM)							
1.1-Dichloroethene	%	104			70-130	Pass	
1.2-Dichlorobenzene	%	104			70-130	Pass	
LCS - % Recovery							
Dissolved Gases							
Methane	%	119			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	115			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	72			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	124			70-130	Pass	
Benzo(k)fluoranthene	%	105			70-130	Pass	
Chrysene	%	111			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	79			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	89			70-130	Pass	
Naphthalene	%	89			70-130	Pass	
Phenanthrene	%	97			70-130	Pass	
Pyrene	%	104			70-130	Pass	
LCS - % Recovery							
Chlorinated Hydrocarbons							
1.2-Dichlorobenzene	%	82			75-125	Pass	
1.2.4-Trichlorobenzene	%	91			70-130	Pass	
1.4-Dichlorobenzene	%	93			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	103			25-140	Pass	
2.4-Dichlorophenol	%	63			25-140	Pass	
2.4.5-Trichlorophenol	%	111			25-140	Pass	
2.4.6-Trichlorophenol	%	111			25-140	Pass	
2.6-Dichlorophenol	%	61			25-140	Pass	
4-Chloro-3-methylphenol	%	79			25-140	Pass	
Pentachlorophenol	%	67			25-140	Pass	
Tetrachlorophenols - Total	%	103			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	69			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	60			25-140	Pass	
2-Nitrophenol	%	61			25-140	Pass	
2.4-Dinitrophenol	%	49			25-140	Pass	
2-Methylphenol (o-Cresol)	%	40			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	92			25-140	Pass	
4-Nitrophenol	%	111			25-140	Pass	
Dinoseb	%	70			25-140	Pass	
Phenol	%	63			25-140	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	115			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	72			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	124			70-130	Pass	
Benzo(k)fluoranthene	%	105			70-130	Pass	
Chrysene	%	111			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	79			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	89			70-130	Pass	
Naphthalene	%	89			70-130	Pass	
Phenanthrene	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	%	104			70-130	Pass	
LCS - % Recovery							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	%	108			70-130	Pass	
Propionic acid	%	110			70-130	Pass	
Isobutyric acid	%	118			70-130	Pass	
Butyric acid	%	105			70-130	Pass	
Isovaleric acid	%	105			70-130	Pass	
Valeric acid	%	103			70-130	Pass	
4-Methylvaleric acid	%	100			70-130	Pass	
Hexanoic acid	%	114			70-130	Pass	
Heptanoic acid	%	100			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	105			70-130	Pass	
Biochemical Oxygen Demand (BOD-5 Day)	%	95			85-115	Pass	
Chemical Oxygen Demand (COD)	%	74			70-130	Pass	
Chromium (hexavalent)	%	95			70-130	Pass	
Cyanide (total)	%	95			70-130	Pass	
Nitrate & Nitrite (as N)	%	95			70-130	Pass	
Nitrate (as N)	%	94			70-130	Pass	
Nitrite (as N)	%	104			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	96			70-130	Pass	
Total Organic Carbon	%	85			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	92			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium (filtered)	%	93			80-120	Pass	
Antimony (filtered)	%	95			80-120	Pass	
Arsenic (filtered)	%	94			80-120	Pass	
Barium (filtered)	%	96			80-120	Pass	
Beryllium (filtered)	%	97			80-120	Pass	
Boron (filtered)	%	82			80-120	Pass	
Cadmium (filtered)	%	94			80-120	Pass	
Chromium (filtered)	%	98			80-120	Pass	
Cobalt (filtered)	%	98			80-120	Pass	
Copper (filtered)	%	95			80-120	Pass	
Iron (filtered)	%	95			80-120	Pass	
Lead (filtered)	%	95			80-120	Pass	
Manganese (filtered)	%	95			80-120	Pass	
Mercury (filtered)	%	96			80-120	Pass	
Molybdenum (filtered)	%	93			80-120	Pass	
Nickel (filtered)	%	97			80-120	Pass	
Selenium (filtered)	%	93			80-120	Pass	
Silver (filtered)	%	95			80-120	Pass	
Tin (filtered)	%	95			80-120	Pass	
Vanadium (filtered)	%	95			80-120	Pass	
Zinc (filtered)	%	93			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	%	126			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	124			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	120			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	128			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	110			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	116			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	%	132			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	130			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	120			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	108			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	108			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	112			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	122			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	134			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	116			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	70			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)- Trace							
Perfluorobutanesulfonic acid (PFBS)	%	126			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	122			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	124			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	116			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	128			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	130			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	114			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	92			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	126			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	128			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	72			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-Fe35344	NCP	%	74			70-130	Pass	
TRH >C10-C16	N22-Fe35344	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Solvent Screen				Result 1					
Isopropanol	M22-Fe02206	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Dissolved Gases				Result 1					
Methane	M22-Fe34838	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Fe26152	NCP	%	82			70-130	Pass	
Acenaphthylene	S22-Fe26152	NCP	%	92			70-130	Pass	
Benz(a)anthracene	S22-Fe26152	NCP	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Fe26152	NCP	%	110			70-130	Pass	
Benzo(g.h.i)perylene	S22-Fe26152	NCP	%	100			70-130	Pass	
Benzo(k)fluoranthene	S22-Fe26152	NCP	%	92			70-130	Pass	
Chrysene	S22-Fe26152	NCP	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	S22-Fe26152	NCP	%	89			70-130	Pass	
Fluoranthene	S22-Fe26152	NCP	%	109			70-130	Pass	
Fluorene	S22-Fe26152	NCP	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Fe26152	NCP	%	95			70-130	Pass	
Naphthalene	S22-Fe26152	NCP	%	87			70-130	Pass	
Phenanthrene	S22-Fe26152	NCP	%	102			70-130	Pass	
Pyrene	S22-Fe26152	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S22-Fe26152	NCP	%	124			30-130	Pass	
2.4-Dichlorophenol	S22-Fe26152	NCP	%	78			30-130	Pass	
2.4.5-Trichlorophenol	S22-Fe26152	NCP	%	94			30-130	Pass	
2.4.6-Trichlorophenol	S22-Fe26152	NCP	%	91			30-130	Pass	
2.6-Dichlorophenol	S22-Fe26152	NCP	%	107			30-130	Pass	
4-Chloro-3-methylphenol	S22-Fe26152	NCP	%	109			30-130	Pass	
Pentachlorophenol	S22-Fe26152	NCP	%	83			30-130	Pass	
Tetrachlorophenols - Total	S22-Fe26152	NCP	%	54			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	S22-Fe26152	NCP	%	56			30-130	Pass	
2-Nitrophenol	S22-Fe26152	NCP	%	113			30-130	Pass	
2-Methylphenol (o-Cresol)	S22-Fe26152	NCP	%	119			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-Fe26152	NCP	%	111			30-130	Pass	
Dinoseb	S22-Fe26152	NCP	%	50			30-130	Pass	
Phenol	S22-Fe26152	NCP	%	119			30-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S22-Fe26152	NCP	%	82			70-130	Pass	
Acenaphthylene	S22-Fe26152	NCP	%	92			70-130	Pass	
Benz(a)anthracene	S22-Fe26152	NCP	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Fe26152	NCP	%	110			70-130	Pass	
Benzo(g.h.i)perylene	S22-Fe26152	NCP	%	100			70-130	Pass	
Benzo(k)fluoranthene	S22-Fe26152	NCP	%	92			70-130	Pass	
Chrysene	S22-Fe26152	NCP	%	109			70-130	Pass	
Dibenz(a.h)anthracene	S22-Fe26152	NCP	%	89			70-130	Pass	
Fluoranthene	S22-Fe26152	NCP	%	109			70-130	Pass	
Fluorene	S22-Fe26152	NCP	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Fe26152	NCP	%	95			70-130	Pass	
Naphthalene	S22-Fe26152	NCP	%	87			70-130	Pass	
Phenanthrene	S22-Fe26152	NCP	%	102			70-130	Pass	
Pyrene	S22-Fe26152	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Volatile Fatty Acids (VFA) by GC-MS				Result 1					
Isobutyric acid	M22-Fe34832	NCP	%	94			70-130	Pass	
Isovaleric acid	M22-Fe34832	NCP	%	82			70-130	Pass	
Valeric acid	M22-Fe34832	NCP	%	80			70-130	Pass	
4-Methylvaleric acid	M22-Fe34832	NCP	%	118			70-130	Pass	
Hexanoic acid	M22-Fe34832	NCP	%	99			70-130	Pass	
Heptanoic acid	M22-Fe34832	NCP	%	79			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S22-Fe32042	NCP	%	86			70-130	Pass	
Nitrate & Nitrite (as N)	S22-Fe32042	NCP	%	97			70-130	Pass	
Nitrate (as N)	S22-Fe32042	NCP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrite (as N)	S22-Fe32042	NCP	%	101			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-Fe34785	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	M22-Fe38591	CP	%	87			75-125	Pass	
Antimony (filtered)	M22-Fe38591	CP	%	99			75-125	Pass	
Arsenic (filtered)	M22-Fe38591	CP	%	104			75-125	Pass	
Barium (filtered)	M22-Fe38591	CP	%	90			75-125	Pass	
Beryllium (filtered)	M22-Fe38591	CP	%	99			75-125	Pass	
Boron (filtered)	S22-Fe39422	NCP	%	89			75-125	Pass	
Cadmium (filtered)	M22-Fe38591	CP	%	93			75-125	Pass	
Chromium (filtered)	M22-Fe38591	CP	%	92			75-125	Pass	
Cobalt (filtered)	M22-Fe38591	CP	%	88			75-125	Pass	
Copper (filtered)	M22-Fe38591	CP	%	84			75-125	Pass	
Iron (filtered)	M22-Fe38591	CP	%	85			75-125	Pass	
Lead (filtered)	M22-Fe38591	CP	%	88			75-125	Pass	
Manganese (filtered)	S22-Fe39422	NCP	%	86			75-125	Pass	
Mercury (filtered)	M22-Fe38591	CP	%	91			75-125	Pass	
Molybdenum (filtered)	M22-Fe38591	CP	%	100			75-125	Pass	
Nickel (filtered)	M22-Fe38591	CP	%	85			75-125	Pass	
Selenium (filtered)	M22-Fe38591	CP	%	103			75-125	Pass	
Silver (filtered)	M22-Fe38591	CP	%	91			75-125	Pass	
Tin (filtered)	M22-Fe38591	CP	%	97			75-125	Pass	
Vanadium (filtered)	M22-Fe38591	CP	%	92			75-125	Pass	
Zinc (filtered)	S22-Fe36964	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances- Trace				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-Fe37343	NCP	%	124			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe37343	NCP	%	132			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe37343	NCP	%	122			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe37343	NCP	%	126			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe37343	NCP	%	134			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe37343	NCP	%	112			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe37343	NCP	%	130			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1					
Perfluorobutanoic acid (PFBA)	M22-Fe37343	NCP	%	126			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe37343	NCP	%	116			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe37343	NCP	%	116			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe37343	NCP	%	114			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe37343	NCP	%	110			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe37343	NCP	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe37343	NCP	%	106			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe37343	NCP	%	127			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe37343	NCP	%	124			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe37343	NCP	%	126			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe37343	NCP	%	73			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-Fe37343	NCP	%	122			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe37343	NCP	%	118			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe37343	NCP	%	118			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe37343	NCP	%	112			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe37343	NCP	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe37343	NCP	%	132			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Fe35927	NCP	%	117			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Fe37343	NCP	%	90			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe37343	NCP	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe37343	NCP	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe37343	NCP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe37343	NCP	%	127			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Fe32472	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M22-Fe45448	NCP	mg/L	6.2	6.4	4.0	30%	Pass	
TRH C15-C28	M22-Fe45448	NCP	mg/L	0.9	1.0	15	30%	Pass	
TRH C29-C36	M22-Fe45448	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	M22-Fe32472	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-Fe32472	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M22-Fe45448	NCP	mg/L	3.1	3.3	6.0	30%	Pass	
TRH >C16-C34	M22-Fe45448	NCP	mg/L	0.6	0.7	13	30%	Pass	
TRH >C34-C40	M22-Fe45448	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Solvent Screen				Result 1	Result 2	RPD			
Acrylonitrile	M22-Fe34832	NCP	mg/L	< 1.25	< 1.25	<1	30%	Pass	
Ethyl hexyl acrylate	M22-Fe34832	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Isopropanol	M22-Fe40716	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
n-Hexane	M22-Fe34832	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Fe32472	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M22-Fe32472	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M22-Fe32472	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M22-Fe32472	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M22-Fe32472	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M22-Fe32472	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Dissolved Gases				Result 1	Result 2	RPD			
Methane	M22-Fe38535	NCP	mg/L	0.34	0.30	14	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M22-Fe30316	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Chlorinated Hydrocarbons				Result 1	Result 2	RPD			
1.2-Dichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzal chloride	L22-Fe32658	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Benzotrichloride	L22-Fe32658	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Benzyl chloride	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorobenzene	M22-Fe30316	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M22-Fe30316	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	M22-Fe30316	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	M22-Fe30316	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	M22-Fe30316	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	L22-Fe32658	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	M22-Fe30316	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	M22-Fe30316	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	M22-Fe30316	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M22-Fe30316	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M22-Fe30316	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Nitrophenol	M22-Fe30316	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	M22-Fe30316	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2.4-Dinitrophenol	M22-Fe30316	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M22-Fe30316	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-Fe30316	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	M22-Fe30316	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	M22-Fe30316	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	M22-Fe30316	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	M22-Fe30316	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M22-Fe40718	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M22-Fe36033	NCP	mg/L	0.02	0.03	25	30%	Pass	
Biochemical Oxygen Demand (BOD-5 Day)	S22-Fe37219	NCP	mg/L	5.4	5.3	1.0	30%	Pass	
Chemical Oxygen Demand (COD)	M22-Fe36126	NCP	mg/L	2900	2900	<1	30%	Pass	
Chromium (hexavalent)	M22-Fe38591	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cyanide (free)	M22-Fe36033	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cyanide (total)	M22-Fe36033	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrate & Nitrite (as N)	M22-Fe36033	NCP	mg/L	0.17	0.17	1.0	30%	Pass	
Nitrate (as N)	M22-Fe36033	NCP	mg/L	0.17	0.16	1.0	30%	Pass	
Nitrite (as N)	M22-Fe36033	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-Fe34784	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
Total Organic Carbon	S22-Fe35919	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Total Alkalinity (as CaCO3)	M22-Fe34775	NCP	mg/L	55	55	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	S22-Fe43276	NCP	mg/L	0.21	0.21	2.0	30%	Pass	
Antimony (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Arsenic (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium (filtered)	S22-Fe43276	NCP	mg/L	0.08	0.08	3.0	30%	Pass	
Beryllium (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron (filtered)	S22-Fe43276	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium (filtered)	S22-Fe43276	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S22-Fe43276	NCP	mg/L	0.001	0.002	3.0	30%	Pass	
Iron (filtered)	S22-Fe43276	NCP	mg/L	0.29	0.29	<1	30%	Pass	
Lead (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S22-Fe43276	NCP	mg/L	0.045	0.046	2.0	30%	Pass	
Mercury (filtered)	S22-Fe43276	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Molybdenum (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nickel (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S22-Fe43276	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Silver (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tin (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vanadium (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	S22-Fe43276	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances- Trace				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe37287	NCP	ug/L	< 0.005	< 0.005	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe37287	NCP	ug/L	< 0.001	< 0.001	<1	30%	Pass	

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Harry Bacalis	Analytical Services Manager
John Nguyen	Senior Analyst-Metal (NSW)
Joseph Edouard	Senior Analyst-Organic (VIC)
Joseph Edouard	Senior Analyst-PFAS (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Vivian Wang	Senior Analyst-Volatile (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ATTACHMENT L

Development Plans

FENDER KATSALIDIS

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE 3070

PROJECT NO: 21045



VCAT AMENDED SCHEME

DRAWING INDEX

CONTEXT AND SITE PLAN

TP0000	0	COVER PAGE	VCAT AMENDED SCHEME
TP0001	0	EXISTING CONDITIONS PLAN - SITE SURVEY	VCAT AMENDED SCHEME
TP0002	0	PRECINCT PLAN	VCAT AMENDED SCHEME
TP0003	0	LOCALITY PLAN	VCAT AMENDED SCHEME
TP0004	0	SITE PLAN	VCAT AMENDED SCHEME
TP0200	0	LOWER GROUND DEMOLITION PLAN	VCAT AMENDED SCHEME
TP0201	0	UPPER GROUND DEMOLITION PLAN	VCAT AMENDED SCHEME

FLOOR PLANS 1:400

TP0997	0	BASEMENT 3 FLOOR PLAN	VCAT AMENDED SCHEME
TP0998	0	BASEMENT 2 FLOOR PLAN	VCAT AMENDED SCHEME
TP0999	0	BASEMENT 1 FLOOR PLAN	VCAT AMENDED SCHEME
TP1000	0	LOWER GROUND FLOOR PLAN	VCAT AMENDED SCHEME
TP1000A	0	UPPER GROUND FLOOR PLAN	VCAT AMENDED SCHEME
TP1001	0	LEVEL 1 FLOOR PLAN	VCAT AMENDED SCHEME
TP1002	0	LEVEL 2 FLOOR PLAN	VCAT AMENDED SCHEME
TP1003	0	LEVEL 3 FLOOR PLAN	VCAT AMENDED SCHEME
TP1004	0	LEVEL 4 FLOOR PLAN	VCAT AMENDED SCHEME
TP1005	0	LEVEL 5 FLOOR PLAN	VCAT AMENDED SCHEME
TP1006	0	LEVEL 6 FLOOR PLAN	VCAT AMENDED SCHEME
TP1007	0	LEVEL 7 FLOOR PLAN	VCAT AMENDED SCHEME
TP1008	0	LEVEL 8 FLOOR PLAN	VCAT AMENDED SCHEME
TP1009	0	LEVEL 9 FLOOR PLAN	VCAT AMENDED SCHEME
TP1010	0	LEVEL 10 FLOOR PLAN	VCAT AMENDED SCHEME
TP1011	0	LEVEL 11 FLOOR PLAN	VCAT AMENDED SCHEME
TP1012	0	LEVEL 12 FLOOR PLAN	VCAT AMENDED SCHEME
TP1013	0	LEVEL 13 FLOOR PLAN	VCAT AMENDED SCHEME
TP1014	0	LEVEL 14 FLOOR PLAN	VCAT AMENDED SCHEME
TP1015	0	LEVEL 15-17 FLOOR PLAN	VCAT AMENDED SCHEME
TP1018	0	LEVEL 18 ROOF PLAN	VCAT AMENDED SCHEME

FLOOR PLANS 1:200 QUADRANT 01

TP1097	0	BASEMENT 3 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME
TP1098	0	BASEMENT 2 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME
TP1099	0	BASEMENT 1 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME
TP1100	0	LOWER GROUND FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME
TP1100A	0	UPPER GROUND FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME
TP1101	0	LEVEL 1 QUADRANT 1	VCAT AMENDED SCHEME
TP1102	0	LEVEL 2 QUADRANT 1	VCAT AMENDED SCHEME
TP1103	0	LEVEL 3 QUADRANT 1	VCAT AMENDED SCHEME
TP1104	0	LEVEL 4 QUADRANT 1	VCAT AMENDED SCHEME
TP1105	0	LEVEL 5-6 QUADRANT 1	VCAT AMENDED SCHEME
TP1107	0	LEVEL 7 QUADRANT 1	VCAT AMENDED SCHEME
TP1108	0	LEVEL 8 QUADRANT 1	VCAT AMENDED SCHEME
TP1109	0	LEVEL 9 QUADRANT 1	VCAT AMENDED SCHEME
TP1110	0	LEVEL 10 QUADRANT 1	VCAT AMENDED SCHEME
TP1111	0	LEVEL 11 QUADRANT 1	VCAT AMENDED SCHEME
TP1112	0	LEVEL 12-13 QUADRANT 1	VCAT AMENDED SCHEME
TP1114	0	LEVEL 14 QUADRANT 1	VCAT AMENDED SCHEME
TP1115	0	LEVEL 15-17 QUADRANT 1	VCAT AMENDED SCHEME
TP1118	0	LEVEL 18 ROOF PLAN QUADRANT 1	VCAT AMENDED SCHEME

FLOOR PLANS 1:200 QUADRANT 02

TP1197	0	BASEMENT 3 FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME
TP1198	0	BASEMENT 2 FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME
TP1199	0	BASEMENT 1 FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME
TP1200	0	LOWER GROUND FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME
TP1200A	0	UPPER GROUND FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME
TP1201	0	LEVEL 1 QUADRANT 2	VCAT AMENDED SCHEME
TP1202	0	LEVEL 2 QUADRANT 2	VCAT AMENDED SCHEME
TP1203	0	LEVEL 3 QUADRANT 2	VCAT AMENDED SCHEME
TP1204	0	LEVEL 4 QUADRANT 2	VCAT AMENDED SCHEME
TP1205	0	LEVEL 5-6 QUADRANT 2	VCAT AMENDED SCHEME
TP1207	0	LEVEL 7 QUADRANT 2	VCAT AMENDED SCHEME
TP1208	0	LEVEL 8 QUADRANT 2	VCAT AMENDED SCHEME
TP1209	0	LEVEL 9 QUADRANT 2	VCAT AMENDED SCHEME
TP1210	0	LEVEL 10 QUADRANT 2	VCAT AMENDED SCHEME
TP1211	0	LEVEL 11 QUADRANT 2	VCAT AMENDED SCHEME
TP1212	0	LEVEL 12 QUADRANT 2	VCAT AMENDED SCHEME
TP1213	0	LEVEL 13 QUADRANT 2	VCAT AMENDED SCHEME

FLOOR PLANS 1:200 QUADRANT 03

TP1297	0	BASEMENT 3 FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME
TP1298	0	BASEMENT 2 FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME
TP1299	0	BASEMENT 1 FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME
TP1300	0	LOWER GROUND FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME
TP1300A	0	UPPER GROUND FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME
TP1301	0	LEVEL 1 QUADRANT 3	VCAT AMENDED SCHEME
TP1302	0	LEVEL 2 QUADRANT 3	VCAT AMENDED SCHEME
TP1303	0	LEVEL 3 QUADRANT 3	VCAT AMENDED SCHEME
TP1304	0	LEVEL 4 QUADRANT 3	VCAT AMENDED SCHEME

FLOOR PLANS 1:200 QUADRANT 04

TP1400	0	LOWER GROUND FLOOR PLAN QUADRANT 4	VCAT AMENDED SCHEME
TP1400A	0	UPPER GROUND FLOOR PLAN QUADRANT 4	VCAT AMENDED SCHEME
TP1401	0	LEVEL 1 QUADRANT 4	VCAT AMENDED SCHEME
TP1402	0	LEVEL 2 QUADRANT 4	VCAT AMENDED SCHEME
TP1403	0	LEVEL 3 QUADRANT 4	VCAT AMENDED SCHEME
TP1404	0	LEVEL 4 QUADRANT 4	VCAT AMENDED SCHEME
TP1405	0	LEVEL 5 QUADRANT 4	VCAT AMENDED SCHEME
TP1406	0	LEVEL 6 ROOF QUADRANT 4	VCAT AMENDED SCHEME

ELEVATIONS

TP2000	0	NORTH ELEVATION 01	VCAT AMENDED SCHEME
TP2001	0	NORTH ELEVATION 02	VCAT AMENDED SCHEME
TP2002	0	EAST ELEVATION 01	VCAT AMENDED SCHEME
TP2003	0	EAST ELEVATION 02	VCAT AMENDED SCHEME
TP2004	0	WEST ELEVATION 01	VCAT AMENDED SCHEME
TP2005	0	WEST ELEVATION 02	VCAT AMENDED SCHEME
TP2006	0	SOUTH ELEVATION 01	VCAT AMENDED SCHEME

PODIUM ELEVATIONS

TP2100	0	SOUTH PODIUM ELEVATION	VCAT AMENDED SCHEME
TP2101	0	NORTH PODIUM ELEVATION	VCAT AMENDED SCHEME
TP2102	0	EAST PODIUM ELEVATION	VCAT AMENDED SCHEME
TP2103	0	WEST PODIUM ELEVATION	VCAT AMENDED SCHEME

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TP2500	0	SECTION A	VCAT AMENDED SCHEME
TP2501	0	SECTION B	VCAT AMENDED SCHEME

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TP3000	0	VIEW FROM SOUTH OF SEPARATION ST	VCAT AMENDED SCHEME
TP3001	0	VIEW FROM ALL NATIONS PARK	VCAT AMENDED SCHEME
TP3002	0	VIEW FROM NORTHWESTERN CAR PARK	VCAT AMENDED SCHEME
TP3003	0	VIEW FROM ALL NATIONS HILL	VCAT AMENDED SCHEME
TP3004	0	VIEW FROM ALL NATIONS PARK PLAYGROUND	VCAT AMENDED SCHEME
TP3005	0	VIEW FROM WEST OF SEPARATION ST	VCAT AMENDED SCHEME

MATERIAL FINISHES

TP3500	0	FINISHES SCHEDULE	VCAT AMENDED SCHEME

CLAUSE 58 ASSESSMENT

TP5000	0	TOWER A APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5001	0	TOWER A APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5002	0	TOWER A APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5003	0	TOWER A APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5004	0	TOWER A APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5005	0	TOWER A APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5006	0	TOWER A APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5007	0	TOWER B APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5008	0	TOWER B APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5009	0	TOWER B APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5010	0	TOWER B APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5011	0	TOWER C1 APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5012	0	TOWER C1 APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5013	0	TOWER C1 APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5014	0	TOWER C1 APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5015	0	TOWER C1 APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5016	0	TOWER C1 APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5017	0	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5018	0	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5019	0	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5020	0	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5021	0	TOWER C2 APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5022	0	TOWER C2 APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5023	0	TOWER D APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME
TP5024	0	TOWER D APARTMENT TYPES - 2BR	VCAT AMENDED SCHEME
TP5025	0	TOWER D APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME
TP5026	0	ISLAND BENCH / DINING EXEMPLAR	VCAT AMENDED SCHEME
TP5100	0	CLAUSE 58 MASTER SCHEDULE	VCAT AMENDED SCHEME
TP5101	0	CLAUSE 58 STORAGE SCHEDULE	VCAT AMENDED SCHEME
TP5200	0	OUTDOOR COMMUNAL AREA SOLAR ANALYSIS - JUNE	VCAT AMENDED SCHEME
TP5201	0	OUTDOOR COMMUNAL AREA SOLAR ANALYSIS - JUNE	VCAT AMENDED SCHEME

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	COVER PAGE	VCAT AMENDED SCHEME	00	**TP0000**



CRA SURVEY PTY LTD
LAND SURVEYORS TOWN PLANNERS
DEVELOPMENT CONSULTANTS

7A/346 Belmore Road
Balwyn Vic 3103

office@crsurvey.com.au
Tel: 03 9890 0933

REF: 6561FL2 ORIGINAL SHEET SIZE : A1

LEVEL DATUM: AHD
CONTOUR INTERVAL: 0.2
LENGTHS ARE IN METRES

SURVEYOR: JD

DRAWN BY: BW
DATE OF SURVEY: 24/6/19
VERSION: 1 (22.07.2019)

UNIT 33, 25 SEPARATION STREET
NORTHCOTE, 3070

LOT 50, 51 & 76 ON SP 27953
V.10490 F.290, V.10492 F. 684 & V.10490 F.315

COUNTY OF BOURKE
PARISH OF JIKA JIKA
CROWN ALLOTMENT 2154 (PART)
CROWN PORTIONS 107 (PT), 112 (PT) & 122 (PT)

PLAN OF FEATURE & LEVEL SURVEY

SHEET 1 OF 1 ORIGINAL SCALE 1:400

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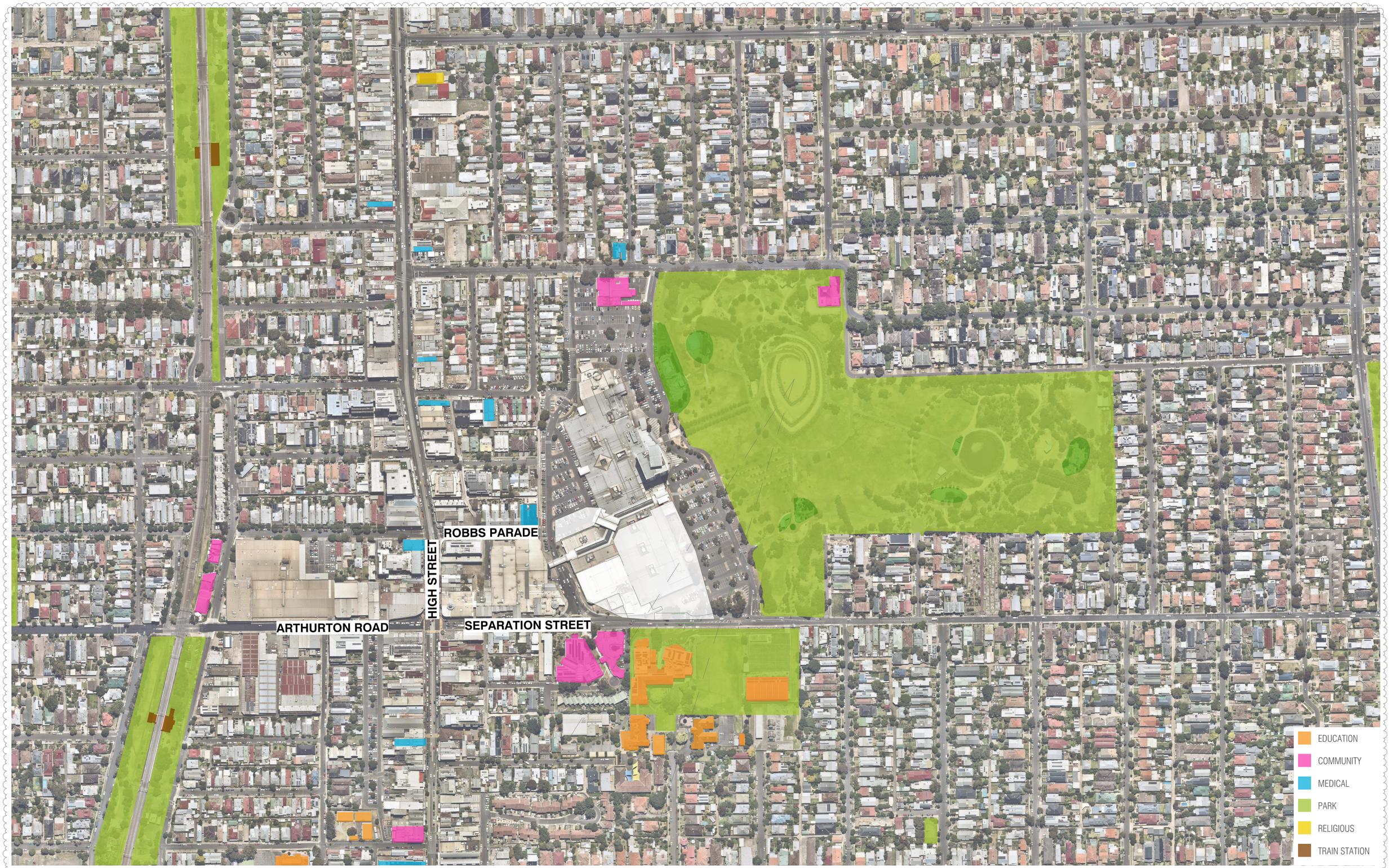
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	EXISTING CONDITIONS PLAN - SITE SURVEY	VCAT AMENDED SCHEME	00	TP0001



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VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	PRECINCT PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP0002



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25 SEPARATION STREET
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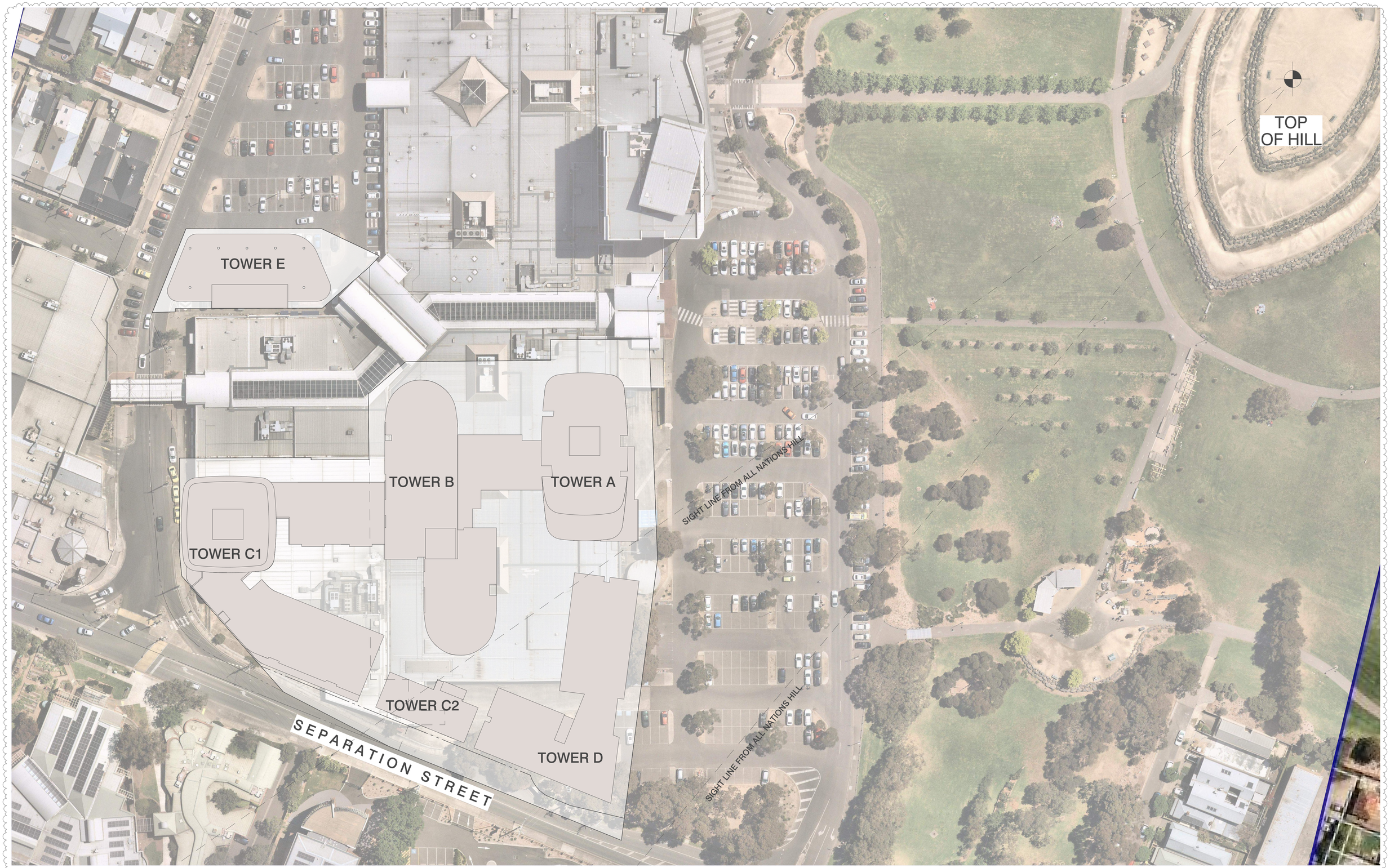
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
LOCALITY PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP0003



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REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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NORTHCOTE VIC 3070

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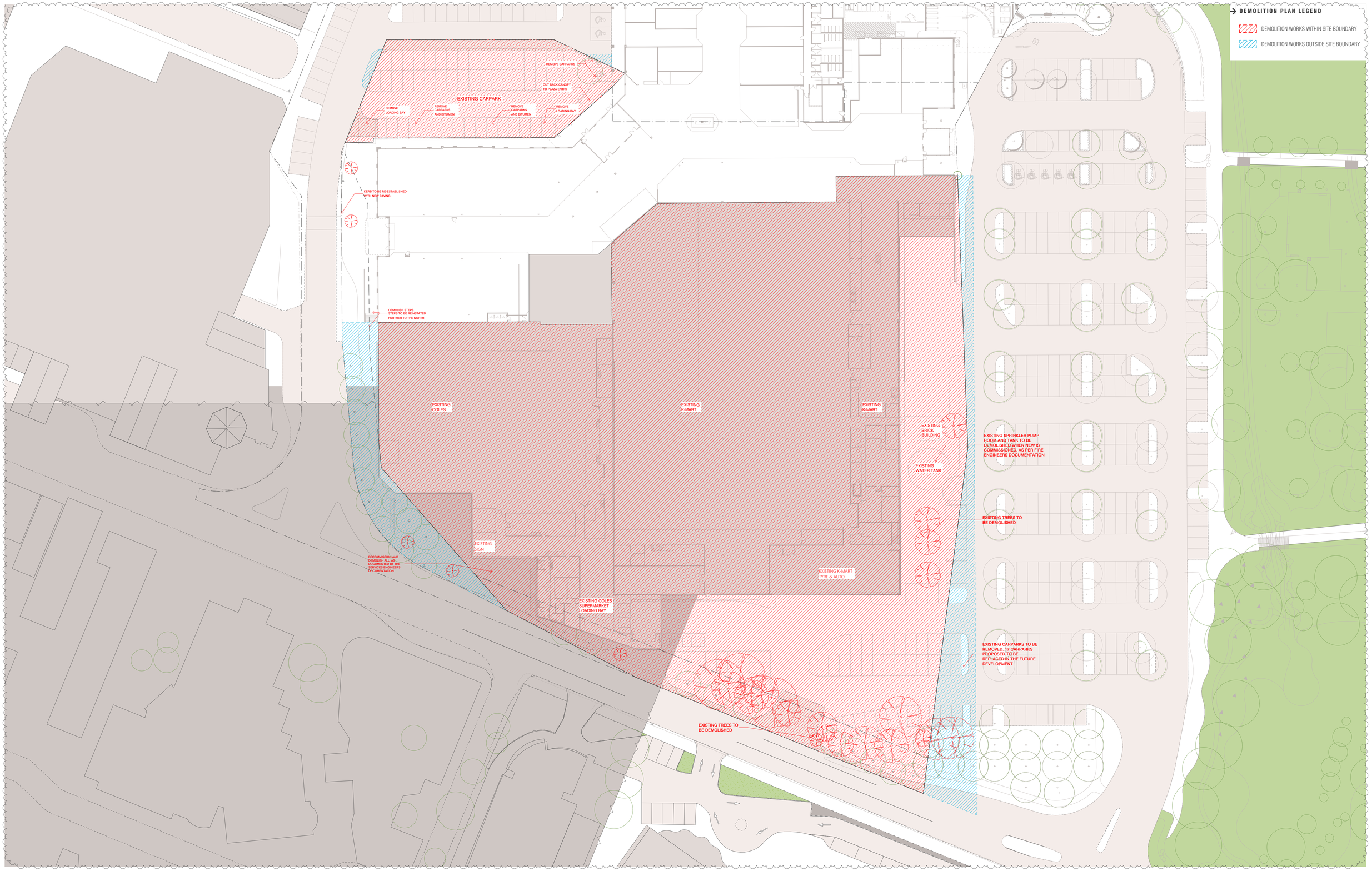
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	SITE PLAN	VCAT AMENDED SCHEME	00	TP0004



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

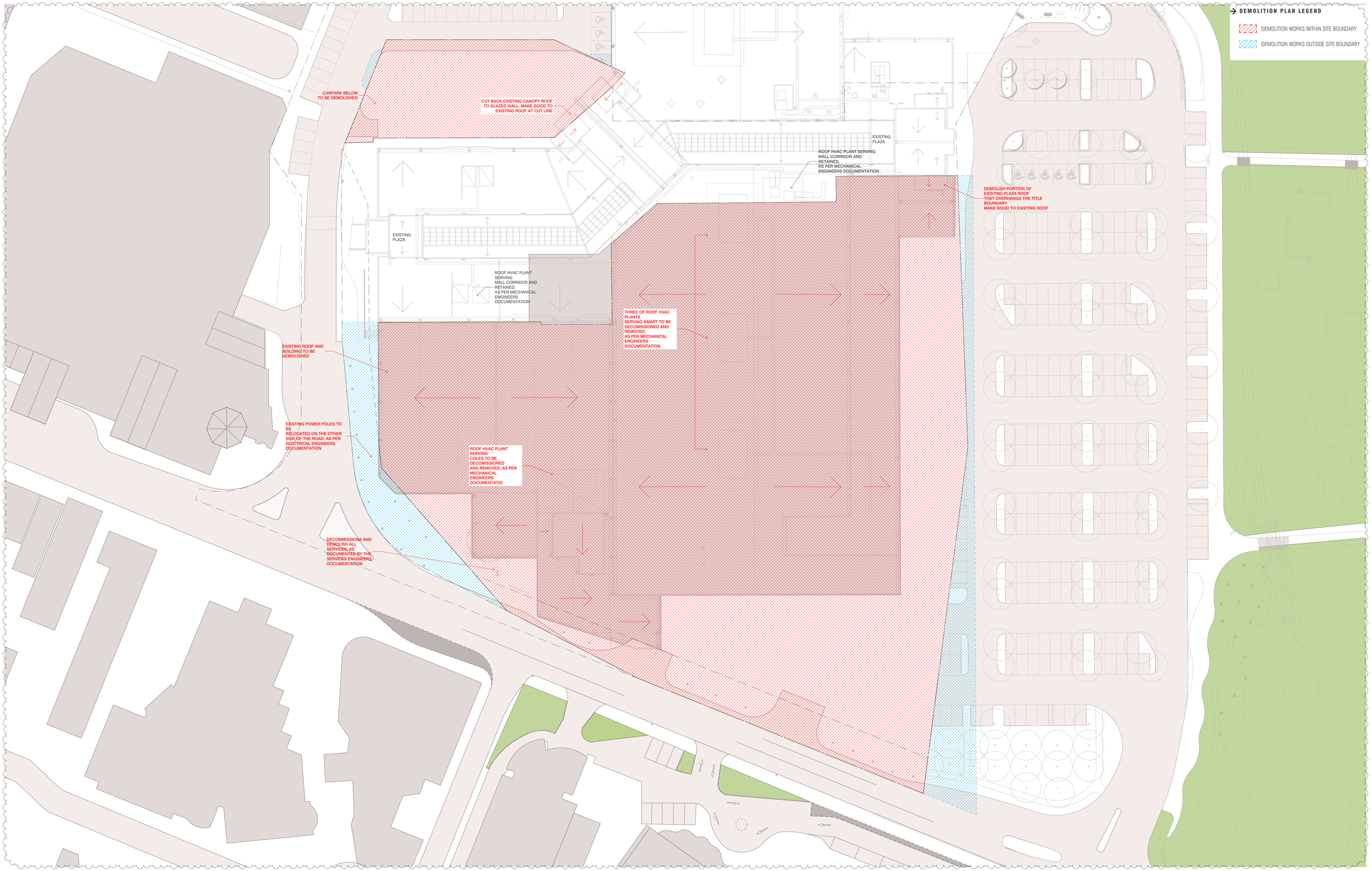
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
LOWER GROUND DEMOLITION PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP0200



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
UPPER GROUND DEMOLITION PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP0201

GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

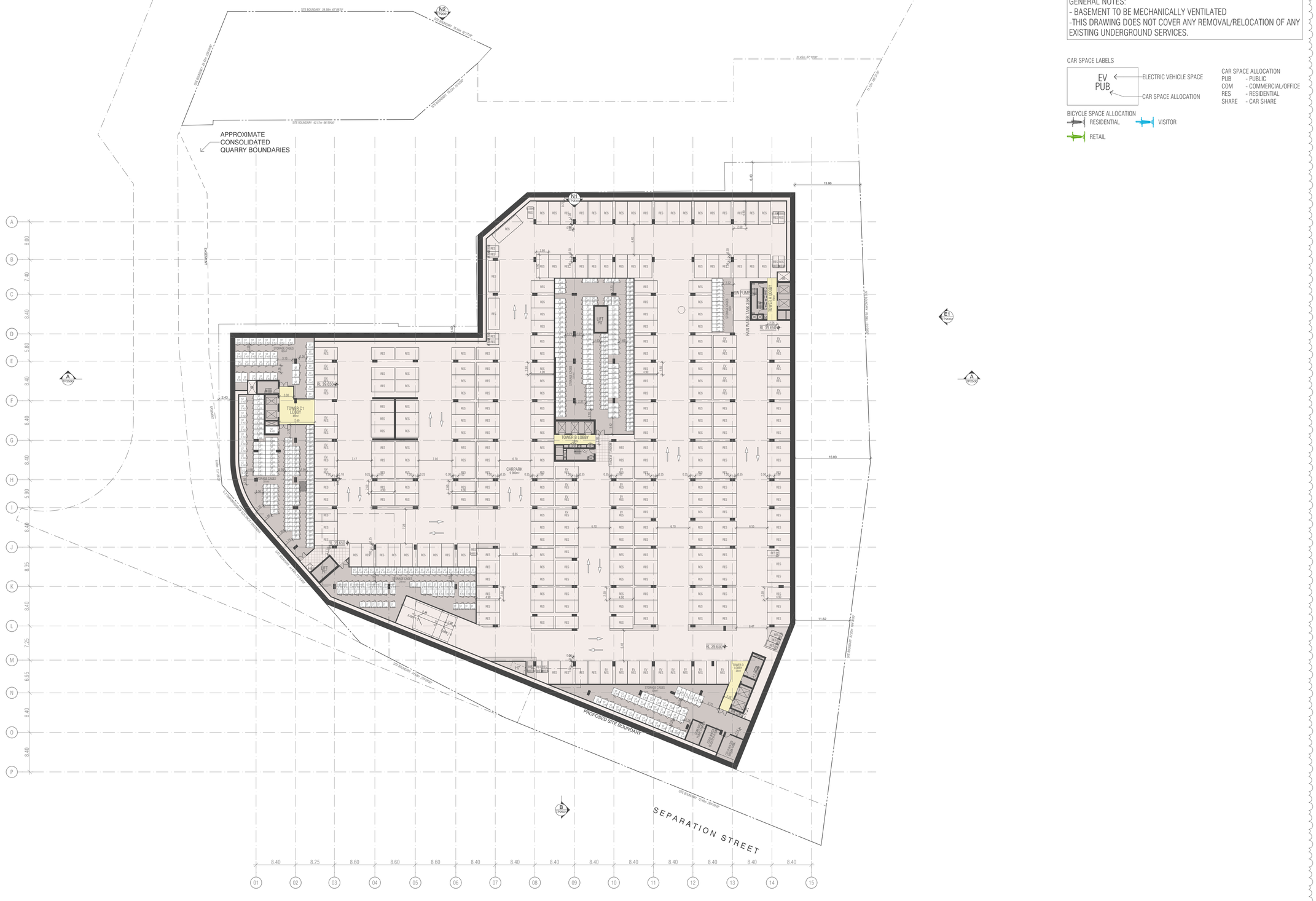
CAR SPACE LABELS

EV
PUB

EV — ELECTRIC VEHICLE SPACE
PUB — CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
PUB - PUBLIC
COM - COMMERCIAL/OFFICE
RES - RESIDENTIAL
SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
RESIDENTIAL
VISITOR
RETAIL



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REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
BASEMENT 3 FLOOR PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP0997

GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

EV
PUB

ELECTRIC VEHICLE SPACE
CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
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COM - COMMERCIAL/OFFICE
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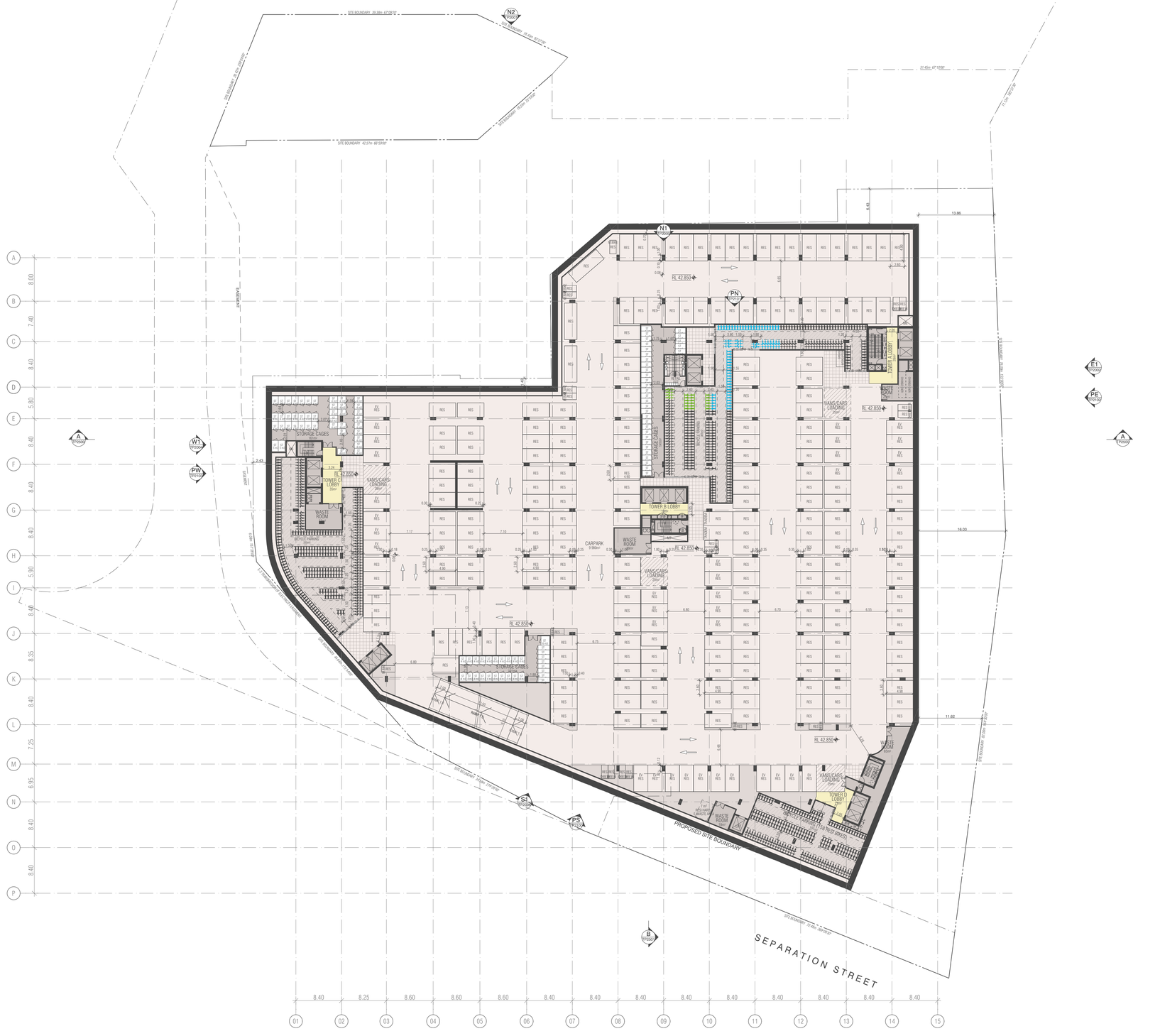
SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
RESIDENTIAL
VISITOR
RETAIL



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00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
BASEMENT 2 FLOOR PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP0998

GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

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PUB

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CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
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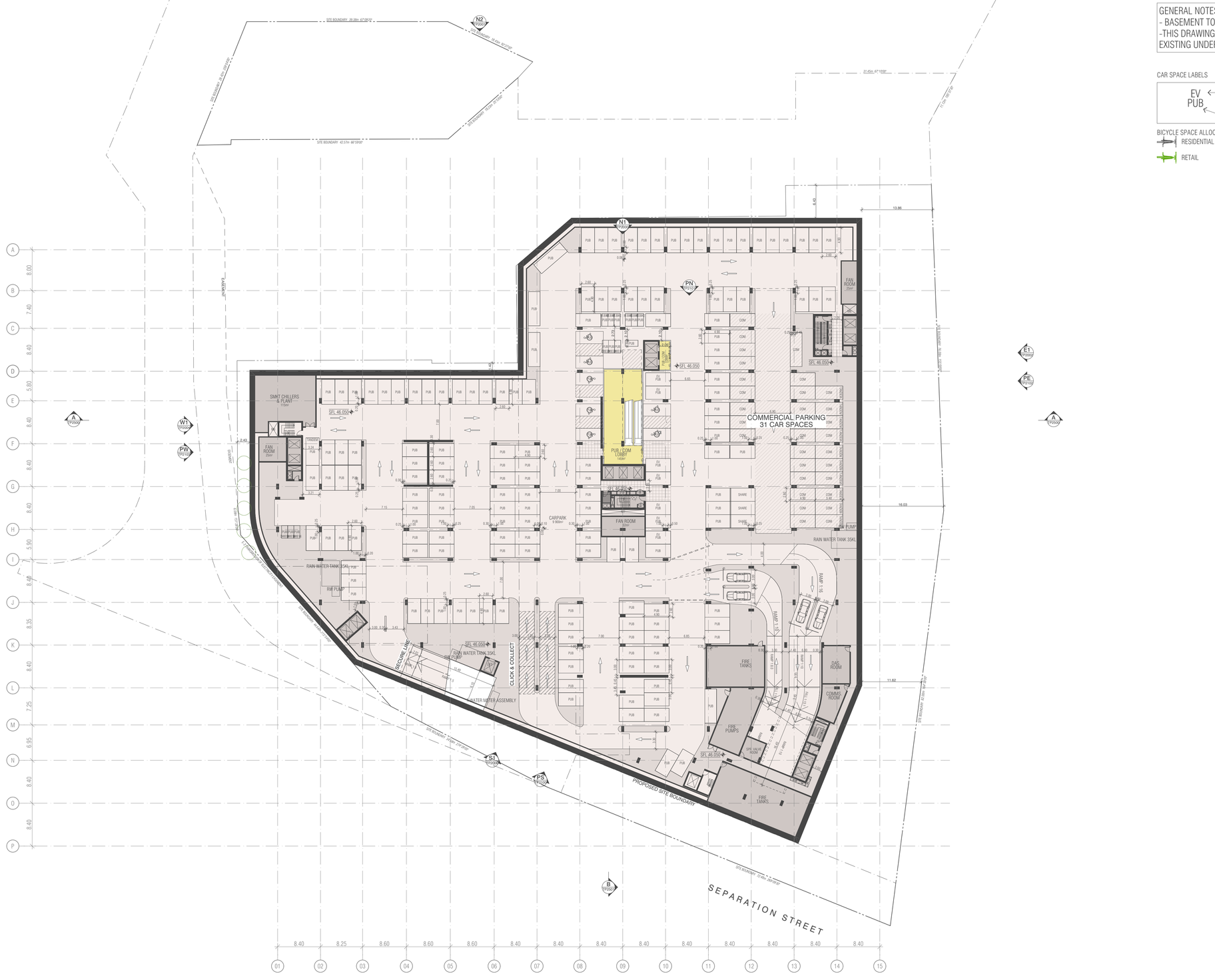
RESIDENTIAL
VISITOR
RETAIL


SITE BOUNDARY 39.58m 47°26'0"
SITE BOUNDARY 39.40m 90°0'0"
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SITE BOUNDARY 37.45m 47°10'0"
SITE BOUNDARY 41.54m 133°0'0"
SITE BOUNDARY 13.86m
SITE BOUNDARY 16.03m
SITE BOUNDARY 11.62m
SITE BOUNDARY 42.46m 136°30'0"
PROPOSED SITE BOUNDARY
SEPARATION STREET
COMMERCIAL PARKING
31 CAR SPACES
PUB / COM LOBBY
CARPARK
FAN ROOM
SMAT CHILLERS & PLANT
FAN ROOM
RAIN WATER TANK 35KL
RW PUMP
RAIN WATER TANK 35KL
RAIN WATER TANK 35KL
CLICK & COLLECT
WATER METER ASSEMBLY
SECURE LINE
RAMP 1:8
RAMP 1:10
RAMP 1:10
FIRE TANKS
FIRE PUMPS
SPR VALVE ROOM
FIRE TANKS
DAS ROOM
COMMS ROOM
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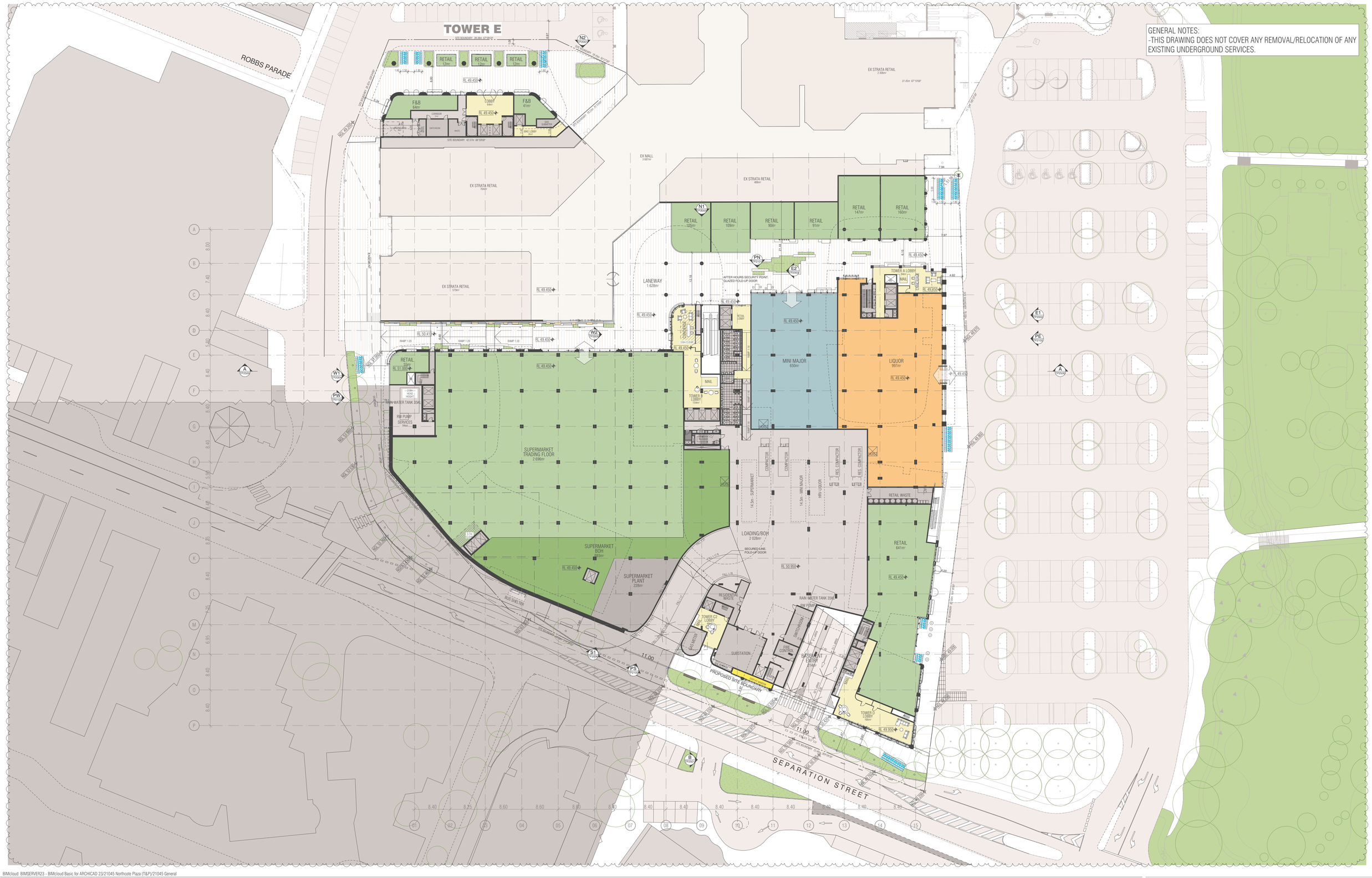
SFL 46.050
SFL 46.050



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REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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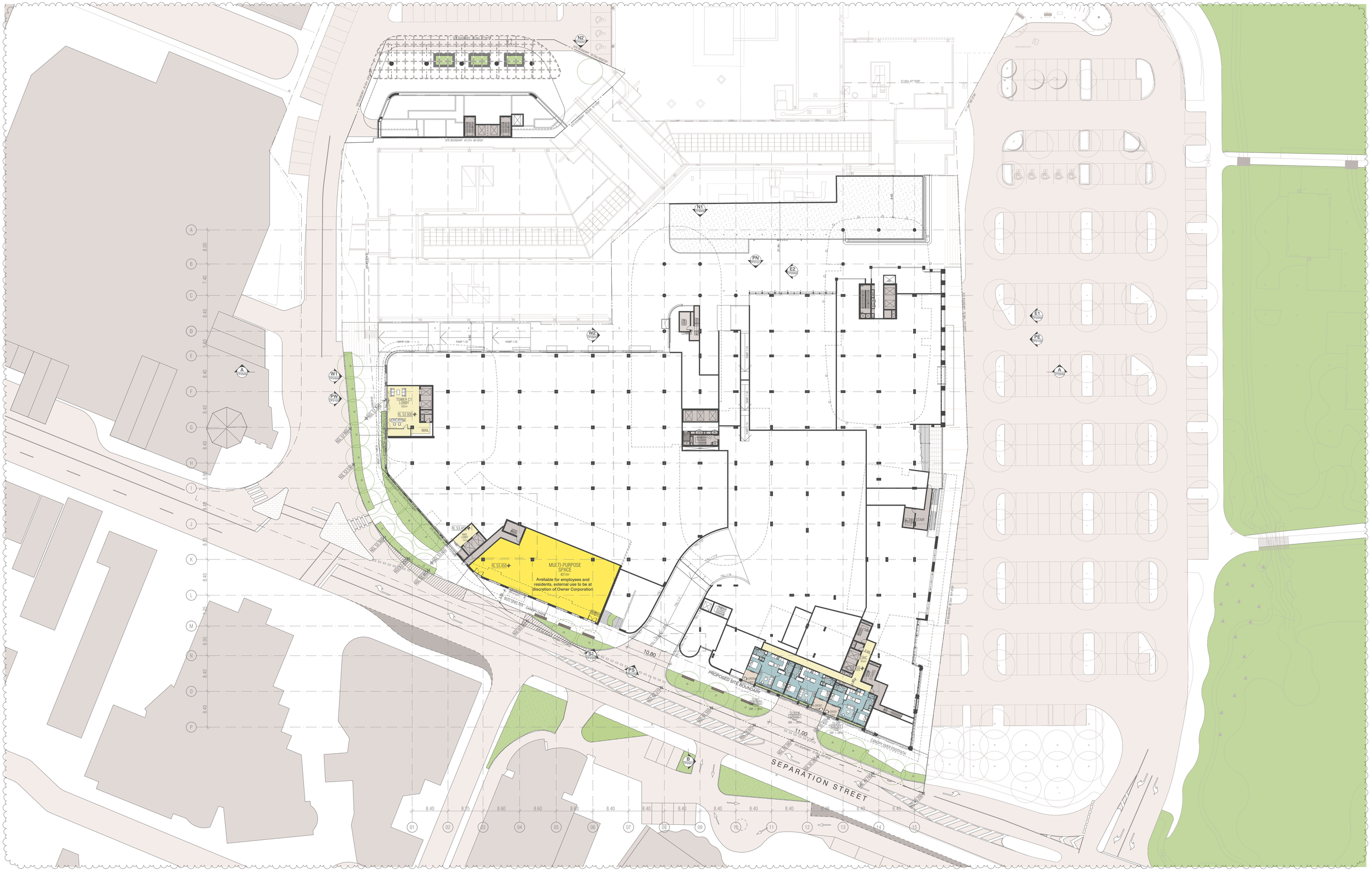
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LOWER GROUND FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1000


SEPARATION STREET
MULTI-PURPOSE SPACE
421m²
Available for employees and residents, external use to be at discretion of Owner Corporation
TOWER C1 LOBBY
182m²
CONCIERGE
MAIL
RL 52.000
RL 53.450
RL 53.450
PROPOSED SITE BOUNDARY
CANOPY OVER FOOTPATH
RAMP 1:20
RAMP 1:14
STAIR
10.80
11.00
8.40
8.25
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REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

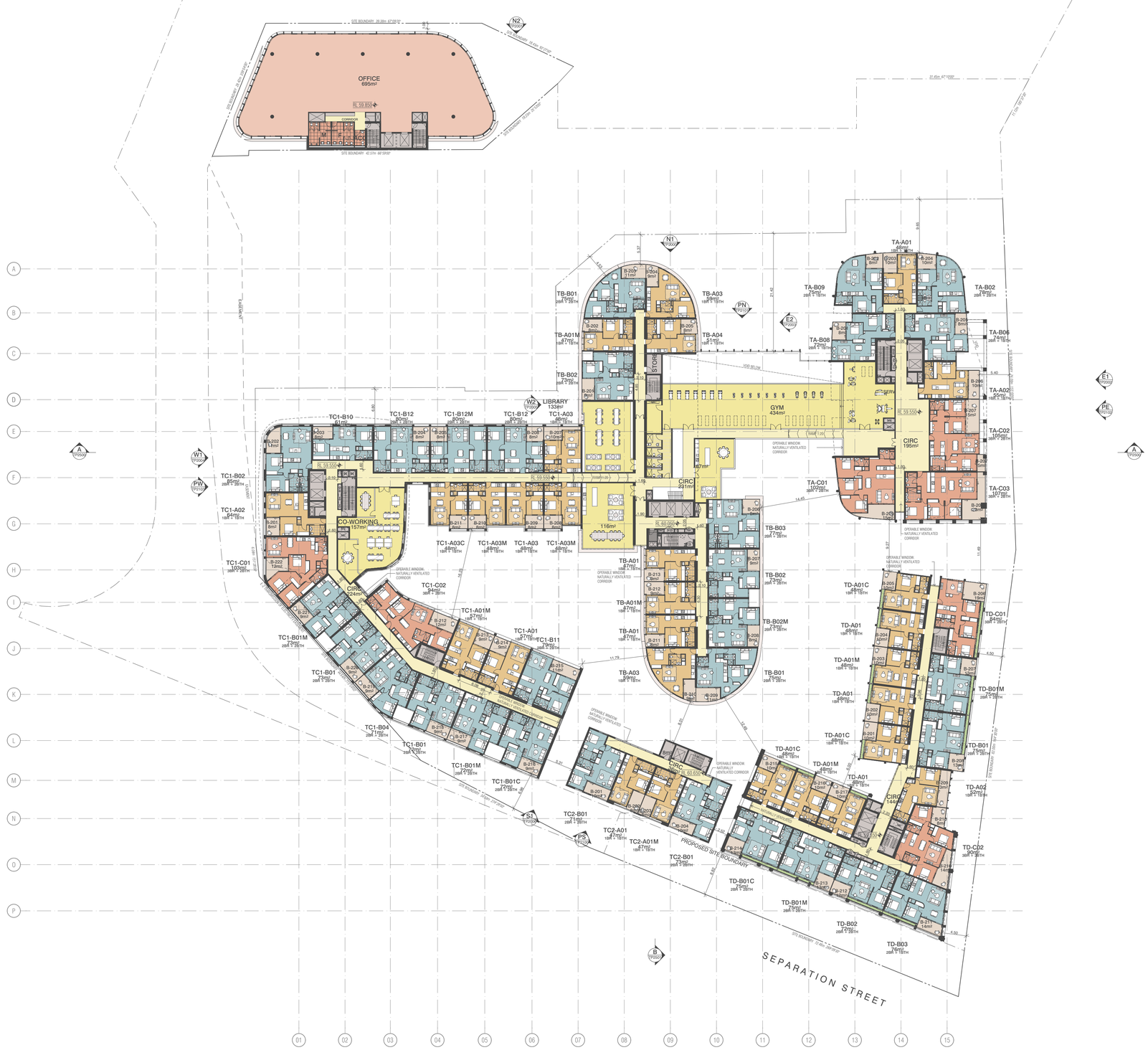
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
LEVEL 1 FLOOR PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1001



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE LEVEL 2 FLOOR PLAN

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1002



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REVISION

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REVISION

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE

LEVEL 3 FLOOR PLAN

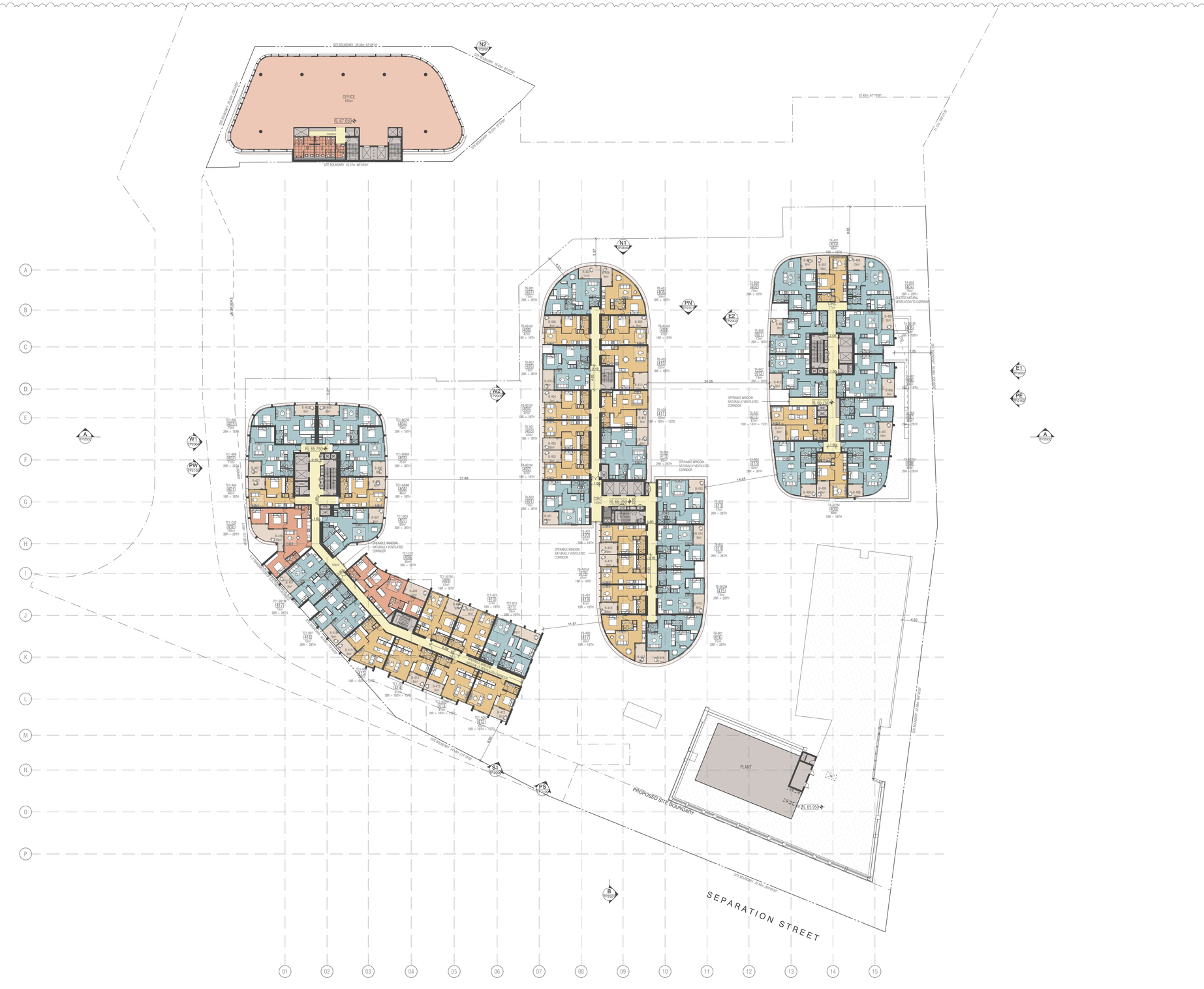
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP1003



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REVISION

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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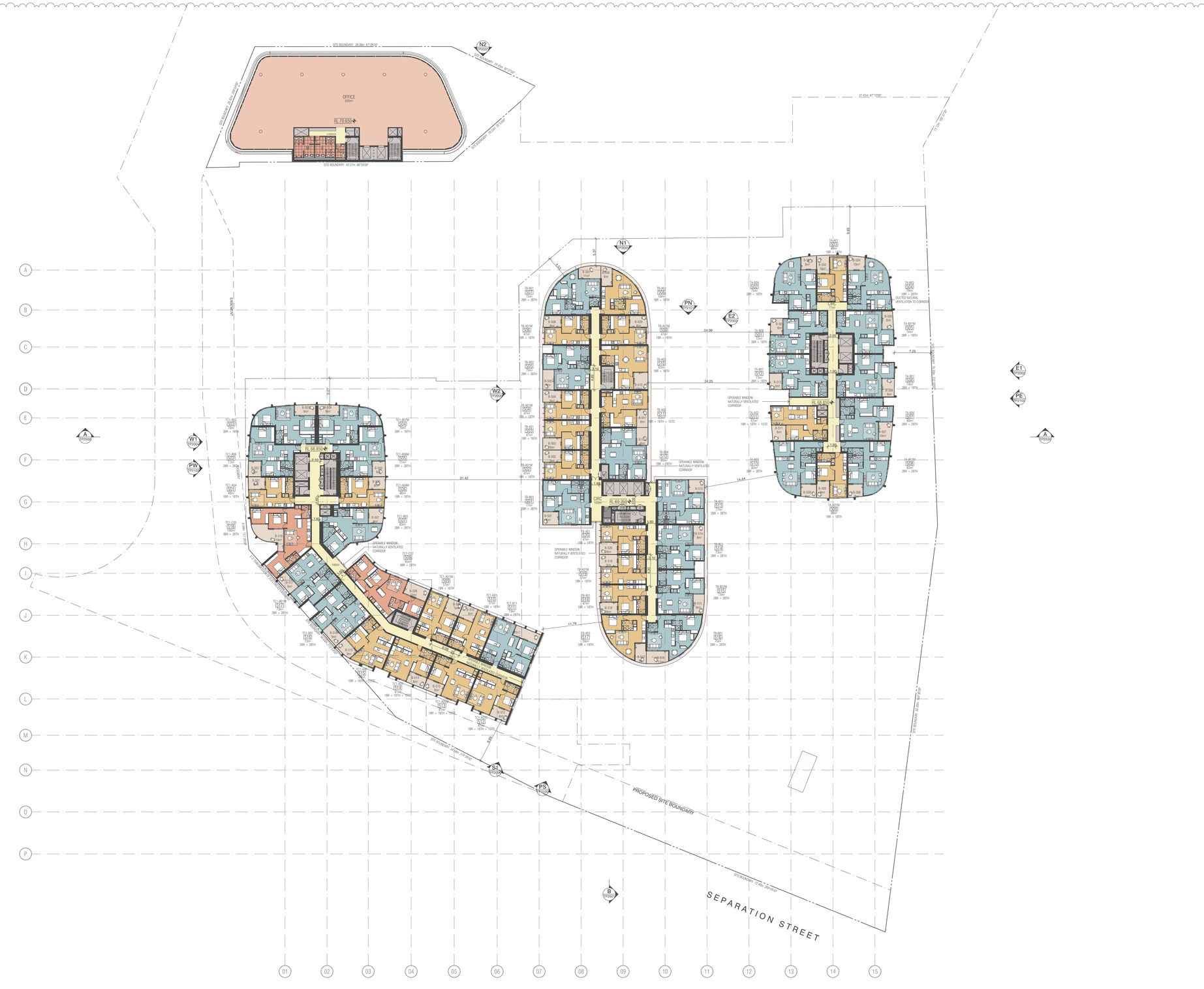
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 4 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1004



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REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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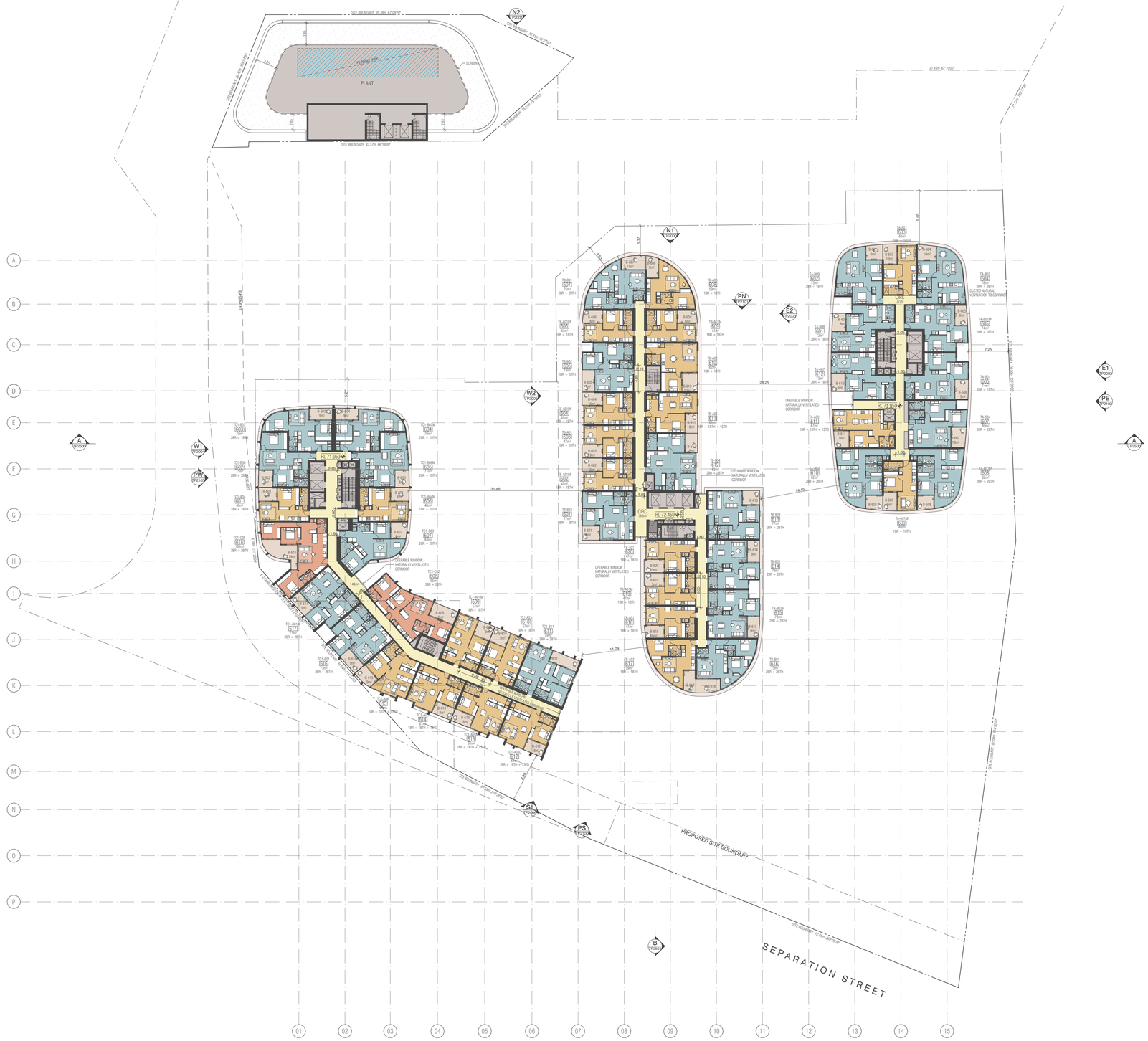
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 5 FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1005


SITE BOUNDARY 29.58m 67°26'0"
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SITE BOUNDARY 42.61m 66°19'0"
PLANT
SCREEN
PLANTING
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41.13m 160°0'0"
N2 TP0007
N1 TP0007
PN TP0007
E2 TP0007
E1 TP0007
PE TP0007
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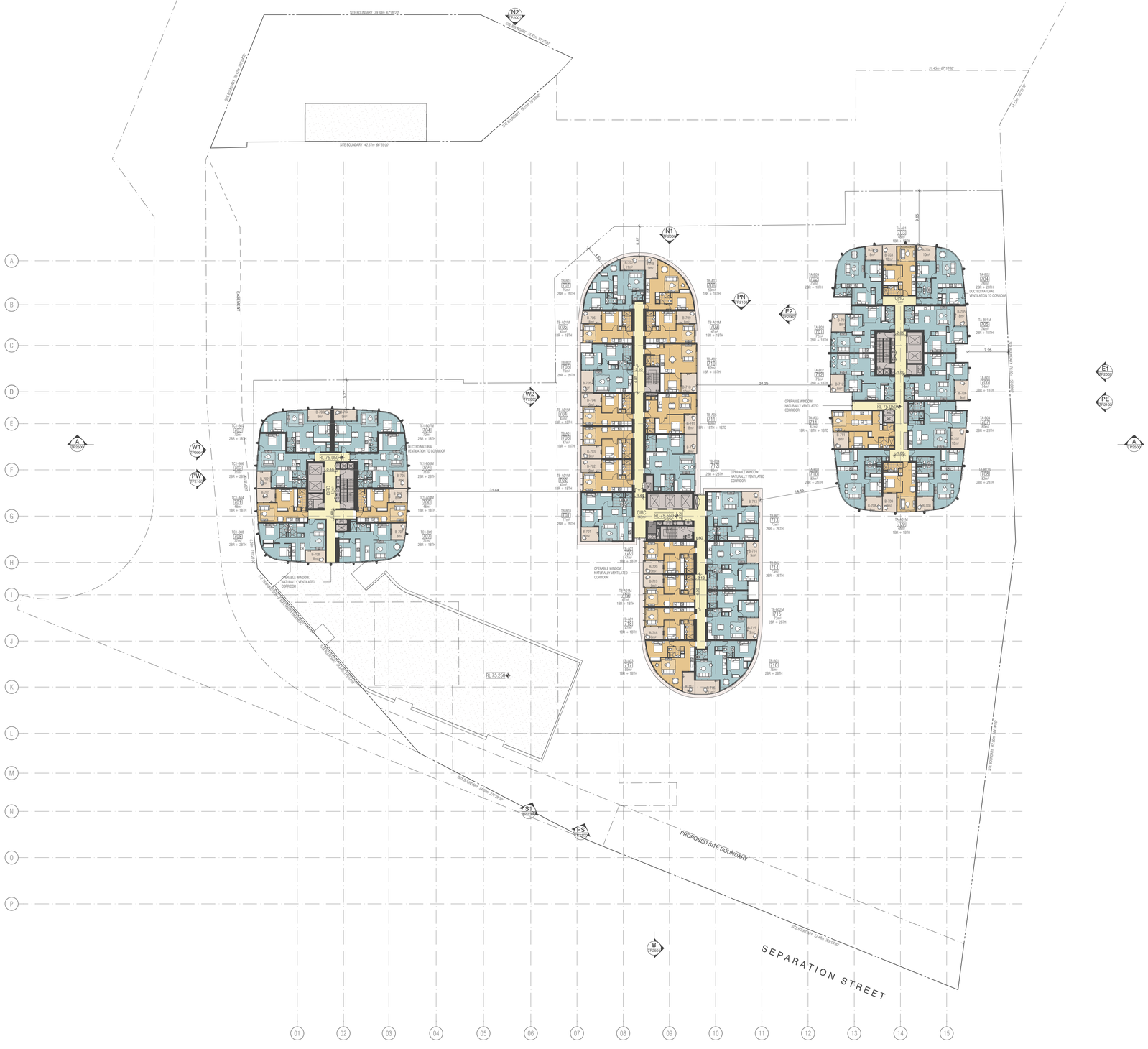
PW TP0007
S1 TP0007
PS TP0007
B TP0007
A TP0007
R.L 71.95m
R.L 72.400
R.L 71.95m
OPERABLE WINDOW - NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW - NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW



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00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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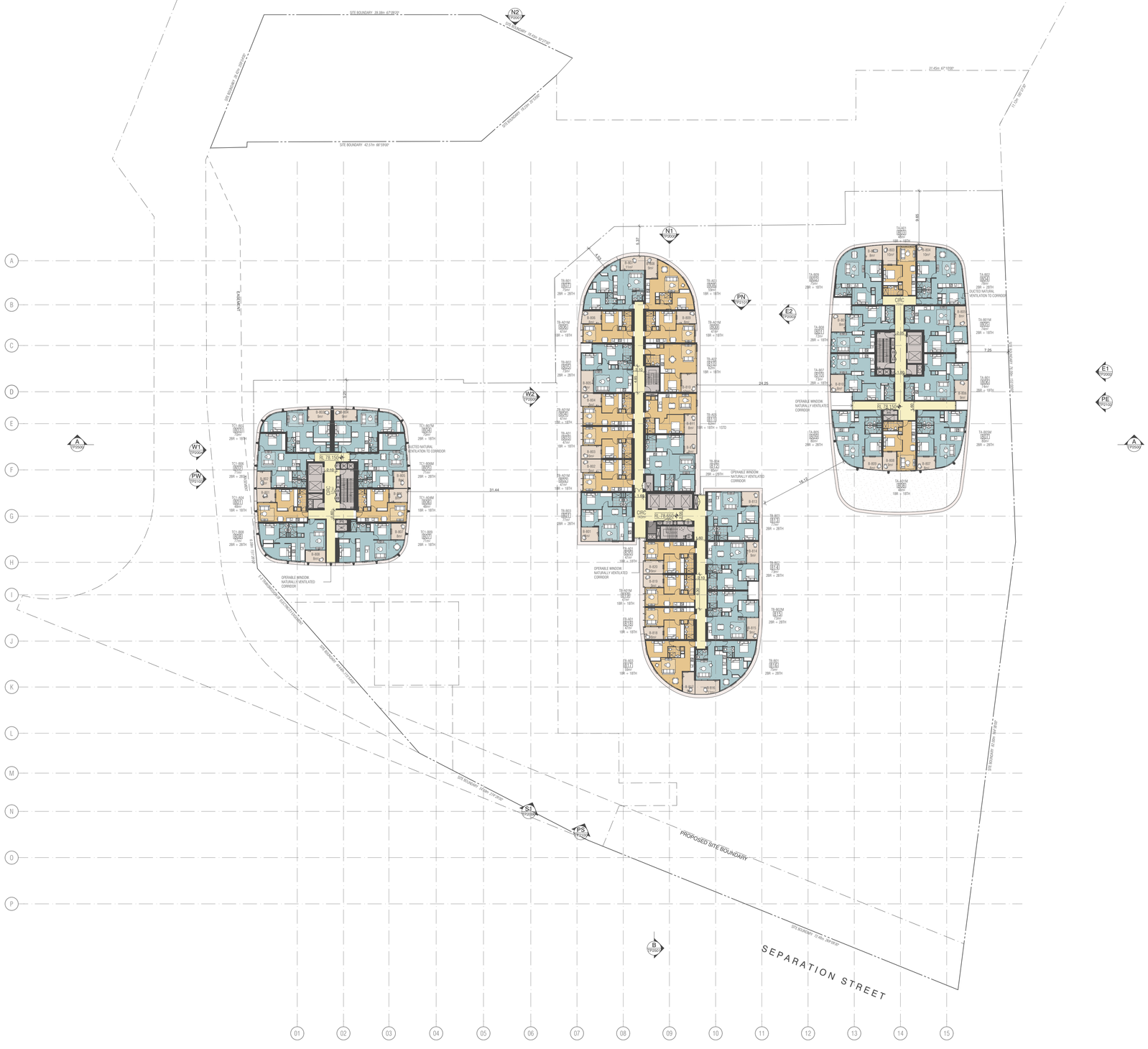
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 7 FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1007



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REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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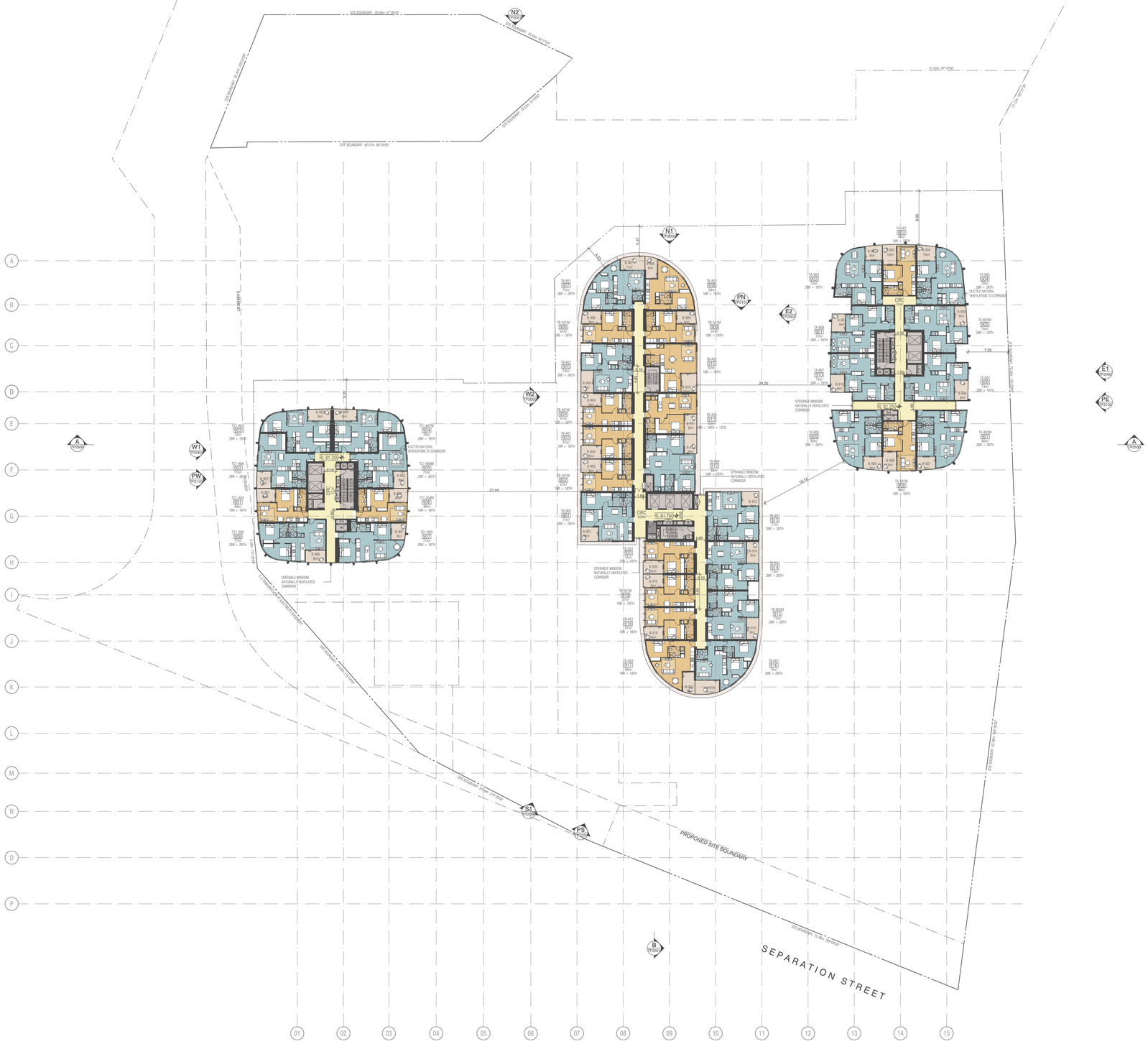
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 8 FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1008



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00	VCAT AMENDED SCHEME	VN	13.09.2021

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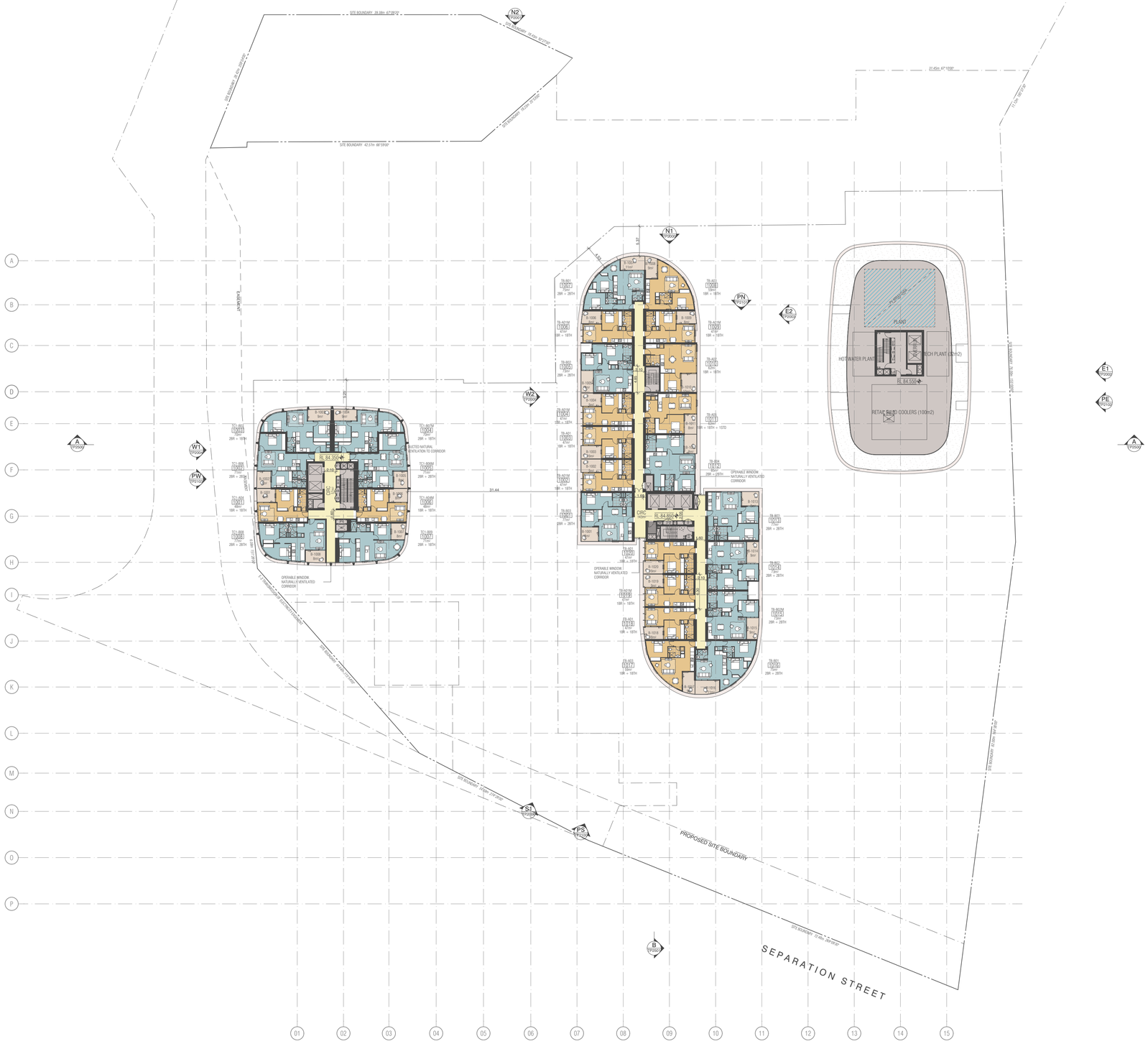
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 9 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1009



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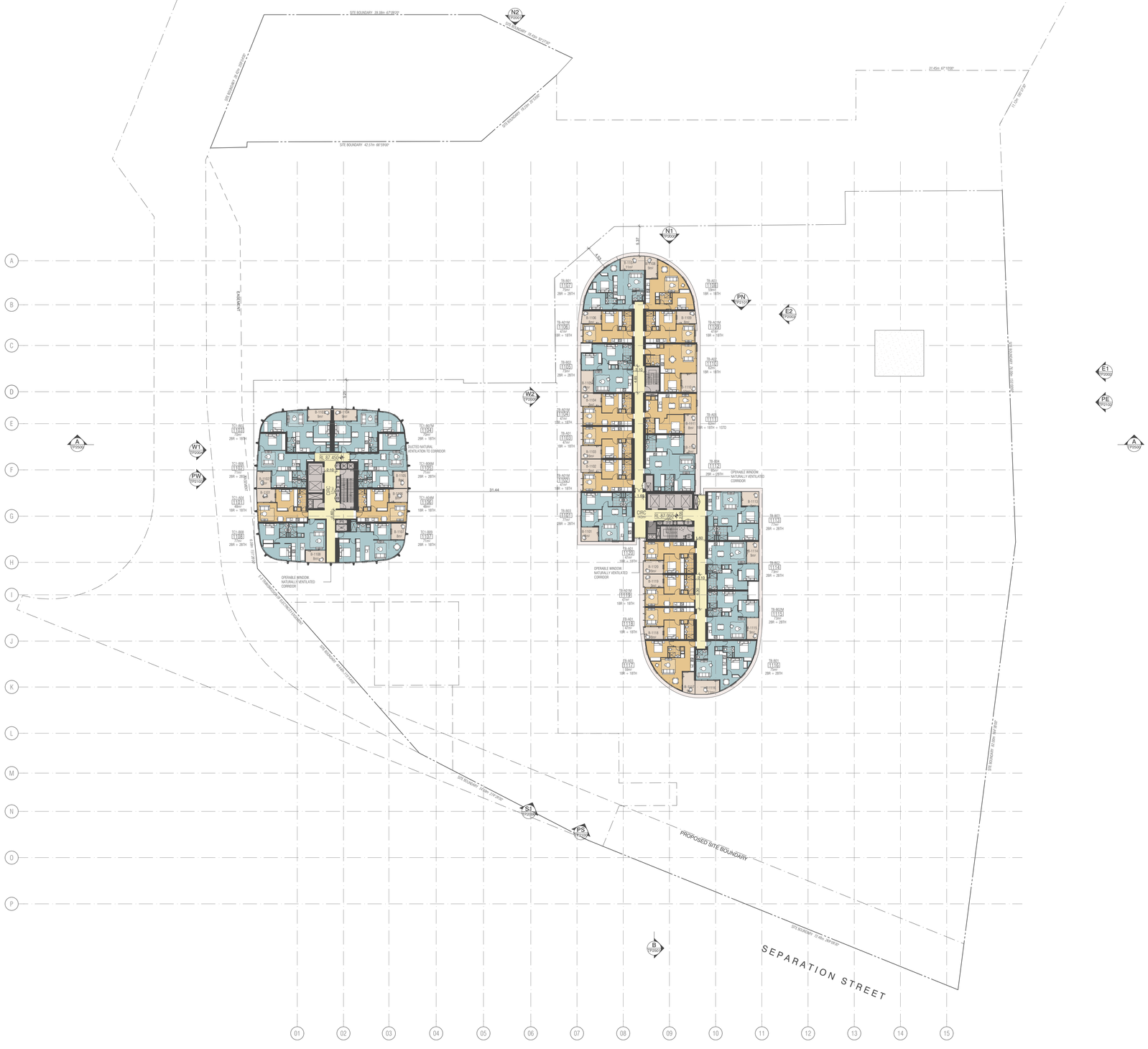
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
LEVEL 10 FLOOR PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1010



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00	VCAT AMENDED SCHEME	VN	13.09.2021

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NORTHCOTE VIC 3070

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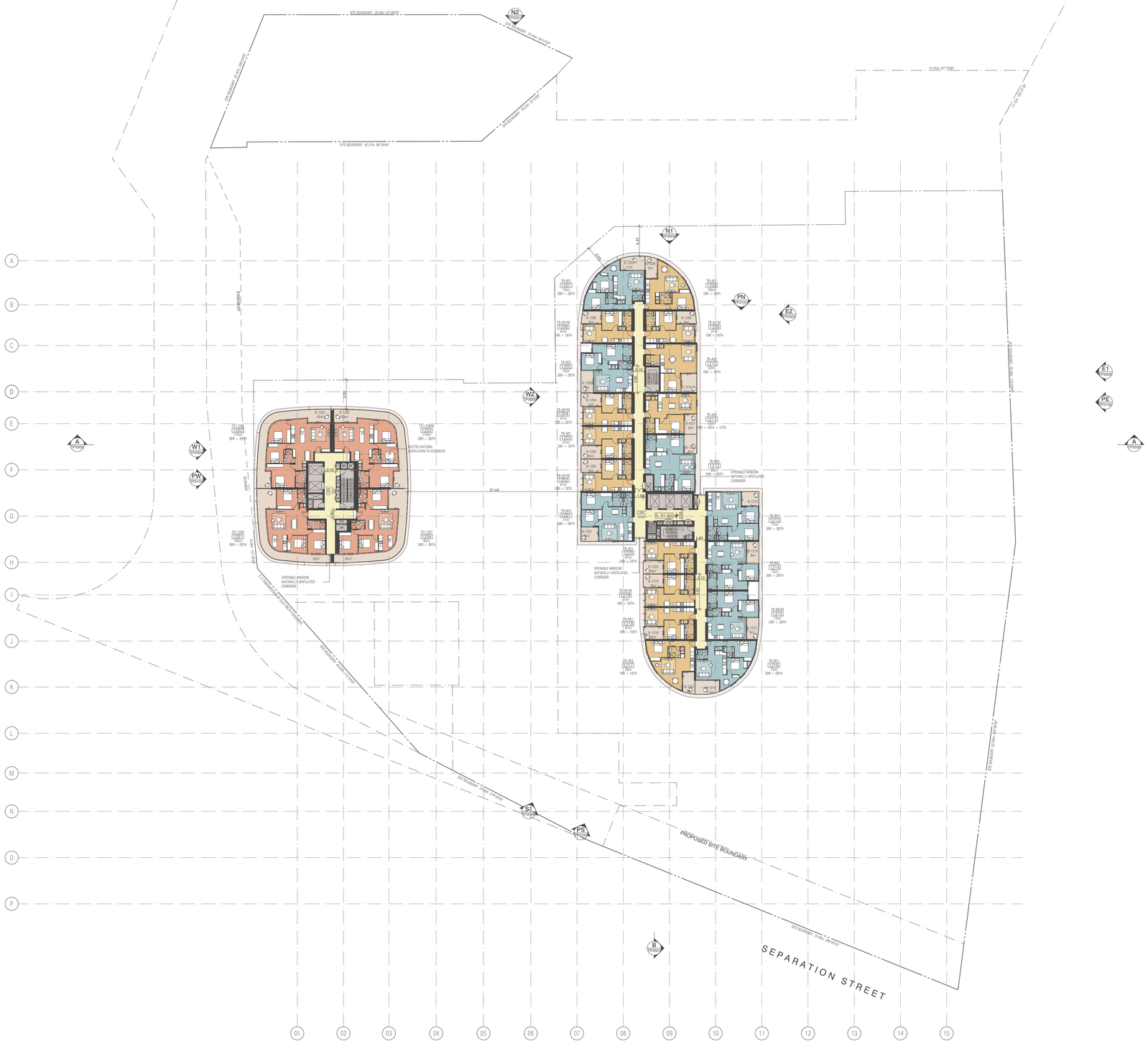
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 11 FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1011



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REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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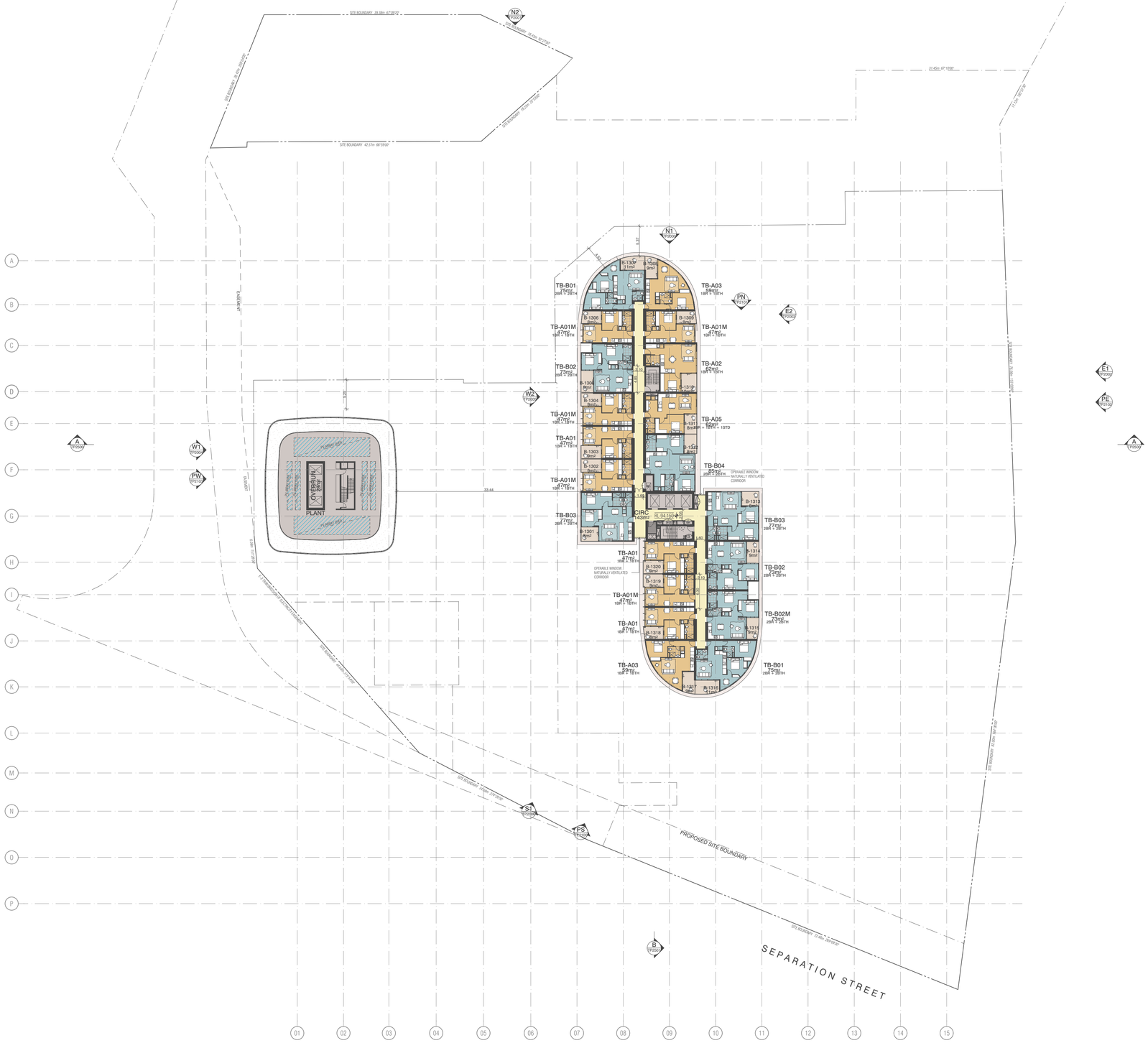
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 12 FLOOR PLAN	VCAT AMENDED SCHEME	00	TP1012



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00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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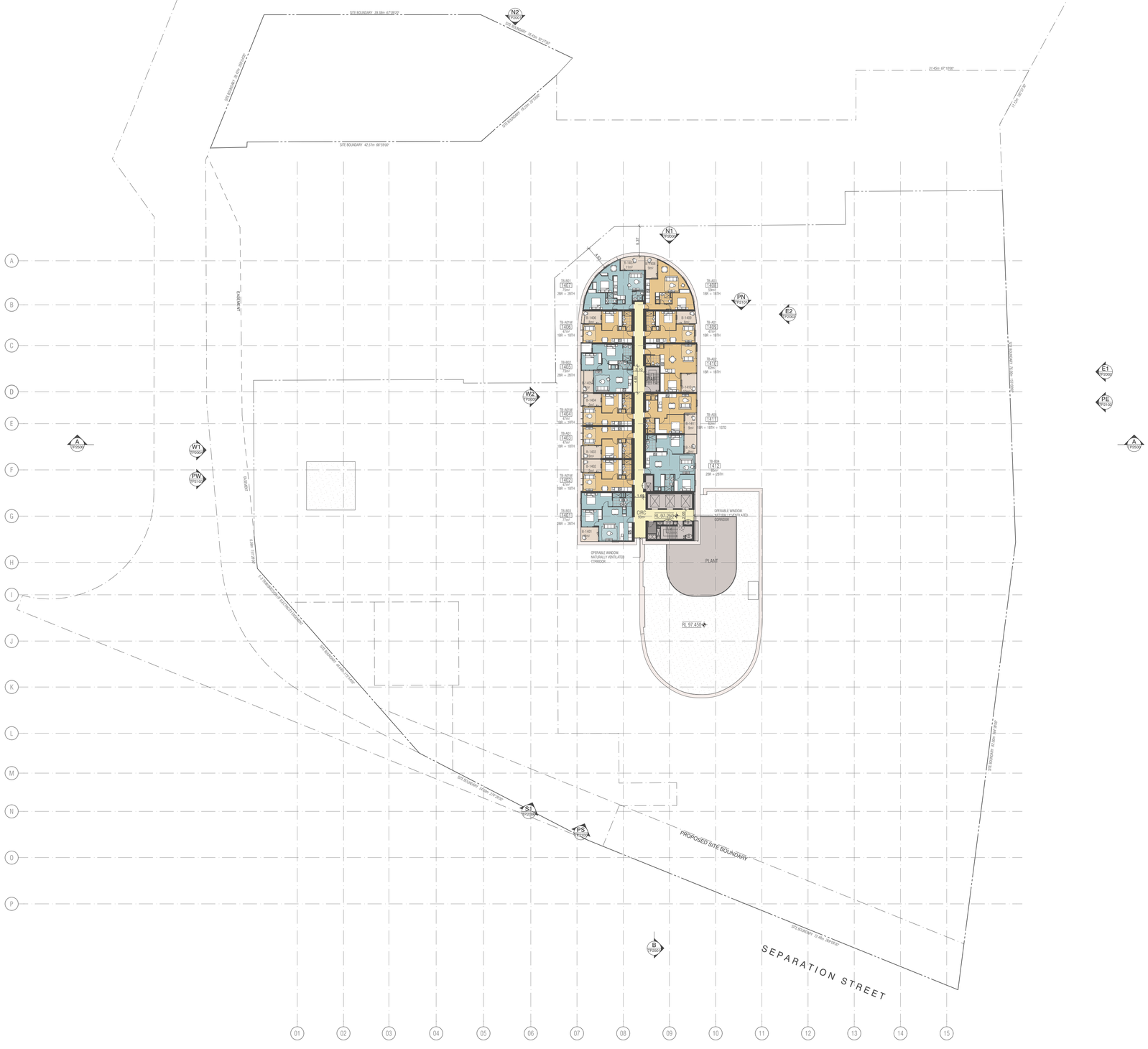
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1	LEVEL 13 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1013



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REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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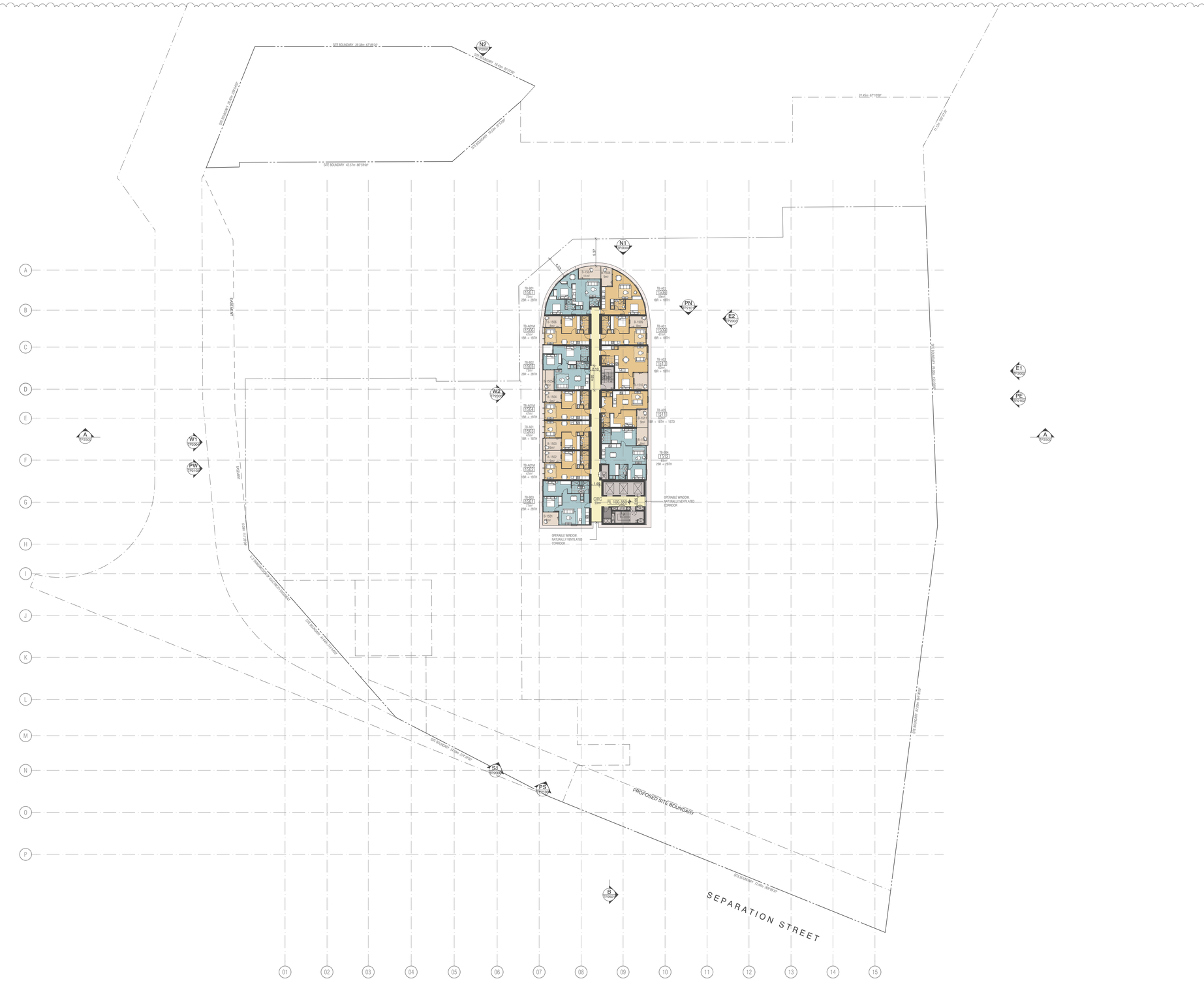
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

DRAWING TITLE
LEVEL 14 FLOOR PLAN

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1014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SITE BOUNDARY 39.42m 90°0'0"
SITE BOUNDARY 42.51m 48°59'0"
SITE BOUNDARY 51.45m 47°10'0"
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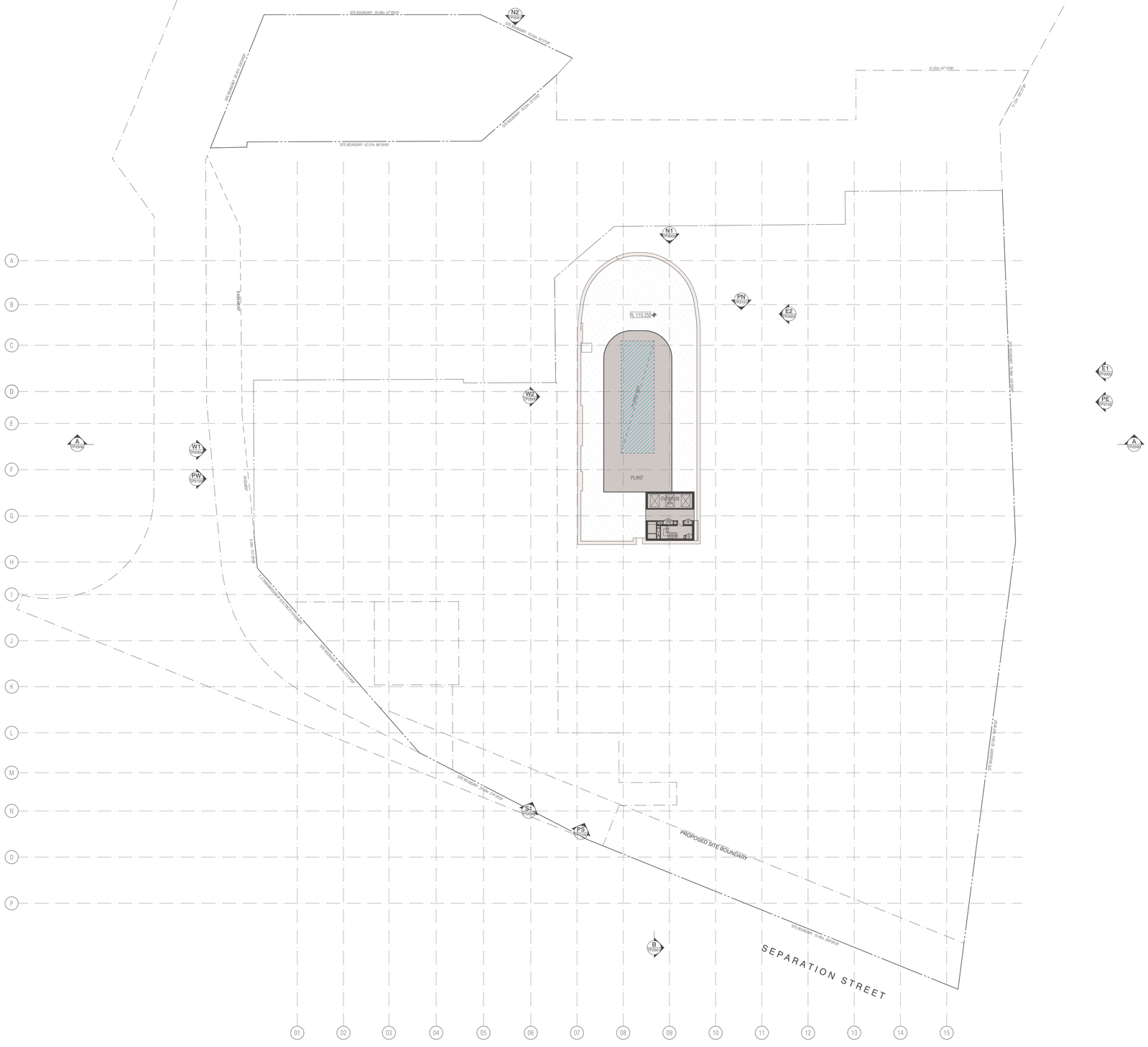
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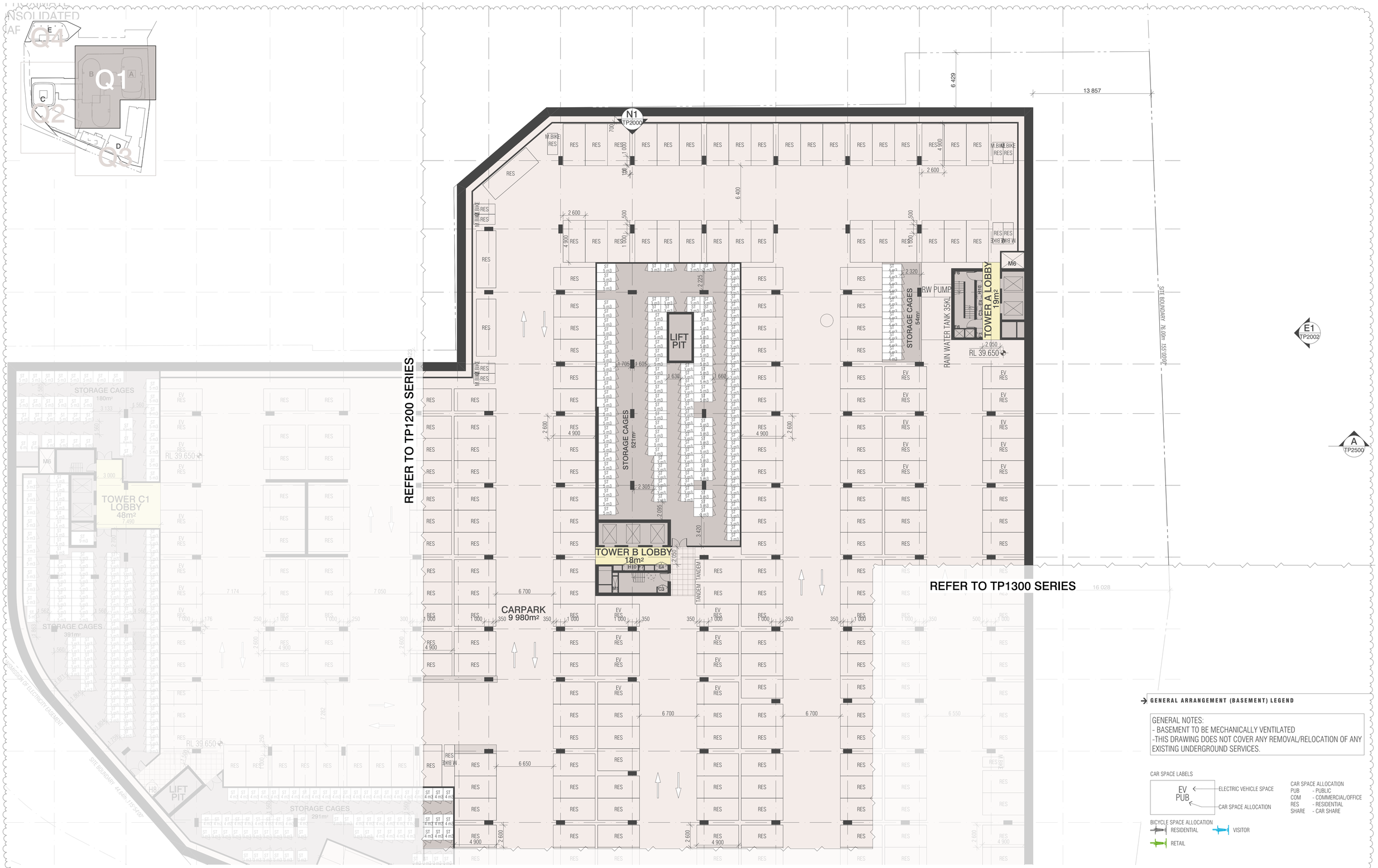

GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

EV PUB
- ELECTRIC VEHICLE SPACE
- CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
- PUB - PUBLIC
- COM - COMMERCIAL/OFFICE
- RES - RESIDENTIAL
- SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
- RESIDENTIAL
- VISITOR
- RETAIL

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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
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25 SEPARATION STREET
NORTHCOTE VIC 3070

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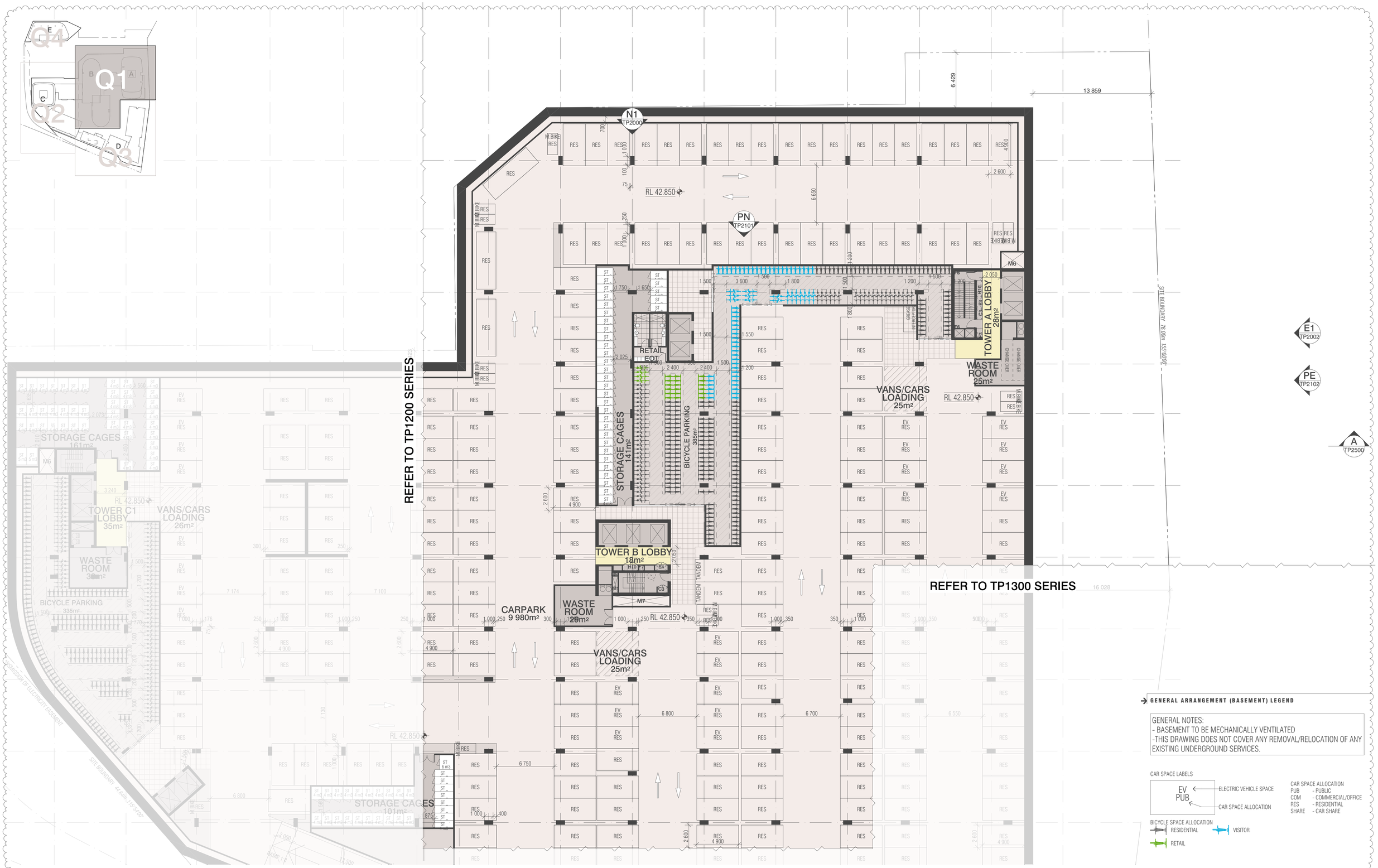
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 3 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME	00	TP1097



GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

EV PUB — ELECTRIC VEHICLE SPACE / CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
- PUB - PUBLIC
- COM - COMMERCIAL/OFFICE
- RES - RESIDENTIAL
- SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
- RESIDENTIAL
- VISITOR
- RETAIL

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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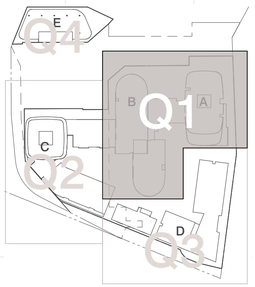
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 2 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME	00	TP1098



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CAR SPACE ALLOCATION
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- RESIDENTIAL
- VISITOR
- RETAIL

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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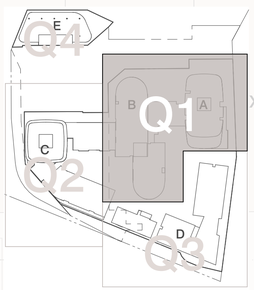
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 1 FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME	00	TP1099



EX MALL
3 687m²

EX STRATA RETAIL
764m²

EX STRATA RETAIL
488m²

EX STRATA RETAIL
579m²

RETAIL
105m²

RETAIL
109m²

RETAIL
90m²

RETAIL
91m²

RETAIL
147m²

RETAIL
160m²

N1
TP2000

PN
TP2101

E2
TP2003

LANEWAY
1 628m²

AFTER HOURS SECURITY POINT.
GLAZED FOLD-UP DOOR

TOWER A LOBBY
94m²

MAIL

CONCIERGE

RETAIL LOBBY

CONCIERGE

3.6m CLEAR

MINI MAJOR
650m²

LIQUOR
997m²

TOWER B
LOBBY
154m²

MAIL

DDA

M

RAMP 1:14

HOIST

P.LIFT

P.LIFT

COMPACTOR

COMPACTOR

RES. COMPACTOR

RES. COMPACTOR

LIFTER

LIFTER

HOIST

14.5m - SUPERMARKET

14.5m - MINI MAJOR

HRV-LIQUOR

REFER TO TP1300 SERIES

REFER TO TP1200 SERIES

LOADING/BOH
2 028m²

SECURED LINE.
FOLD-UP DOOR

RETAIL WASTE

RETAIL
641m²

SUPERMARKET
TRADING FLOOR
2 696m²

SUPERMARKET
BOH
693m²

RETAIL
55m²

1 WATER TANK 35KL

RW PUMP
SERVICES
94m²

2.0m
HEAD
HEIGHT

RAMP 1:20

RAMP 1:20

RAMP 1:20

7 940

5 000

PL 51.96

1 800

1 500

1 800

7 970

21 437

6 150

4 620

12 175

6 799

12 005

RL 49.450

RL 50.413

RL 51.000

RL 50.950

FALL 7.21

FALL 1.17.8

FALL 1.16

SITE BOUNDARY 76.0m 155.90°

NGL 48.870

NGL 48.800

4 199

E1
TP2002

PE
TP2102

A
TP2500

3.7m
CLEAR

DIVISION OF ELECTRICITY EASEMENT

SITE BOUNDARY 44.0m 115.54°

GENERAL NOTE
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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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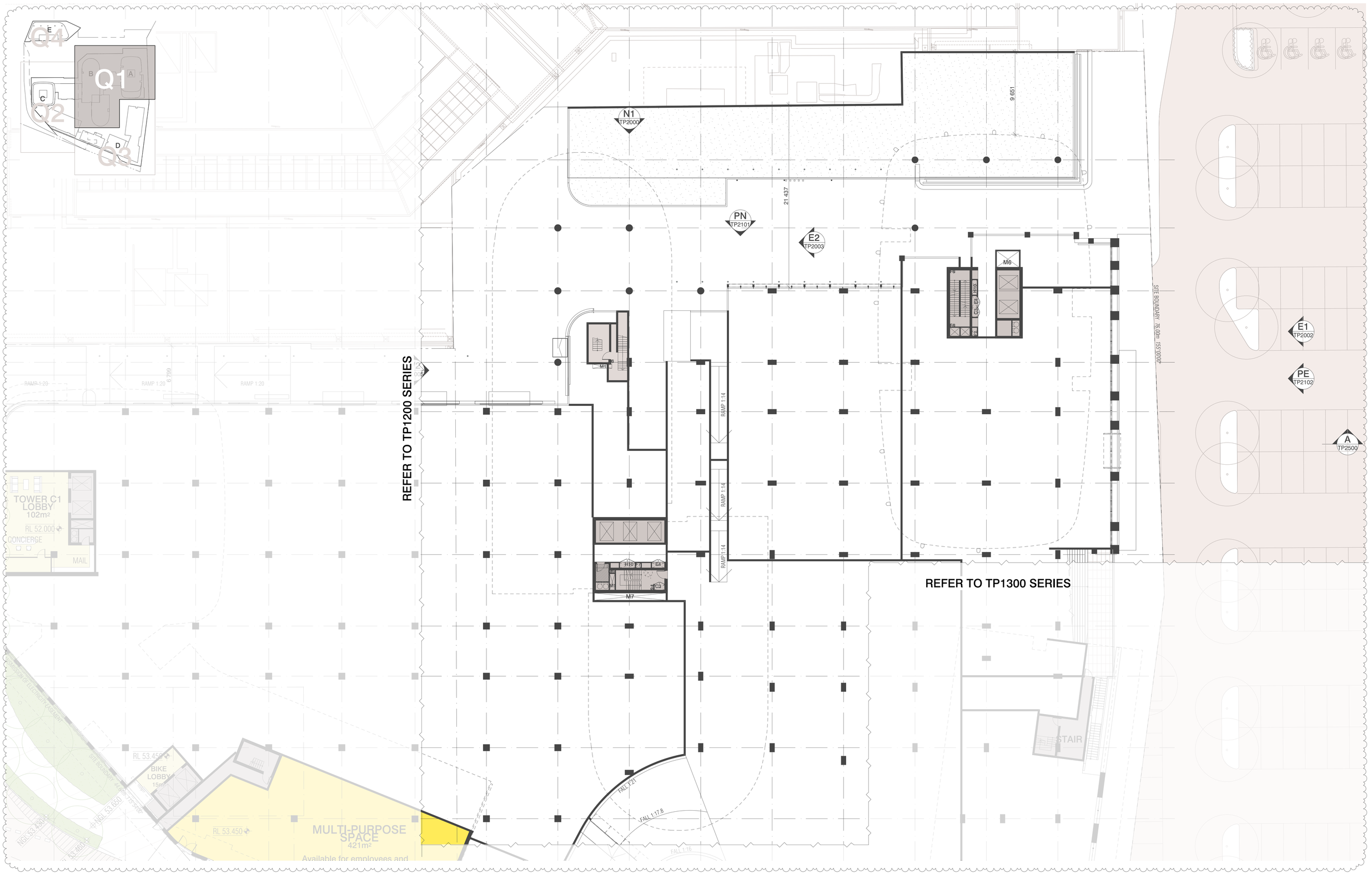
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LOWER GROUND FLOOR PLAN QUADRANT 1	VCAT AMENDED SCHEME	00	TP1100



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021	

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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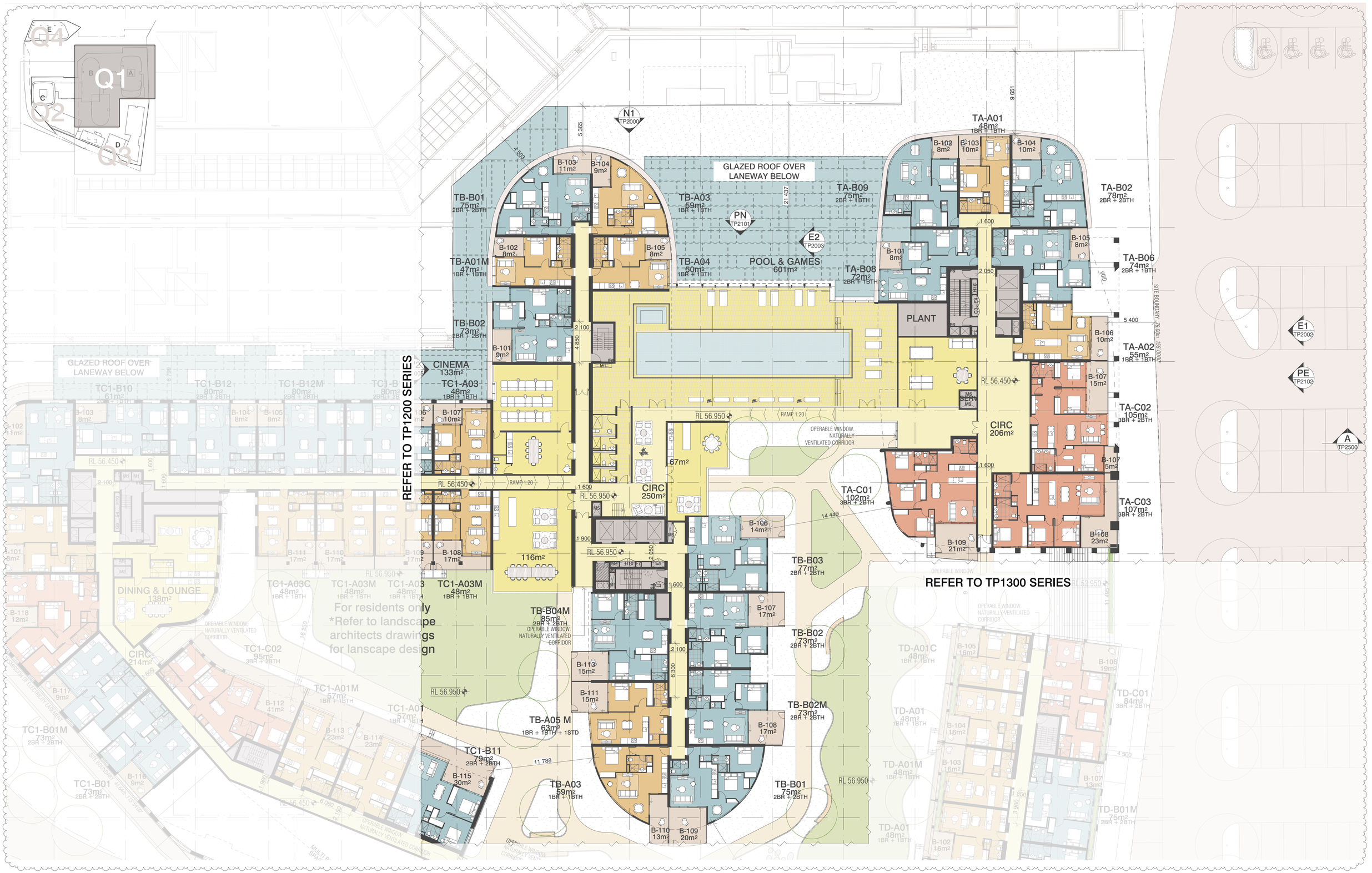
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE UPPER GROUND FLOOR PLAN QUADRANT 1

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. **TP1100A**



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 1 QUADRANT 1

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1101



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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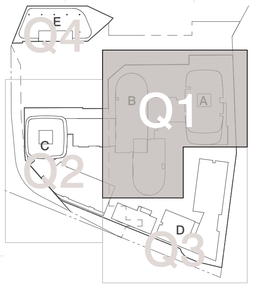
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 2 QUADRANT 1	VCAT AMENDED SCHEME	00	TP1102



N1 TP2000

PN TP2101

E2 TP2003

E1 TP2002

PE TP2102

A TP2500

REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

TB-B01 75m² 2BR + 2BTH

TB-A03 59m² 1BR + 1BTH

TB-A01M 47m² 1BR + 1BTH

TB-B02 73m² 2BR + 2BTH

TB-A02 62m² 1BR + 1BTH

TB-A05 62m² 2BR + 1BTH + 1STD

TB-A01 47m² 1BR + 1BTH

TB-B04 85m² 2BR + 2BTH

TB-B03 77m² 2BR + 2BTH

TB-B02M 73m² 2BR + 2BTH

TB-B01 75m² 2BR + 2BTH

TA-A01 48m² 1BR + 1BTH

TA-B09 75m² 2BR + 1BTH

TA-B02 78m² 2BR + 2BTH

TA-B08 72m² 2BR + 1BTH

TA-B06 74m² 2BR + 1BTH

TA-B07 73m² 2BR + 1BTH

TA-A02 55m² 1BR + 1BTH

TA-A04 61m² 1BR + 1BTH

TA-C02 105m² 3BR + 2BTH

TA-C01 102m² 3BR + 2BTH

TA-C03 107m² 3BR + 2BTH

CIRC 150m²

CIRC 143m² RL 63.150

RL 62.650

NATURALLY VENTILATED

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

SITE BOUNDARY 76.00m 155°00'00"

24 254

14 441

11 811

31 441

11 495

9 651

5 365

4 550

8 049

TC1-C04 115m² 3BR + 2BTH

TC1-A04M 48m² 1BR + 1BTH

TC1-B03 78m² 2BR + 2BTH

TC1-C02 95m² 3BR + 2BTH

TC1-A01M 57m² 1BR + 1BTH

TC1-A01 57m² 1BR + 1BTH

TC1-B11 79m² 2BR + 2BTH

TC1-B01M 73m² 2BR + 2BTH

TC1-B01 73m² 2BR + 2BTH

TC1-A06 64m² 1BR + 1BTH + 1STD

CIRC 130m²

TD-A01C 48m² 1BR + 1BTH

TD-C01 84m² 3BR + 2BTH

TD-A01 48m² 1BR + 1BTH

TD-A01M 48m² 1BR + 1BTH

TD-B01M 75m² 2BR + 2BTH

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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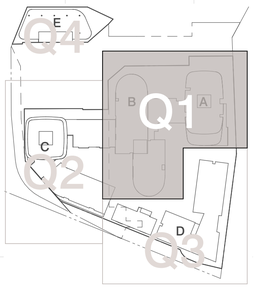
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 3 QUADRANT 1	VCAT AMENDED SCHEME	00	TP1103



REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

N1 TP2000
PN TP2101
E2 TP2003
E1 TP2002
PE TP2102
A TP2500

TB-B01 75m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B02 73m² 2BR + 2BTH
TB-A02 62m² 1BR + 1BTH
TB-A05 62m² 2BR + 1BTH + 1STD
TB-A01 47m² 1BR + 1BTH
TB-B04 85m² 2BR + 2BTH
TB-B03 77m² 2BR + 2BTH
TB-B02M 73m² 2BR + 2BTH
TB-B01 75m² 2BR + 2BTH

TA-A01 48m² 1BR + 1BTH
TA-B09 75m² 2BR + 1BTH
TA-B02 78m² 2BR + 2BTH
TA-B08 72m² 2BR + 1BTH
TA-B01M 74m² 2BR + 1BTH
TA-B07 73m² 2BR + 1BTH
TA-B01 74m² 2BR + 1BTH
TA-A03 67m² 1BR + 1BTH + 1STD
TA-B04 80m² 2BR + 2BTH
TA-B03 82m² 2BR + 2BTH
TA-B03M 82m² 2BR + 2BTH

CIRC 77m²
CIRC 143m²
DUCTED NATURAL VENTILATION TO CORRIDOR
OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR
SITE BOUNDARY 76.00m 155.900°
RL 65.750
RL 66.250

TC1-B07M 70m² 2BR + 1BTH
TC1-B06M 71m² 2BR + 2BTH
TC1-A04M 48m² 1BR + 1BTH
TC1-B03 83m² 2BR + 2BTH
TC1-C02 95m² 3BR + 2BTH
TC1-A01M 57m² 1BR + 1BTH
TC1-A01 57m² 1BR + 1BTH
TC1-B11 79m² 2BR + 2BTH
TC1-B01M 73m² 2BR + 2BTH
TC1-B01 73m² 2BR + 2BTH
TC1-A06 64m² 1BR + 1BTH + 1STD
144m²

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
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NORTHCOTE VIC 3070

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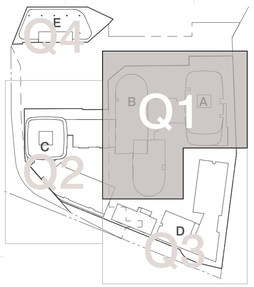
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 4 QUADRANT 1	VCAT AMENDED SCHEME	00	TP1104



REFER TO TP1200 SERIES

N1 TP2000

PN TP2101

E2 TP2003

E1 TP2002

PE TP2102

A TP2500

TB-B01 75m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B02 73m² 2BR + 2BTH
TB-A02 62m² 1BR + 1BTH
TB-A05 62m² 2BR + 1BTH + 1STD
TB-B04 85m² 2BR + 2BTH
TB-A01 47m² 1BR + 1BTH
TB-B03 77m² 2BR + 2BTH
TB-B02M 73m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-B01 75m² 2BR + 2BTH

B-507 11m² B-508 9m² B-506 8m² B-509 8m² B-505 9m² B-510 10m² B-504 9m² B-511 8m² B-503 9m² B-512 8m² B-502 9m² B-513 9m² B-501 8m² B-514 9m² B-520 9m² B-519 9m² B-518 8m² B-515 9m² B-517 9m² B-516 11m²

CIRC 143m² RL 69.350

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TA-A01 48m² 1BR + 1BTH
TA-B09 75m² 2BR + 1BTH
TA-B02 78m² 2BR + 2BTH
DUCTED NATURAL VENTILATION TO CORRIDOR
TA-B08 72m² 2BR + 1BTH
TA-B01M 74m² 2BR + 1BTH
TA-B07 73m² 2BR + 1BTH
TA-B01 74m² 2BR + 1BTH
TA-A03 67m² 1BR + 1BTH + 1STD
TA-B04 80m² 2BR + 2BTH
TA-B03 82m² 2BR + 2BTH
TA-B03M 82m² 2BR + 2BTH
TA-A01M 48m² 1BR + 1BTH

B-502 8m² B-503 10m² B-504 10m² B-501 8m² B-505 8m² B-512 8m² B-506 9m² B-511 8m² B-507 10m² B-508 8m² B-509 9m² B-508 8m²

CIRC 77m² RL 68.850

REFER TO TP1300 SERIES

SITE BOUNDARY 76.00m 155.900m²

TC1-B07M 70m² 2BR + 1BTH
TC1-B06M 71m² 2BR + 2BTH
TC1-A04M 48m² 1BR + 1BTH
TC1-B03 83m² 2BR + 2BTH
TC1-C02 95m² 3BR + 2BTH
TC1-A01M 57m² 1BR + 1BTH
TC1-A01 57m² 1BR + 1BTH
TC1-B11 79m² 2BR + 2BTH
TC1-B01M 73m² 2BR + 2BTH
TC1-B01 73m² 2BR + 2BTH
TC1-A06 64m² 1BR + 1BTH + 1STD

B-503 9m² B-504 9m² B-505 8m² B-506 8m² B-507 9m² B-518 19m² B-517 9m² B-508 12m² B-509 9m² B-510 9m² B-516 9m² B-515 9m² B-514 8m² B-511 11m²

RL 68.850

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

144m²

SITE BOUNDARY 46.80m 155.900m²

5 365
4 530
4 650
2 100
24 987
24 254
1 600
2 050
6 300
7 250
9 651
14 441
11 788
31 417
5 268
6 090

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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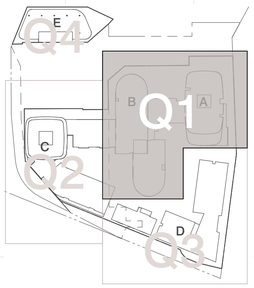
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 5-6 QUADRANT 1	VCAT AMENDED SCHEME	00	TP1105



REFER TO TP1200 SERIES

N1 TP2000

PN TP2101

E2 TP2003

E1 TP2002

PE TP2102

A TP2500

TB-B01 75m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B02 73m² 2BR + 2BTH
TB-A02 62m² 1BR + 1BTH
TB-A05 62m² 1BR + 1BTH + 1STD
TB-A01 47m² 1BR + 1BTH
TB-B04 85m² 2BR + 2BTH
TB-B03 77m² 2BR + 2BTH
TB-B02M 73m² 2BR + 2BTH
TB-B01 75m² 2BR + 2BTH

B-707 11m² B-708 9m² B-706 8m² B-709 8m² B-705 9m² B-710 10m² B-704 9m² B-711 8m² B-703 9m² B-712 8m² B-702 9m² B-713 9m² B-701 8m² B-714 9m² B-720 9m² B-719 9m² B-718 8m² B-715 9m² B-717 9m² B-716 11m²

CIRC 143m² RL 75.550

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TA-A01 48m² 1BR + 1BTH
TA-B09 75m² 2BR + 1BTH
TA-B02 78m² 2BR + 2BTH
DUCTED NATURAL VENTILATION TO CORRIDOR
CIRC 77m²
TA-B01M 74m² 2BR + 1BTH
TA-B08 72m² 2BR + 1BTH
TA-B07 73m² 2BR + 1BTH
TA-B01 74m² 2BR + 1BTH
TA-A03 67m² 1BR + 1BTH + 1STD
TA-B04 80m² 2BR + 2BTH
TA-B03 82m² 2BR + 2BTH
TA-B03M 82m² 2BR + 2BTH
TA-A01M 48m² 1BR + 1BTH

B-702 8m² B-703 10m² B-704 10m² B-705 8m² B-701 8m² B-712 8m² B-706 9m² B-711 8m² B-707 10m² B-708 8m² B-709 9m²

RL 75.050

REFER TO TP1300 SERIES

TC1-B07M 70m² 2BR + 1BTH
DUCTED NATURAL VENTILATION TO CORRIDOR
TC1-B06M 71m² 2BR + 2BTH
TC1-A04M 48m² 1BR + 1BTH
TC1-B09 71m² 2BR + 1BTH

B-703 9m² B-704 9m² B-705 8m² B-706 8m² B-707 8m² B-708 8m²

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TRANSMISSION VE ELECTRICITY EASEMENT

SITE BOUNDARY 76.0m 155°00'00"

SITE BOUNDARY 44.6m 115°34'00"

RL 75.250

24 254
31 441
14 450
9 651
7 250
5 365
4 530
5 268
4 650
2 100
1 600
6 300
2 050

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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TELEPHONE: +61 3 9696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

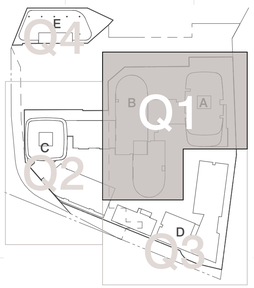
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE
LEVEL 7 QUADRANT 1

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1107



REFER TO TP1200 SERIES

N1 TP2000

PN TP2101

E2 TP2003

E1 TP2002

PE TP2102

A TP2500

TB-B01 75m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B02 73m² 2BR + 2BTH
TB-A02 62m² 1BR + 1BTH
TB-A05 62m² 2BR + 1BTH + 1STD
TB-A01 47m² 1BR + 1BTH
TB-B04 85m² 2BR + 2BTH
TB-B03 77m² 2BR + 2BTH
TB-A01 47m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B03 77m² 2BR + 2BTH
TB-A01 47m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-A01 47m² 1BR + 1BTH
TB-A03 59m² 1BR + 1BTH
TB-B01 75m² 2BR + 2BTH
TB-B02 73m² 2BR + 2BTH
TB-B02M 73m² 2BR + 2BTH
TB-B01 75m² 2BR + 2BTH

B-801 8m²
B-802 9m²
B-803 9m²
B-804 9m²
B-805 9m²
B-806 8m²
B-807 11m²
B-808 9m²
B-809 8m²
B-810 10m²
B-811 8m²
B-812 8m²
B-813 8m²
B-814 9m²
B-815 9m²
B-816 11m²
B-817 9m²
B-818 8m²
B-819 9m²
B-820 9m²

CIRC 143m² RL 78.650
RL 78.150
OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR
OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TA-A01 48m² 1BR + 1BTH
TA-B09 75m² 2BR + 1BTH
TA-B02 78m² 2BR + 2BTH
DUCTED NATURAL VENTILATION TO CORRIDOR
CIRC 77m²
TA-B08 72m² 2BR + 1BTH
TA-B01M 74m² 2BR + 1BTH
TA-B07 73m² 2BR + 1BTH
TA-B01 74m² 2BR + 1BTH
TA-B05 80m² 2BR + 2BTH
TA-B05M 80m² 2BR + 2BTH
TA-A01M 48m² 1BR + 1BTH

B-801 8m²
B-802 8m²
B-803 10m²
B-804 10m²
B-805 8m²
B-806 9m²
B-807 8m²
B-808 9m²
B-809 8m²
B-810 8m²

REFER TO TP1300 SERIES

TC1-B07M 70m² 2BR + 1BTH
DUCTED NATURAL VENTILATION TO CORRIDOR
TC1-B06M 71m² 2BR + 2BTH
TC1-A04M 48m² 1BR + 1BTH
TC1-B09 71m² 2BR + 1BTH
CIRC 57m²
RL 78.150
B-803 9m²
B-804 9m²
B-805 8m²
B-806 8m²
B-807 8m²
B-808 8m²
OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

SITE BOUNDARY 76.0m 155°00'00"
SITE BOUNDARY 44.40m 115°34'00"
TRANSMISSION OF ELECTRICITY EASEMENT

5 365
4 530
5 251
31 441
24 254
9 651
16 125
7 250
4 650
2 100
1 600
6 300
2 050
2 950

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

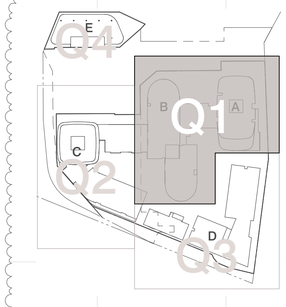
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

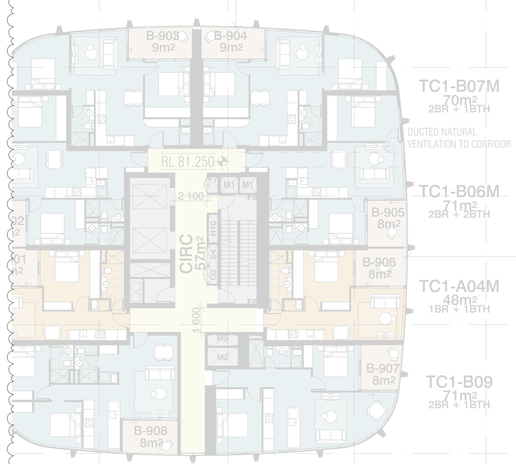
DRAWING TITLE
LEVEL 8 QUADRANT 1

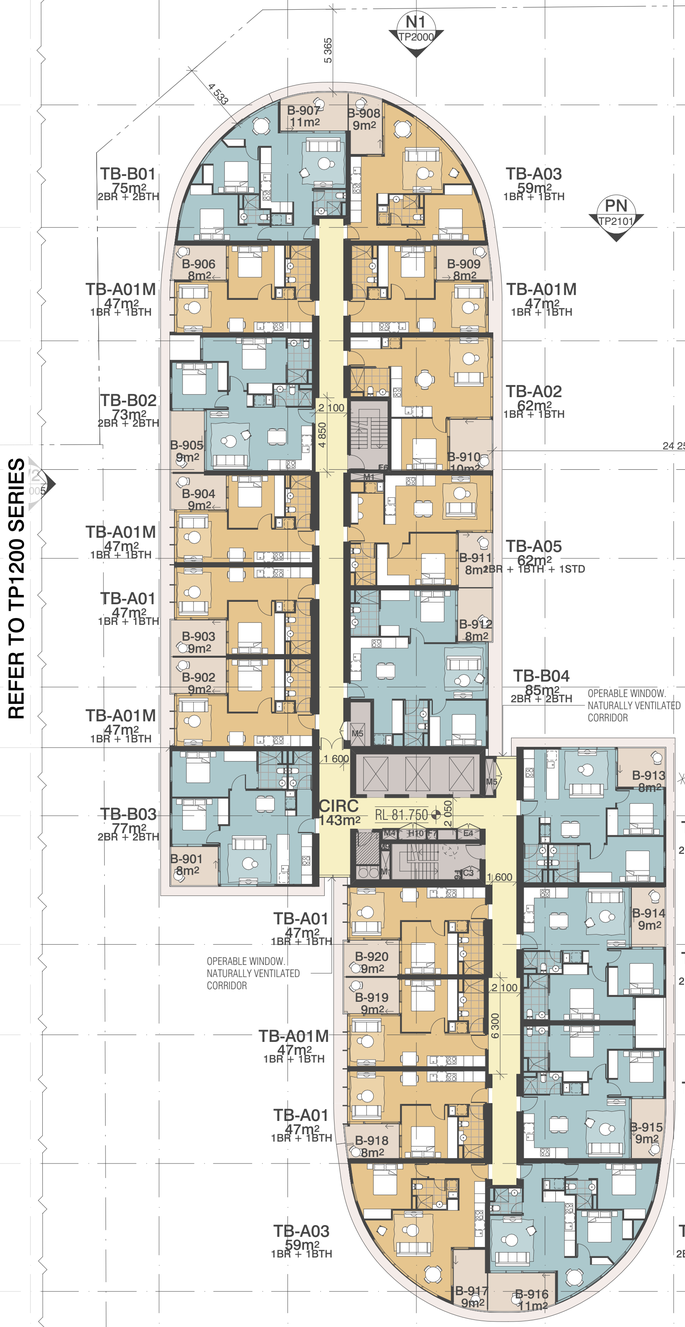
ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

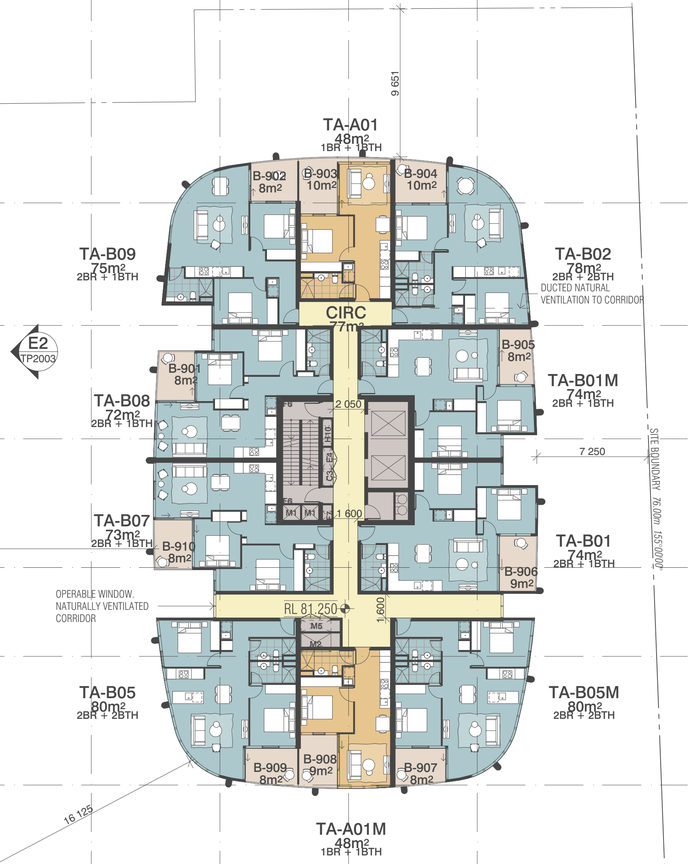
DRAWING NO.
TP1108

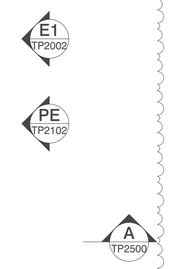






REFER TO TP1200 SERIES





REFER TO TP1300 SERIES

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REVISION

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

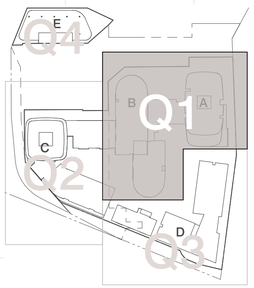
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

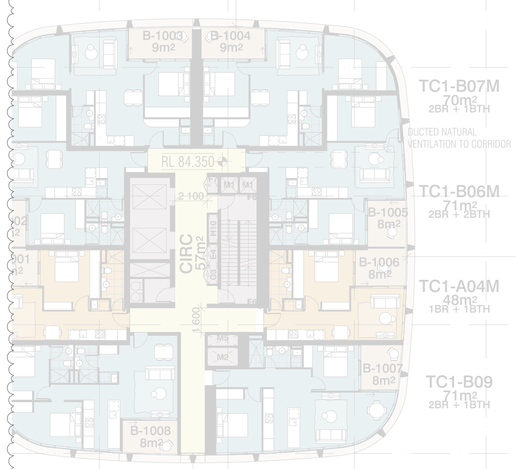
DRAWING TITLE
LEVEL 9 QUADRANT 1

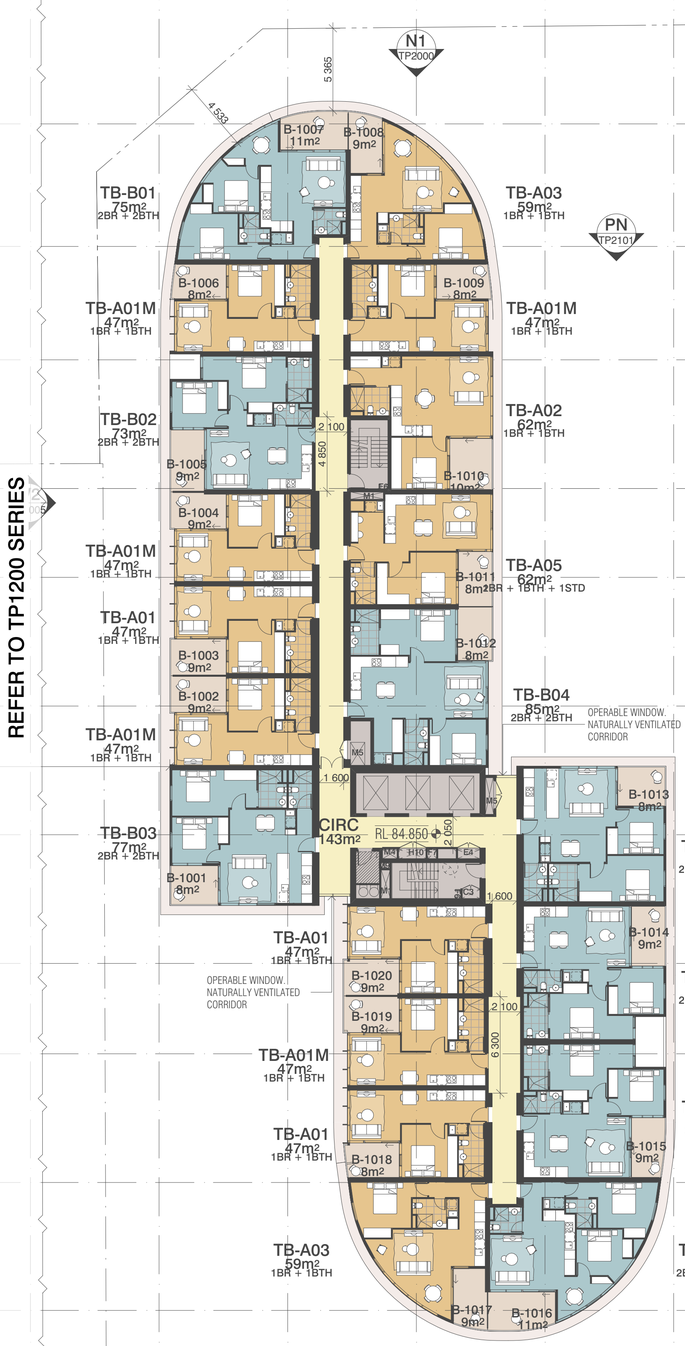
ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

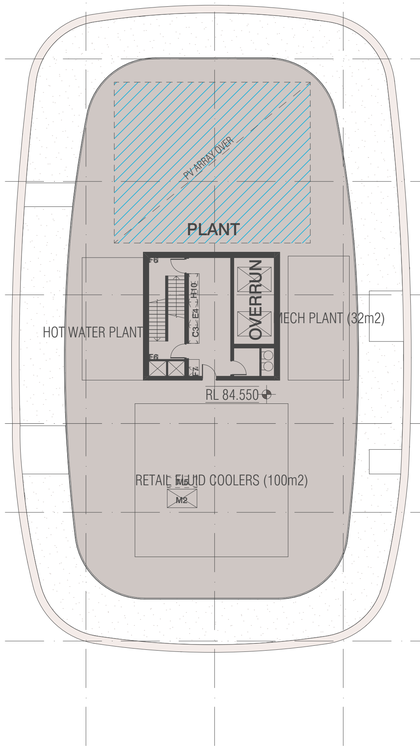
DRAWING NO.
TP1109

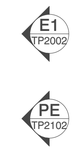






REFER TO TP1200 SERIES







SITE BOUNDARY 76.0m 153°00'00"

REFER TO TP1300 SERIES

SITE BOUNDARY 44.46m 115°34'00"

EASEMENT OF ELECTRICITY EASEMENT

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

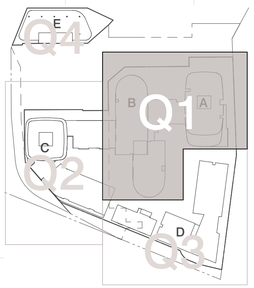
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

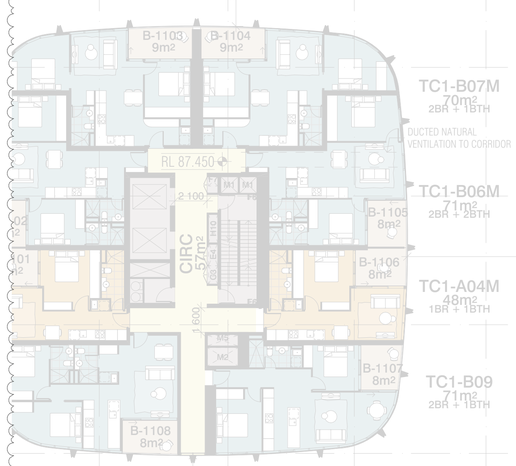
DRAWING TITLE LEVEL 10 QUADRANT 1

ISSUE PURPOSE VCAT AMENDED SCHEME

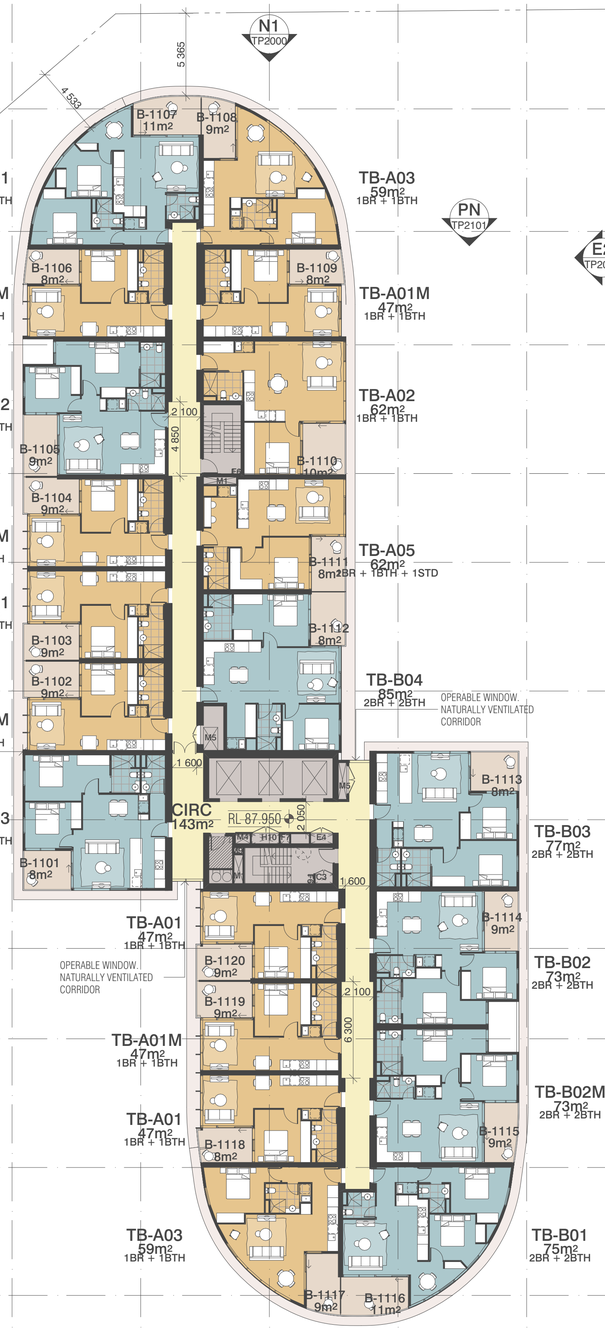
REV. 00

DRAWING NO. TP1110

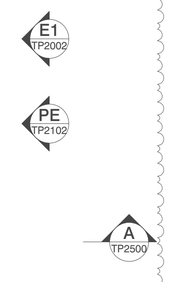




REFER TO TP1200 SERIES



REFER TO TP1300 SERIES



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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- [■] SCHEMATIC DESIGN REVIEW FOR THIS PROJECT IS COMPLETE. DATE OF REVIEW: 27.07.2021
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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE

LEVEL 11 QUADRANT 1

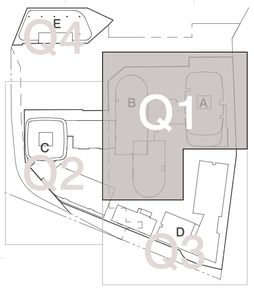
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP1111



N1 TP2000

PN TP2101

E2 TP2003

E1 TP2002

PE TP2102

A TP2500

REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

SITE BOUNDARY 76.00m 153°00'00"

SITE BOUNDARY 44.40m 115°34'00"

5 365

4 550

2 100

4 650

1 600

6 300

2 250

5 250

31 441

CIRC 143m²

RL 91.050

B-1207 11m²
B-1208 9m²
B-1206 8m²
B-1209 8m²
B-1205 9m²
B-1210 10m²
B-1204 9m²
B-1211 8m²
B-1212 8m²
B-1203 9m²
B-1202 9m²
B-1213 8m²
B-1201 8m²
B-1214 9m²
B-1220 9m²
B-1219 9m²
B-1215 9m²
B-1218 8m²
B-1217 9m²
B-1216 11m²

TB-B01 75m² 2BR + 2BTH
TB-A03 59m² 1BR + 1BTH
TB-A01M 47m² 1BR + 1BTH
TB-B02 73m² 2BR + 2BTH
TB-A02 62m² 1BR + 1BTH
TB-A05 62m² 2BR + 1BTH + 1STD
TB-A01 47m² 1BR + 1BTH
TB-B04 85m² 2BR + 2BTH
TB-B03 77m² 2BR + 2BTH
TB-B02M 73m² 2BR + 2BTH

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TC1-C06M 114m² 3BR + 2BTH
DUCTED NATURAL VENTILATION TO CORRIDOR

TC1-C07 95m² 3BR + 2BTH

B-1202 43m²
B-1203 43m²
B-1201 42m²
B-1204 42m²

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TRANSMISSION OF ELECTRICITY EASEMENT

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

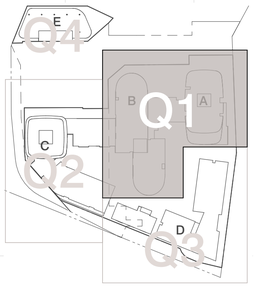
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

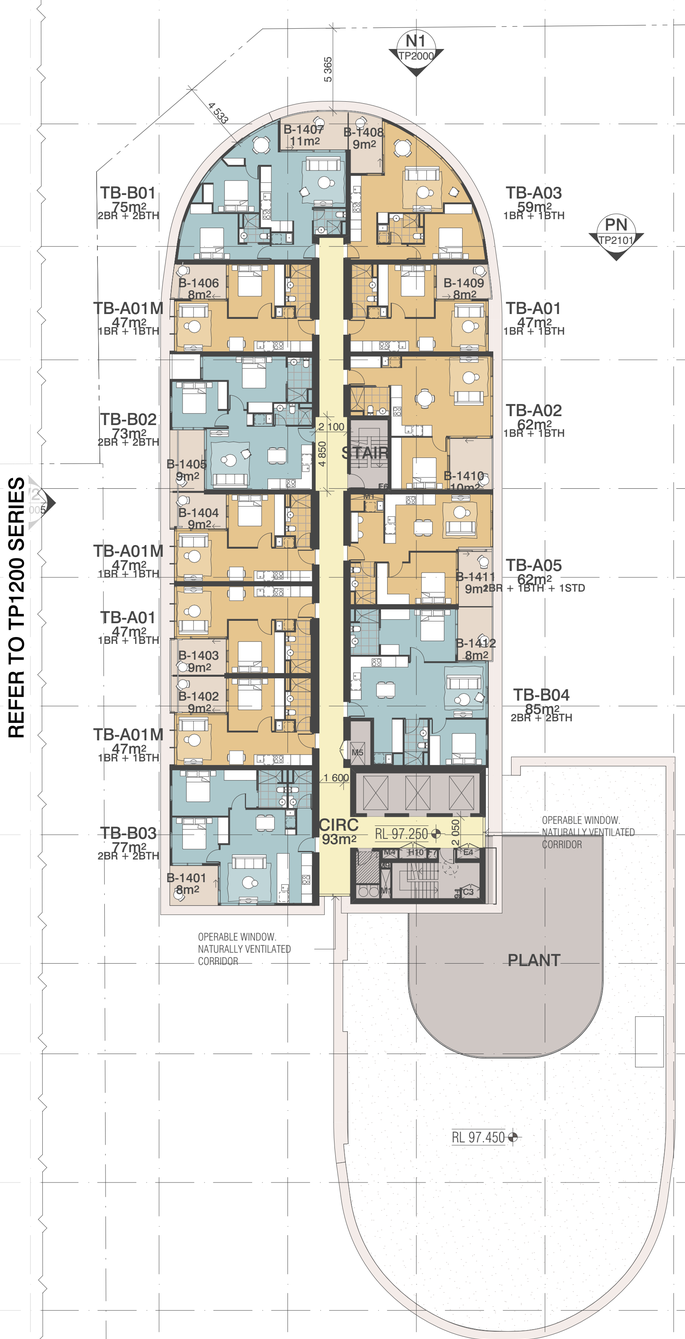
DRAWING TITLE LEVEL 12-13 QUADRANT 1

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1112





REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

SITE BOUNDARY 76.0m 153°00'00"

E1
TP2002

PE
TP2102

A
TP2500

COMMISSION OF ELECTRICITY EASEMENT

SITE BOUNDARY 44.46m 115°34'00"

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

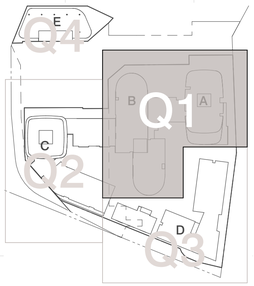
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

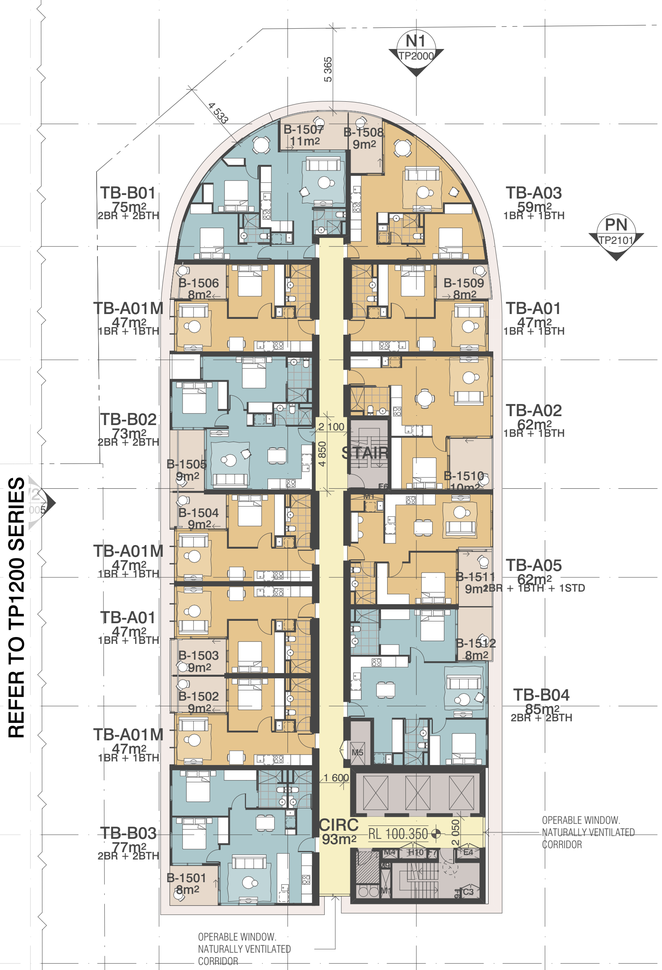
DRAWING TITLE LEVEL 14 QUADRANT 1

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1114





REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

E1
TP2002

PE
TP2102

A
TP2500

SITE BOUNDARY 76.00m 153°00'00"

SITE BOUNDARY 44.40m 115°34'00"

TRANSMISSION OF ELECTRICITY EASEMENT

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

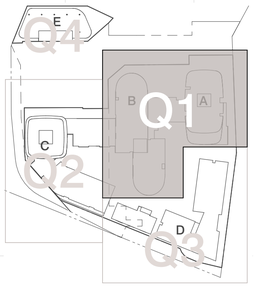
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE
LEVEL 15-17 QUADRANT 1

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1115



N1
TP2000

PN
TP2101

E2
TP2003

E1
TP2002

PE
TP2102

A
TP2500

RL 110.250

PLANT

OVERRUN
28m²

H01
H10
E4
M1
LG3

PLANT SILVER

REFER TO TP1200 SERIES

REFER TO TP1300 SERIES

SITE BOUNDARY 76.00m 153°00'00"

EASEMENT OF ELECTRICITY EASEMENT

SITE BOUNDARY 44.64m 115°24'00"

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021	

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE LEVEL 18 ROOF PLAN QUADRANT 1

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1118



GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

EV — ELECTRIC VEHICLE SPACE
PUB — CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
PUB - PUBLIC
COM - COMMERCIAL/OFFICE
RES - RESIDENTIAL
SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
RESIDENTIAL
VISITOR
RETAIL

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	15.09.2021	21045	1:200@A1

DRAWING TITLE BASEMENT 3 FLOOR PLAN QUADRANT 2

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1197

EASEMENT

W1
TP2004

PW
TP2103

STORAGE CAGES
161m²

M6

RL 42.850

TOWER C1
LOBBY
35m²

VANS/CARS
LOADING
26m²

WASTE
ROOM
30m²

BICYCLE PARKING
335m²

E.2 TRANSMISSION OF ELECTRICITY EASEMENT

SITE BOUNDARY 44.66m 115°54'00"

REFER TO TP1100 SERIES

STORAGE CAGES
101m²

RAMP 1:8

RAMP 1:5

RAMP 1:8

SITE BOUNDARY 34.26m 274°20'00"

S1
TP2006

REFER TO TP1300 SERIES

PN
TP2101

RETAIL
FOOT

STORAGE CAGES
141m²

BICYCLE PARKING
335m²

TOWER A LOBBY
28m²

WASTE
ROOM
25m²

VANS/CARS
LOADING
25m²

TOWER B LOBBY
18m²

CARPARK
9 980m²

WASTE
ROOM
29m²

TANDEM TANDEM

VANS/CARS
LOADING
25m²

VANS/CARS
LOADING
25m²

TOWER D
LOBBY
23m²

BICYCLE PA

WASTE

SITE BOUNDARY 74.63m 156°00'00"

16.028

Q1 Q2 Q3 Q4

A B C D E

GENERAL ARRANGEMENT (BASEMENT) LEGEND

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VISITOR
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25 SEPARATION STREET
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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 2 FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME	00	TP1198

SMKT CHILLERS & PLANT 115m²
FAN ROOM 25m²
M6
SFL 46.050
TANDEM
PUB / COM LOBBY 145m²
PUB / COM LOBBY 13m²
COMMERCIAL PARKING 31 CAR SPACES
CARPARK 9 900m²
FAN ROOM 32m²
M7
RAIN WATER TANK 35KL
RW PUMP
REFER TO TP1100 SERIES
REFER TO TP1300 SERIES
CLICK & COLLECT
SECURE LINE
LIFT
WATER METER ASSEMBLY
RAMP 1:5
RAMP 1:6
RAMP 1:10
RAMP 1:16
FIRE PUMPS
SPR. VALVE ROOM
DAS. ROOM
SITE BOUNDARY 76.40m 150°00'00"
SITE BOUNDARY 44.64m 115°54'00"
SITE BOUNDARY 34.58m 274°28'00"
EASEMENT
E-3 TRANSMISSION OF ELECTRICITY EASEMENT
W1 TP2004
PW TP2103
S1 TP2006
PN TP2101
Q1
Q2
Q3
Q4

GENERAL ARRANGEMENT (BASEMENT) LEGEND

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- ELECTRIC VEHICLE SPACE
- CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE BASEMENT 1 FLOOR PLAN QUADRANT 2

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1199

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.

EX STRATA RETAIL
579m²

RL 49.450

RL 50.413

RAMP 1:20

6.750

RAMP 1:20

RAMP 1:20

RL 49.450

W2
TP200

RETAIL
55m²

RL 51.000

NGL 51.000

W1
TP2004

PW
TP2103

M6

2.0m HEAD HEIGHT

RAIN WATER TANK 35KL

RW PUMP

SERVICES
94m²

EASEMENT

NGL 51.860

NGL 52.530

6.00m 151.2PAR

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

SUPERMARKET TRADING FLOOR
2 696m²

RL 49.450

SITE BOUNDARY 44.42m 115.5400

3.7m CLEAR

NGL 53.300

NGL 53.430

NGL 53.460

SUPERMARKET BOH
693m²

RL 49.450

SUPERMARKET PLANT
228m²

BUS SHELTER

NGL 53.360

SITE BOUNDARY 34.26m 214.2000

3.800

S1
TP2006

11.000

Q1 Q2 Q3 Q4
A B C D E

REFER TO TP1100 SERIES

LANEWAY
1 628m²

12.175

AFTER HOURS SECURITY POINT.
GLAZED FOLD-UP DOOR

PN
TP2101

E2
TP2003

21.450

RL 49.450

RETAIL LOBBY

CONCIERGE

3.6m CLEAR

RAMP 1:14

F

DDA

MAIL

TOWER B LOBBY
154m²

M

RAMP 1:14

RAMP 1:14

M7

HOIST

MINI MAJOR
650m²

TOWER A LOBBY
94m²

MAIL

M6

CONCIERGE

6.150

4.620

RL 49.450

Ø1.200 - 15.000CRS

SYD BROADWAY 79.00m - 15.000CRS

NGL 48.870

LIQUOR
997m²

RL 49.450

RL 49.450

NGL 48.800

P.LIFT

COMPACTOR

P.LIFT

COMPACTOR

HOIST

RES. COMPACTOR

RES. COMPACTOR

14.5m - SUPERMARKET

14.5m - MINI MAJOR

HOIST

LIFTER

LIFTER

RETAIL WASTE

LOADING/BOH
2 028m²

SECURED LINE.
FOLD-UP DOOR

RL 50.950

REFER TO TP1300 SERIES

RETAIL
641m²

4.199

RL 49.450

SITE BOUNDARY 82.00m 164.2000

NGL 49.000

RESIDENTIAL WASTE

RAIN WATER TANK 35KL

RW PUMP

TOWER C2 LOBBY
48m²

MAIL

GAS METER

SUBSTATION

SWITCHROOM

FIRE CONTROL

BASEMENT ENTRY
214m²

RAMP 1:14

RAMP 1:14

RAMP 1:14

FALL 1:21

FALL 1:17.8

FALL 1:17

FALL 1:25.7

FALL 1:20

FALL 1:16.5

FALL 1:17

FALL 1:17

FALL 1:17

GENERAL NOTE
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W1 TP2004

PW TP2103

W2 TP200

PN TP2101

E2 TP2003

S1 TP2006

TOWER C1 LOBBY 102m²

RL 52.000

CONCIERGE

MAIL

BIKE LOBBY 15m²

RL 53.450

MULTI-PURPOSE SPACE 421m²

Available for employees and residents, external use to be at discretion of Owner Corporation

RAMP 1:20

RAMP 1:20

RAMP 1:20

6799

RAMP 1:14

RAMP 1:14

RAMP 1:14

NGL 51.840

NGL 51.860

NGL 52.530

NGL 53.300

NGL 53.630

NGL 53.460

NGL 53.650

NGL 53.360

EASEMENT

6.00m 15°28'40"

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

SITE BOUNDARY 44.45m 175°40'00"

SITE BOUNDARY 44.26m 214°20'00"

BUS SHELTER CANOPY OVER

3.000

10 800

21 450

SITE BOUNDARY 49.40m 151°00'00"

SITE BOUNDARY 49.40m 151°00'00"

REFER TO TP1100 SERIES

REFER TO TP1300 SERIES

M1

M2

M3

M4

M5

M6

M7

STAIR

CIRC 65m²

FALL 1:21

FALL 1:17.8

FALL 1:17

FALL 1:17

FALL 1:20 (FALL 1:16.5)

FALL 1:25.7 (FALL 1:16.5)

FALL 1:20 (FALL 1:16.5)

Q1

Q2

Q3

Q4

A

B

C

D

E

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	UPPER GROUND FLOOR PLAN QUADRANT 2	VCAT AMENDED SCHEME	00	**TP1200A**

GLAZED ROOF OVER LANEWAY BELOW

TC1-B10 61m² 2BR + 2BTH
TC1-B12 80m² 2BR + 2BTH
TC1-B12M 80m² 2BR + 2BTH
TC1-B12 80m² 2BR + 2BTH
W2 TP2002
W1 TP2004
PW TP2103
TC1-B02 85m² 2BR + 2BTH
TC1-A02 64m² 1BR + 1BTH
TC1-C01 103m² 3BR + 2BTH
TC1-B01M 73m² 2BR + 2BTH
TC1-B01 73m² 2BR + 2BTH
TC1-A03C 48m² 1BR + 1BTH
TC1-A03M 48m² 1BR + 1BTH
TC1-A02 48m² 1BR + 1BTH
TC1-C02 95m² 3BR + 2BTH
TC1-A01M 57m² 1BR + 1BTH
TC1-A01 57m² 1BR + 1BTH
TC1-B11 79m² 2BR + 2BTH
TC2-B01 71m² 2BR + 2BTH
S1 TP2006

B-102 11m² · B-103 8m² · B-104 8m² · B-105 8m² · B-101 8m² · B-118 12m² · B-117 9m² · B-116 9m² · B-111 17m² · B-110 17m² · B-112 41m² · B-113 23m² · B-114 23m² · B-115 30m²

DINING & LOUNGE 138m²
CIRC 214m²
CIRC 206m²
CIRC 250m²
CIRC 36m²
CIRC 144m²
116m²
67m²

RL 56.450 · RL 56.950 · RL 57.550

OPERABLE WINDOW, NATURALLY VENTILATED CORRIDOR

For residents on
*Refer to landsca
architects drawin
for lanscape desi

REFER TO TP1100 SERIES

REFER TO TP1300 SERIES

MULTI PURPOSE SPACE BELOW

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

SITE BOUNDARY - 44.64m - 115.240°

SITE BOUNDARY - 37.68m - 274.240°

EASEMENT

TB-B01 75m² 2BR + 2BTH · TB-A03 59m² 1BR + 1BTH · TB-A01M 47m² 1BR + 1BTH · TB-B02 73m² 2BR + 2BTH · TB-A04 60m² 1BR + 1BTH · TB-B04M 85m² 2BR + 2BTH · TB-A05 M 63m² 1BR + 1BTH + 1STD · TB-B02M 73m² 2BR + 2BTH · TB-B03 77m² 2BR + 2BTH · TB-B01 75m² 2BR + 2BTH · TB-A03 59m² 1BR + 1BTH

POOL & GAMES 601m² · PLANT · CINEMA 133m²

PN TP2101 · E2 TP2003

TA-B08 72m² 2BR + 1BTH · TA-B02 78m² 2BR + 2BTH · TA-B06 74m² 2BR + 1BTH · TA-A02 55m² 1BR + 1BTH · TA-C02 105m² 3BR + 2BTH · TA-C01 102m² 3BR + 2BTH · TA-C03 107m² 3BR + 2BTH

TD-A01C 48m² 1BR + 1BTH · TD-A01M 48m² 1BR + 1BTH · TD-A01 48m² 1BR + 1BTH · TD-C01 84m² 3BR + 2BTH · TD-B01M 75m² 2BR + 2BTH · TD-B01 75m² 2BR + 2BTH · TD-A02 52m² 1BR + 1BTH

Q1 · Q2 · Q3 · Q4

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE LEVEL 1 QUADRANT 2

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP1201

EASEMENT

TC1-B10 61m² 2BR + 2BTH

TC1-B12 80m² 2BR + 2BTH

TC1-B12M 80m² 2BR + 2BTH

TC1-B12 80m² 2BR + 2BTH

W2 TP2004

LIBRARY 133m²

TC1-A03 48m² 1BR + 1BTH

B-202 11m²

B-203 8m²

B-204 8m²

B-205 8m²

B-207 10m²

RL 59.550

W1 TP2004

PW TP2103

TC1-B02 85m² 2BR + 2BTH

TC1-A02 64m² 1BR + 1BTH

B-201 8m²

CO-WORKING 157m²

B-211 8m²

B-210 8m²

B-208 8m²

TC1-A03C 48m² 1BR + 1BTH

TC1-A03M 48m² 1BR + 1BTH

TC1-A03 48m² 1BR + 1BTH

TC1-C01 103m² 3BR + 2BTH

B-222 12m²

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

CIRC 224m²

TC1-C02 94m² 3BR + 2BTH

B-221 9m²

B-212 12m²

TC1-A01M 57m² 1BR + 1BTH

TC1-A01 57m² 1BR + 1BTH

B-213 9m²

B-214 9m²

TC1-B11 79m² 2BR + 2BTH

B-215 11m²

TC1-B01M 73m² 2BR + 2BTH

TC1-B01 73m² 2BR + 2BTH

B-220 9m²

B-219 9m²

B-218 9m²

B-217 9m²

B-216 9m²

TC1-B04 71m² 2BR + 2BTH

TC1-B01 72m² 2BR + 2BTH

TC1-B01M 72m² 2BR + 2BTH

TC1-B01C 72m² 2BR + 2BTH

SITE BOUNDARY 34.68m 274°20'00"

S1 TP2006

TC2-B01 71m² 2BR + 2BTH

TC2-A01

REFER TO TP1100 SERIES

TB-B01 75m² 2BR + 2BTH

TB-A03 59m² 1BR + 1BTH

PN TP2101

E2 TP2003

TB-A01M 47m² 1BR + 1BTH

TB-A04 51m² 1BR + 1BTH

TB-B02 73m² 2BR + 2BTH

STORE

VOID BELOW

SERV

GYM 434m²

TA-B01 75m² 2BR + 1BTH

TA-B02 78m² 2BR + 2BTH

TA-B08 72m² 2BR + 1BTH

TA-B06 74m² 2BR + 1BTH

TA-A02 55m² 1BR + 1BTH

TA-C02 105m² 3BR + 2BTH

CIRC 195m²

TA-C01 102m² 3BR + 2BTH

TA-C03 107m² 3BR + 2BTH

RAMP 1:20

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

CIRC 231m²

TB-B03 77m² 2BR + 2BTH

TB-A01 47m² 1BR + 1BTH

TB-B02 73m² 2BR + 2BTH

TB-B02M 73m² 2BR + 2BTH

TB-A03 59m² 1BR + 1BTH

TB-B01 75m² 2BR + 2BTH

REFER TO TP1300 SERIES

TD-A01C 48m² 1BR + 1BTH

TD-A01M 48m² 1BR + 1BTH

TD-A01 48m² 1BR + 1BTH

TD-C01 84m² 3BR + 2BTH

TD-B01M 75m² 2BR + 2BTH

TD-B01 75m² 2BR + 2BTH

TD-A02 52m² 1BR + 1BTH

CIRC 144m²

CIRC 36m²

SITE BOUNDARY 82.00m 164°40'00"

Q1 Q2 Q3 Q4

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 2 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1202

EASEMENT

W1 TP2004

PW TP2103

TC1-C03 146m² 3BR + 2BTH

B-302 29m²

B-303 32m²

TC1-C04 115m² 3BR + 2BTH

8 049

W2 TP200

31 441

B-304 8m²

TC1-A04M 48m² 1BR + 1BTH

RL 62.650

B-305 9m²

TC1-B03 78m² 2BR + 2BTH

TC1-B05 80m² 2BR + 2BTH

B-301 15m²

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

CIRC 130m²

TC1-C02 95m² 3BR + 2BTH

B-315 9m²

TC1-A01M 57m² 1BR + 1BTH

B-306 12m²

TC1-B01M 73m² 2BR + 2BTH

B-307 9m²

B-308 9m²

TC1-A0? 57m² 1BR + 1BTH

TC1-B11 79m² 2BR + 2BTH

SITE BOUNDARY 44.64m 176°54'00"

B-314 9m²

B-309 11m²

TC1-B01 73m² 2BR + 2BTH

B-313 9m²

6 080

5 850

NATURALLY VENTILATED

TC1-A06 64m² 1BR + 1BTH + 1STD

B-312 8m²

TC1-A05 61m² 1BR + 1BTH + 1STD

B-311 8m²

TC1-A05M 61m² 1BR + 1BTH + 1STD

B-310 8m²

TC1-A05C 61m² 1BR + 1BTH + 1STD

SITE BOUNDARY 34.25m 274°20'00"

8 994

S1 TP2006

PLANT

RL 64.050

Q1 Q2 Q3 Q4

REFER TO TP1100 SERIES

TB-B01 75m² 2BR + 2BTH

TB-A03 59m² 1BR + 1BTH

PN TP2101

E2 TP2003

TB-A01M 47m² 1BR + 1BTH

TB-B02 73m² 2BR + 2BTH

TB-A02 62m² 1BR + 1BTH

TB-A01 47m² 1BR + 1BTH

TB-A05 62m² 2BR + 1BTH + 1STD

TB-B04 85m² 2BR + 2BTH

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

CIRC 143m²

RL 63.150

TB-B03 77m² 2BR + 2BTH

TB-B02M 73m² 2BR + 2BTH

TB-A03 59m² 1BR + 1BTH

TB-B01 75m² 2BR + 2BTH

REFER TO TP1300 SERIES

TA-B05 75m² 2BR + 1BTH

TA-B02 78m² 2BR + 2BTH

TA-B06 74m² 2BR + 1BTH

TA-B08 72m² 2BR + 1BTH

TA-B07 73m² 2BR + 1BTH

TA-A02 55m² 1BR + 1BTH

TA-A04 61m² 1BR + 1BTH

TA-C02 105m² 3BR + 2BTH

CIRC 150m²

TA-C01 102m² 3BR + 2BTH

TA-C03 107m² 3BR + 2BTH

OPERABLE WINDOW. NATURALLY VENTILATED CORRIDOR

TD-A01C 48m² 1BR + 1BTH

TD-C01 84m² 3BR + 2BTH

TD-A01 48m² 1BR + 1BTH

TD-A01M 48m² 1BR + 1BTH

TD-B01M 75m² 2BR + 2BTH

TD-B01 75m² 2BR + 2BTH

TD-A02 52m² 1BR + 1BTH

CIRC 144m²

SITE BOUNDARY 82.00m 164°30'00"

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 3 QUADRANT 2	VCAT AMENDED SCHEME	00	TP1203

EASEMENT

W2
TP200

W1
TP2004

PW
TP2103

TC1-B07
70m²
2BR + 2BTH

TC1-B07M
70m²
2BR + 1BTH

TC1-B06
71m²
2BR + 2BTH

TC1-B06M
71m²
2BR + 2BTH

TC1-A04
48m²
1BR + 1BTH

TC1-A04M
48m²
1BR + 1BTH

TC1-C05
100m²
3BR + 2BTH

TC1-C02
95m²
3BR + 2BTH

TC1-A01M
57m²
1BR + 1BTH

TC1-A07
57m²
1BR + 1BTH

TC1-B11
79m²
2BR + 2BTH

TC1-B01M
73m²
2BR + 2BTH

TC1-B01
73m²
2BR + 2BTH

TC1-A06
64m²
1BR + 1BTH + 1STD

TC1-A05
61m²
1BR + 1BTH + 1STD

TC1-A05M
61m²
1BR + 1BTH + 1STD

TC1-A05C
61m²
1BR + 1BTH + 1STD

B-403 9m² · B-404 9m² · B-402 8m² · B-401 8m² · B-405 8m² · B-406 8m² · B-407 9m² · B-418 19m² · B-417 9m² · B-408 12m² · B-409 9m² · B-410 9m² · B-411 11m² · B-416 9m² · B-415 9m² · B-414 8m² · B-413 8m² · B-412 8m²

RL 65.750 · RL 66.250

5 882 · 31 480 · 2 100 · 1 600 · 1 600 · 6 080 · 8 994

OPERABLE WINDOW.
NATURALLY VENTILATED
CORRIDOR

E-2 TRANSMISSION OF ELECTRICITY EASEMENT 8.00m 151°28'00"E

SITE BOUNDARY 44.66m 115°54'00"

SITE BOUNDARY 34.26m 274°28'00"

REFER TO TP1100 SERIES

TB-B01 75m² 2BR + 2BTH · TB-A03 59m² 1BR + 1BTH · TB-A01M 47m² 1BR + 1BTH · TB-B02 73m² 2BR + 2BTH · TB-A02 62m² 1BR + 1BTH · TB-A05 62m² 2BR + 1BTH + 1STD · TB-B04 85m² 2BR + 2BTH · TB-B03 77m² 2BR + 2BTH · TB-A01 47m² 1BR + 1BTH · TB-B02M 73m² 2BR + 2BTH · TB-A07 57m² 1BR + 1BTH · TB-B11 79m² 2BR + 2BTH · TB-B01 75m² 2BR + 2BTH · TB-A03 59m² 1BR + 1BTH

PN
TP2101

E2
TP2003

CIRC 143m² · RL 66.250 · 24 254 · 2 100 · 6 800 · 1 600 · 1 600 · 1 600

OPERABLE WINDOW.
NATURALLY VENTILATED
CORRIDOR

TA-B02 78m² 2BR + 2BTH DUCTED NATURAL VENTILATION TO CORRIDOR · TA-B01 75m² 2BR + 1BTH · TA-B01M 74m² 2BR + 1BTH · TA-B08 72m² 2BR + 1BTH · TA-B07 73m² 2BR + 1BTH · TA-B01 74m² 2BR + 1BTH · TA-A03 67m² 1BR + 1BTH + 1STD · TA-B04 80m² 2BR + 2BTH · TA-B03 82m² 2BR + 2BTH · TA-B03M 82m² 2BR + 2BTH · TA-A01M 48m² 1BR + 1BTH

CIRC 77m² · RL 65.750 · 2 050 · 7 250 · 1 600 · 1 600 · 14 441

B-401 8m² · B-405 8m² · B-406 8m² · B-407 10m² · B-412 8m² · B-411 8m² · B-408 8m² · B-409 9m²

SITE BOUNDARY 82.00m 164°30'00"

REFER TO TP1300 SERIES

PLANT

Q1 · Q2 · Q3 · Q4 · A · B · C · D · E

S1
TP2006

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 4 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1204

EASEMENT

W1 TP2004

PW TP2103

W2 TP200

PN TP2101

E2 TP2003

S1 TP2006

TC1-B07 70m² 2BR + 1BTH

TC1-B07M 70m² 2BR + 1BTH

TC1-B06 71m² 2BR + 2BTH

TC1-B06M 71m² 2BR + 2BTH

TC1-A04 48m² 1BR + 1BTH

TC1-A04M 48m² 1BR + 1BTH

TC1-C05 100m² 3BR + 2BTH

TC1-C02 95m² 3BR + 2BTH

TC1-B03 83m² 2BR + 2BTH

TC1-B01M 73m² 2BR + 2BTH

TC1-A01M 57m² 1BR + 1BTH

TC1-A07 57m² 1BR + 1BTH

TC1-B11 79m² 2BR + 2BTH

TC1-B01 73m² 2BR + 2BTH

TC1-A06 64m² 1BR + 1BTH + 1STD

TC1-A05 61m² 1BR + 1BTH + 1STD

TC1-A05M 61m² 1BR + 1BTH + 1STD

TC1-A05C 61m² 1BR + 1BTH + 1STD

B-503 9m² · B-504 9m² · B-502 8m² · B-501 8m² · B-506 8m² · B-505 8m² · B-507 9m² · B-518 19m² · B-517 9m² · B-508 12m² · B-509 9m² · B-510 9m² · B-515 9m² · B-516 9m² · B-514 8m² · B-513 8m² · B-512 8m²

RL 68.850

2 100 · 1 600 · 6 080 · 31 417 · 5 882

144m²

OPERABLE WINDOW.. NATURALLY VENTILATED CORRIDOR

SITE BOUNDARY 40.68m 151°54'40"

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

SITE BOUNDARY 34.58m 274°28'00"

8 994

REFER TO TP1100 SERIES

TB-B01 75m² 2BR + 2BTH · TB-A03 59m² 1BR + 1BTH · TB-A01M 47m² 1BR + 1BTH · TB-B02 73m² 2BR + 2BTH · TB-A02 62m² 1BR + 1BTH · TB-A05 62m² 2BR + 1BTH + 1STD · TB-B04 85m² 2BR + 2BTH · TB-A01 47m² 1BR + 1BTH · TB-B03 77m² 2BR + 2BTH · TB-B02M 73m² 2BR + 2BTH

B-506 8m² · B-509 8m² · B-505 9m² · B-504 9m² · B-502 9m² · B-503 9m² · B-501 8m² · B-512 8m² · B-511 8m² · B-513 8m² · B-514 9m² · B-520 9m² · B-519 9m² · B-518 8m² · B-515 9m² · B-517 9m² · B-516 11m²

CIRC 143m² RL 69.350

24 987 · 24 254 · 14 441 · 11 788 · 2 100 · 6 300 · 1 600 · 2 850 · 4 850

OPERABLE WINDOW.. NATURALLY VENTILATED CORRIDOR

TA-B02 78m² 2BR + 2BTH DUCTED NATURAL VENTILATION TO CORRIDOR · TA-B01M 74m² 2BR + 1BTH · TA-B08 72m² 2BR + 1BTH · TA-B07 73m² 2BR + 1BTH · TA-B01 74m² 2BR + 1BTH · TA-A03 67m² 1BR + 1BTH + 1STD · TA-B04 80m² 2BR + 2BTH · TA-B03 82m² 2BR + 2BTH · TA-B03M 82m² 2BR + 2BTH · TA-A01M 48m² 1BR + 1BTH

B-501 8m² · B-505 8m² · B-506 9m² · B-512 8m² · B-511 8m² · B-507 10m² · B-509 9m² · B-508 8m²

CIRC 77m² RL 68.850

7 250 · 2 050 · 1 600

OPERABLE WINDOW.. NATURALLY VENTILATED CORRIDOR

SITE BOUNDARY 82.00m 164°30'00"

REFER TO TP1300 SERIES

Q1 · Q2 · Q3 · Q4 · A · B · C · D · E

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 5-6 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1205



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021	

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PROJECT
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25 SEPARATION STREET
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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 7 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1207



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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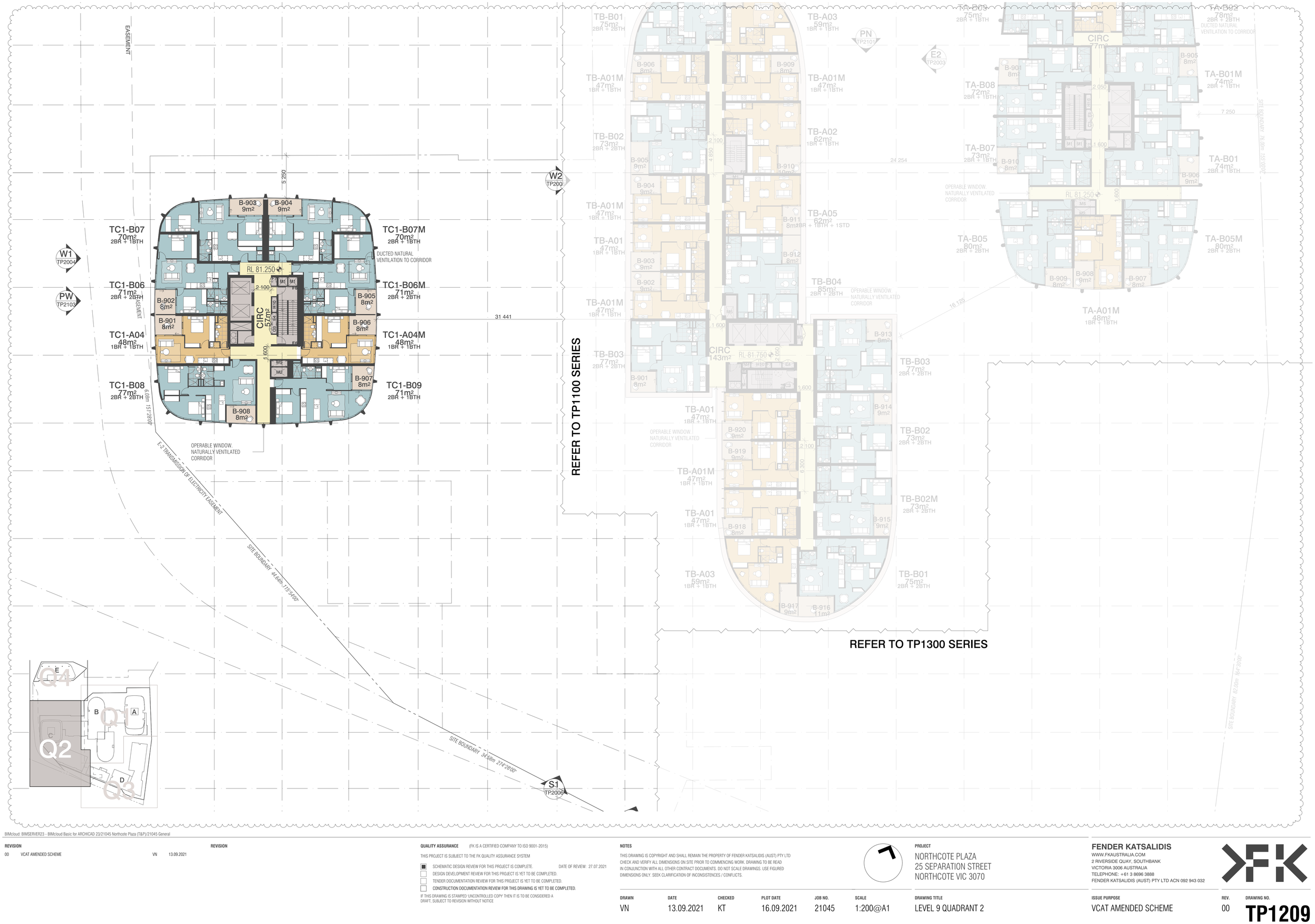
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 8 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	**TP1208**



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
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25 SEPARATION STREET
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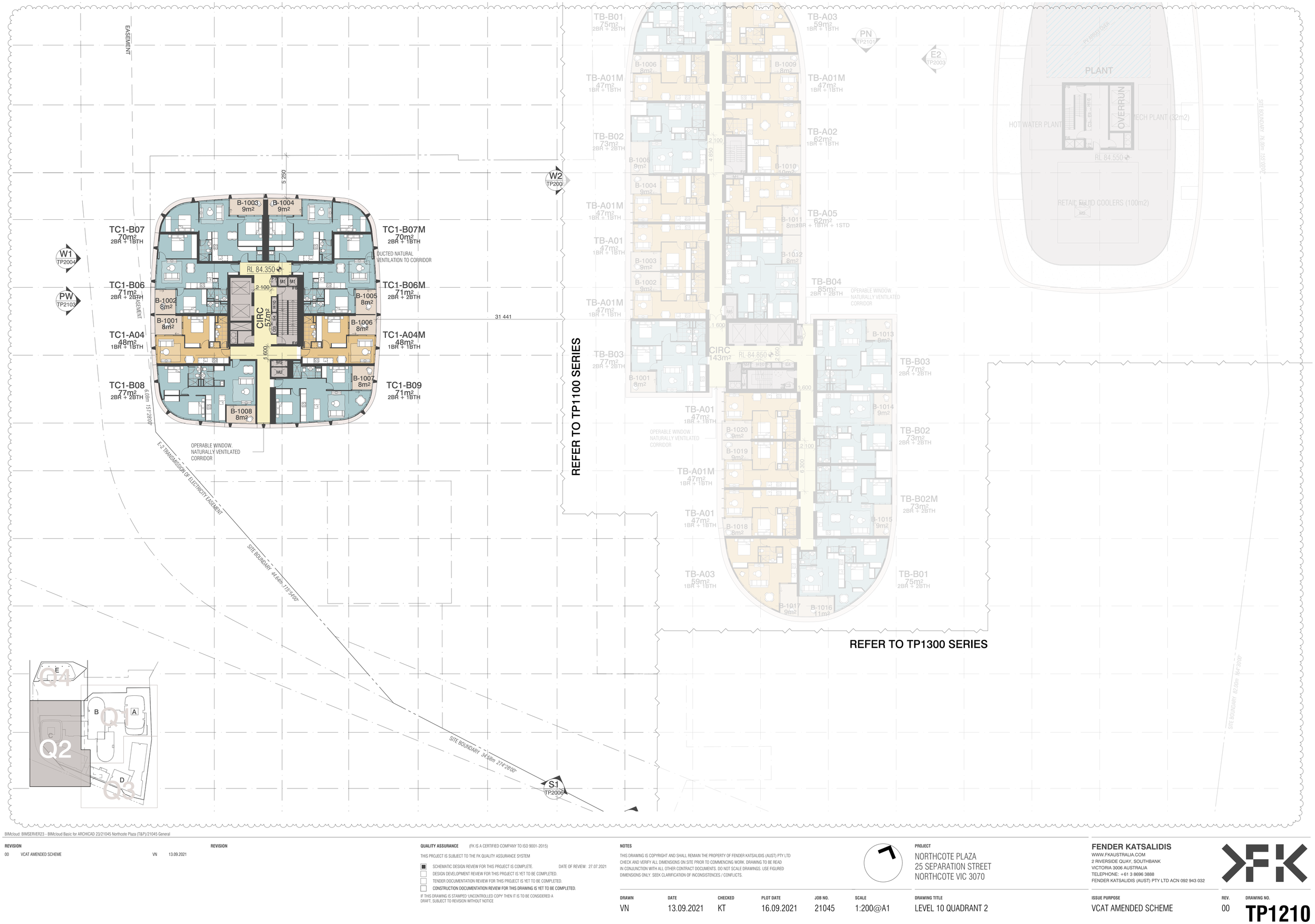
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 9 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	**TP1209**



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 10 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1210



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 11 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1211

EASEMENT

EASEMENT

5 250

W2
TP200

W1
TP2004

PW
TP2103

TC1-C06
114m²
3BR + 2BTH

TC1-C06M
114m²
3BR + 2BTH

DUCTED NATURAL VENTILATION TO CORRIDOR

B-1202
43m²

B-1203
43m²

2 100

CIRC
53m²

1 600

31 441

TC1-C08
100m²
3BR + 2BTH

TC1-C07
95m²
3BR + 2BTH

B-1201
42m²

B-1204
42m²

6.09m 151°28'00"

E-2 TRANSMISSION OF ELECTRICITY EASEMENT

OPERABLE WINDOW.
NATURALLY VENTILATED
CORRIDOR

SITE BOUNDARY 44.84m 115°54'00"

SITE BOUNDARY 34.56m 274°28'00"

S1
TP2006

REFER TO TP1100 SERIES

TB-B01
75m²
2BR + 2BTH

TB-A03
59m²
1BR + 1BTH

PN
TP2101

E2
TP2003

B-1206
8m²

B-1209
8m²

TB-A01M
47m²
1BR + 1BTH

TB-A01M
47m²
1BR + 1BTH

TB-B02
73m²
2BR + 2BTH

TB-A02
62m²
1BR + 1BTH

B-1208
9m²

B-1210
10m²

B-1204
9m²

TB-A01M
47m²
1BR + 1BTH

TB-A05
62m²
2BR + 1BTH + 1STD

B-1211
8m²

TB-A01
47m²
1BR + 1BTH

B-1212
8m²

B-1203
9m²

B-1202
9m²

TB-B04
85m²
2BR + 2BTH

OPERABLE WINDOW.
NATURALLY VENTILATED
CORRIDOR

TB-A01M
47m²
1BR + 1BTH

1 600

B-1213
8m²

TB-B03
77m²
2BR + 2BTH

TB-B03
77m²
2BR + 2BTH

CIRC
143m²

RL 91.050

B-1201
8m²

TB-A01
47m²
1BR + 1BTH

B-1214
9m²

OPERABLE WINDOW.
NATURALLY VENTILATED
CORRIDOR

B-1220
9m²

TB-B02
73m²
2BR + 2BTH

B-1219
9m²

2 100

6 300

TB-A01M
47m²
1BR + 1BTH

TB-B02M
73m²
2BR + 2BTH

TB-A01
47m²
1BR + 1BTH

B-1215
9m²

B-1218
8m²

TB-A03
59m²
1BR + 1BTH

TB-B01
75m²
2BR + 2BTH

B-1217
9m²

B-1216
11m²

REFER TO TP1300 SERIES

SITE BOUNDARY 152.40m 164°30'00"

Q4 Q1 Q2 Q3

A B C D E

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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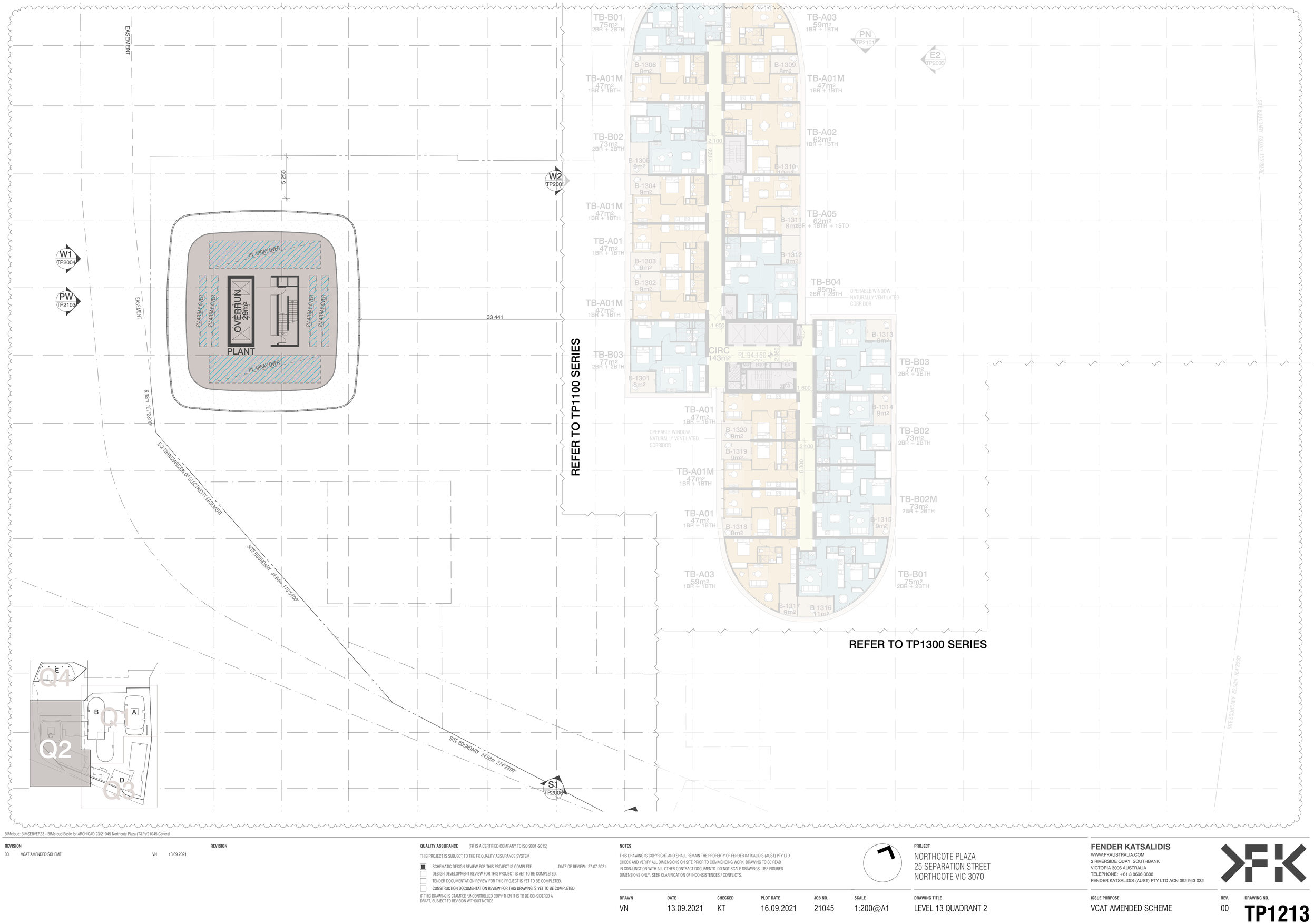
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 12 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1212



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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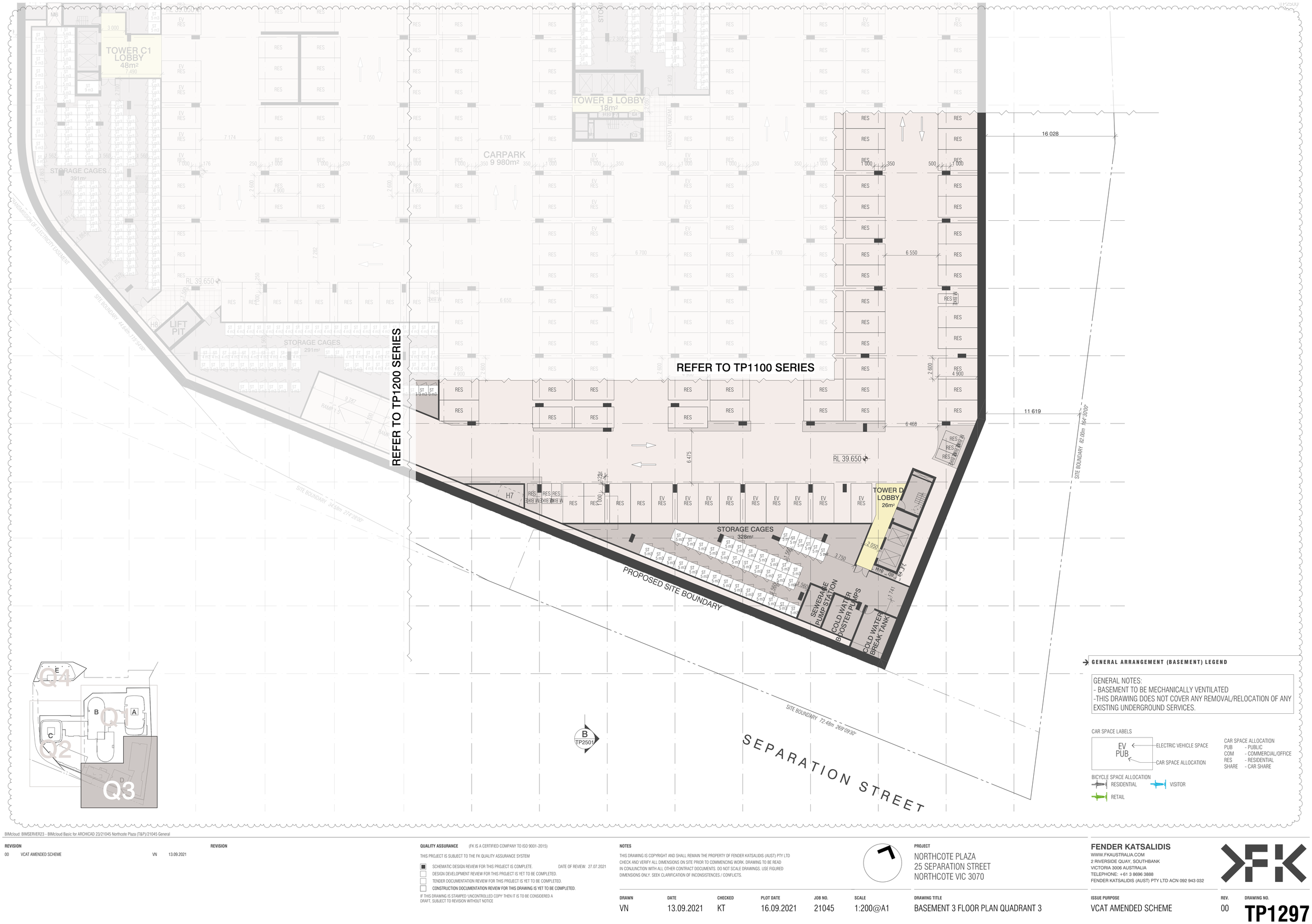
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 13 QUADRANT 2

ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1213



GENERAL ARRANGEMENT (BASEMENT) LEGEND

GENERAL NOTES:
- BASEMENT TO BE MECHANICALLY VENTILATED
-THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXISTING UNDERGROUND SERVICES.

CAR SPACE LABELS

EV PUB
- ELECTRIC VEHICLE SPACE
- CAR SPACE ALLOCATION

CAR SPACE ALLOCATION
PUB - PUBLIC
COM - COMMERCIAL/OFFICE
RES - RESIDENTIAL
SHARE - CAR SHARE

BICYCLE SPACE ALLOCATION
- RESIDENTIAL
- VISITOR
- RETAIL

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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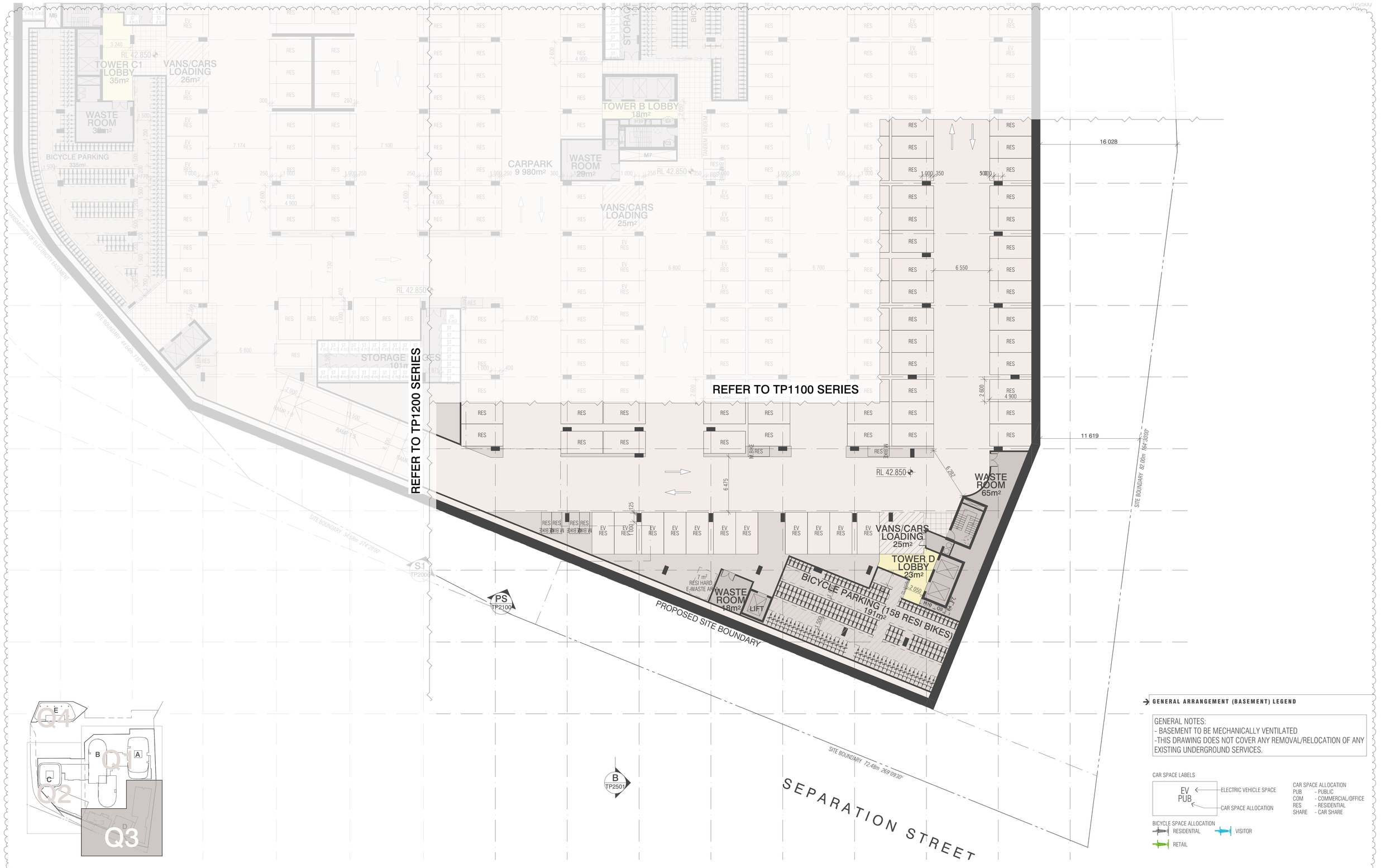
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 3 FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME	00	TP1297



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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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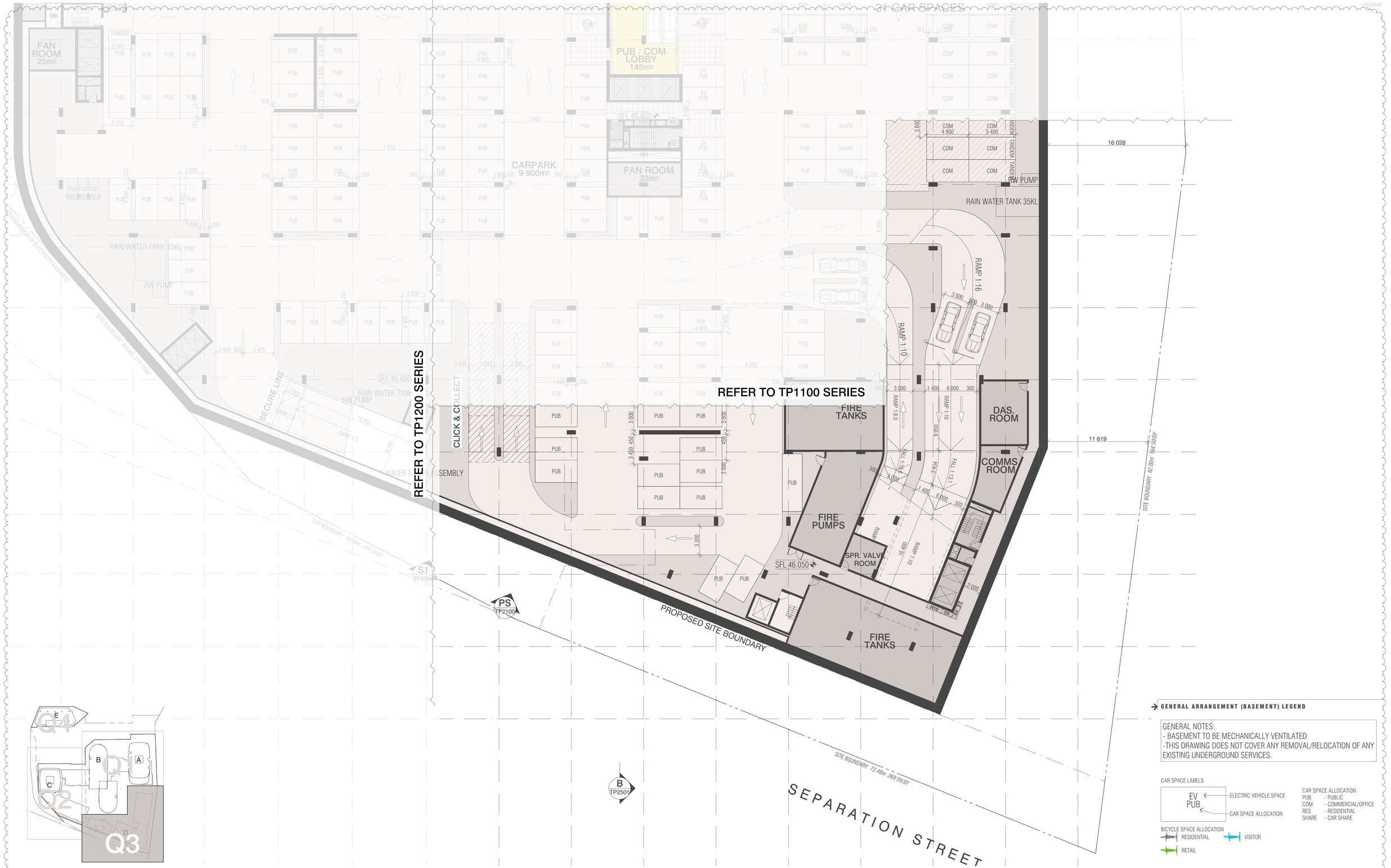
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	BASEMENT 2 FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME	00	TP1298



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VISITOR
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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1

DRAWING TITLE
BASEMENT 1 FLOOR PLAN QUADRANT 3

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP1299

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.

SUPERMARKET TRADING FLOOR 2 696m²
SUPERMARKET BOH 293m²
LOADING/BOH 2 028m²
SECURED LINE, FOLD-UP DOOR
SUPERMARKET PLANT 228m²
RESIDENTIAL WASTE
TOWER C2 LOBBY 48m²
GAS METER
SUBSTATION
FIRE BOOSTER
DISPLAY WINDOW
SWITCHROOM
FIRE CONTROL
BASEMENT ENTRY 214m²
TOWER B LOBBY 154m²
TOWER D LOBBY 166m²
RETAIL 641m²
RETAIL WASTE
MAIL
DDA
M
RAMP 1:14
HOIST
P.LIFT
COMPACTOR
RES. COMPACTOR
LIFTER
14.5m - SUPERMARKET
14.5m - MINI MAJOR
HRL LIQUOR
MACL.
RAIN WATER TANK 35KL
RW PUMP
SERVICES 94m²
UN WATER TANK 35KL
BUS SHELTER
REFER TO TP1100 SERIES
REFER TO TP1200 SERIES
PROPOSED SITE BOUNDARY
SEPARATION STREET
SITE BOUNDARY 72.48m 269°09'30"
SITE BOUNDARY 82.00m 164°30'00"
SITE BOUNDARY 44.40m 115°30'00"
SITE BOUNDARY 44.40m 295°30'00"
RL 49.450
NGL 48.800
NGL 49.000
NGL 49.200
NGL 52.310
NGL 51.550
NGL 50.900
NGL 50.970
NGL 50.580
NGL 50.400
NGL 50.420
NGL 50.380
NGL 49.760
NGL 53.430
NGL 53.460
NGL 53.360
11 000
4 199
3.7m CLEAR
PS TP2100
S1 TP2000
B TP2501
Q1 Q2 Q3 Q4

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LOWER GROUND FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME	00	TP1300

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.

TOWER C1 LOBBY 102m²
RL 52.000
CONCIERGE
MAIL

RAMP 1:14
RAMP 1:14
H10
M7

BIKE LOBBY 15m²
RL 53.450
NGL 53.650
NGL 53.430
NGL 53.460
SITE BOUNDARY 14.48m 270°00'00"

MULTI-PURPOSE SPACE 421m²
Available for employees and residents, external use to be discretion of Owner Corporation

BUS SHELTER
CANOPY OVER
3.000
NGL 53.380
SITE BOUNDARY 14.48m 270°00'00"

REFER TO TP1200 SERIES

REFER TO TP1100 SERIES

FALL 1:16
FALL 1:17
FALL 1:17.8
FALL 1:25.7
FALL 1:16.5
FALL 1:20
FALL 1:18.5
FALL 1:36
FALL 1:18.3
FALL 1:24

10 800

S1
TP2001

PS
TP2100

PROPOSED SITE BOUNDARY

NGL 52.310
NGL 51.550
NGL 50.970

B-GRO03 13m²
B-GRO02 13m²
B-GRO01 12m²
TD-B01 75m² 2BR + 2BTH
TD-B01M 75m² 2BR + 2BTH
TD-B02 72m² 2BR + 2BTH

11 000

NGL 50.420
NGL 50.580
NGL 50.380
SITE BOUNDARY 72.48m 269°09'30"

B
TP2501

SEPARATION STREET

NGL 49.760

CANOPY OVER FOOTPATH

STAIR
CIRC 65m²
RL 53.450
RTO = G2
2.200
STAIRS
1.600
2.200

SITE BOUNDARY 82.00m 164°30'00"

Q4
Q1
Q2
Q3
A
B
C
D
E

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	UPPER GROUND FLOOR PLAN QUADRANT 3	VCAT AMENDED SCHEME	00	**TP1300A**



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REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 1 QUADRANT 3	VCAT AMENDED SCHEME	00	TP1301



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VICTORIA 3006 AUSTRALIA
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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 2 QUADRANT 3	VCAT AMENDED SCHEME	00	TP1302



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021	

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PROJECT
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25 SEPARATION STREET
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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 3 QUADRANT 3	VCAT AMENDED SCHEME	00	**TP1303**



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
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PROJECT
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25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 4 QUADRANT 3	VCAT AMENDED SCHEME	00	TP1304

GENERAL NOTE
*THIS DRAWING DOES NOT COVER ANY REMOVAL/RELOCATION OF ANY EXSITING UNDERGROUND SERVICES.

TOWER E

SITE BOUNDARY 39.38m 67°09'20"
SITE BOUNDARY 18.45m 92°27'00"
SITE BOUNDARY 28.42m 359°04'00"
SITE BOUNDARY 18.23m 25°53'00"
SITE BOUNDARY 42.57m 66°59'00"
1 002
6 967
5 339
6 000
1 800
1 500
1 800
1 800
RETAIL 12m²
RETAIL 12m²
RETAIL 12m²
RL 49.450
F&B 64m²
CORRIDOR 31m²
LOBBY 64m²
RL 49.450
F&B 41m²
GAS SUBMETER
LOADING/BOH 96m²
8 300
4 000
WATER METERS
SWITCHROOM
WASTE
BIKE LOBBY 26m²
2 000
NGL 49.200
N2 TP2001
EX STRATA RETAIL 764m²
REFER TO TP1200 SERIES
EASEMENT
EX STRATA RETAIL 579m²
RL 49.450
RL 50.413
RAMP 1:20
RAMP 1:20
RAMP 1:20
6 739
RL 49.450
W2 TP2005
RETAIL 55m²
RL 51.000
M6
2.0m HEAD HEIGHT
RAIN WATER TANK 35KL
RL 49.450
Q1
Q2
Q3
Q4
A
B
C
D

REFER TO TP1100 SERIES

EX MALL 3 687m²
EX STRATA RETAIL 488m²
N1 TP2000
RETAIL 105m²
RETAIL 109m²
RETAIL 90m²
RETAIL 91m²
RETAIL 147m²
RETAIL 160m²
EX STRATA RETAIL 2 306m²
31.45m 67°10'00"
11.10m 180°37'30"
7 940
2 151.95
5 000
1 800
1 500
1 800
7 970
21 437
6 150
RL 49.450
PN TP2101
E2 TP2003
LANEWAY 1 628m²
12 175
AFTER HOURS SECURITY POINT. GLAZED FOLD-UP DOOR
TOWER A LOBBY 94m²
MAIL
M6
CONCIERGE
4 620
RL 49.450
SITE BOUNDARY 76.00m 155°00'00"
ANGL 46.870
RL 49.450
RETAIL LOBBY
RL 49.450
RL 49.450
CONCIERGE
3.6m CLEAR
RL 49.450
F
RAMP 1:14
MINI MAJOR 650m²
LIQUOR 997m²
RL 49.450
RL 49.450
MAIL
DDA
RAMP 1:14
TOWER B LOBBY 154m²
M

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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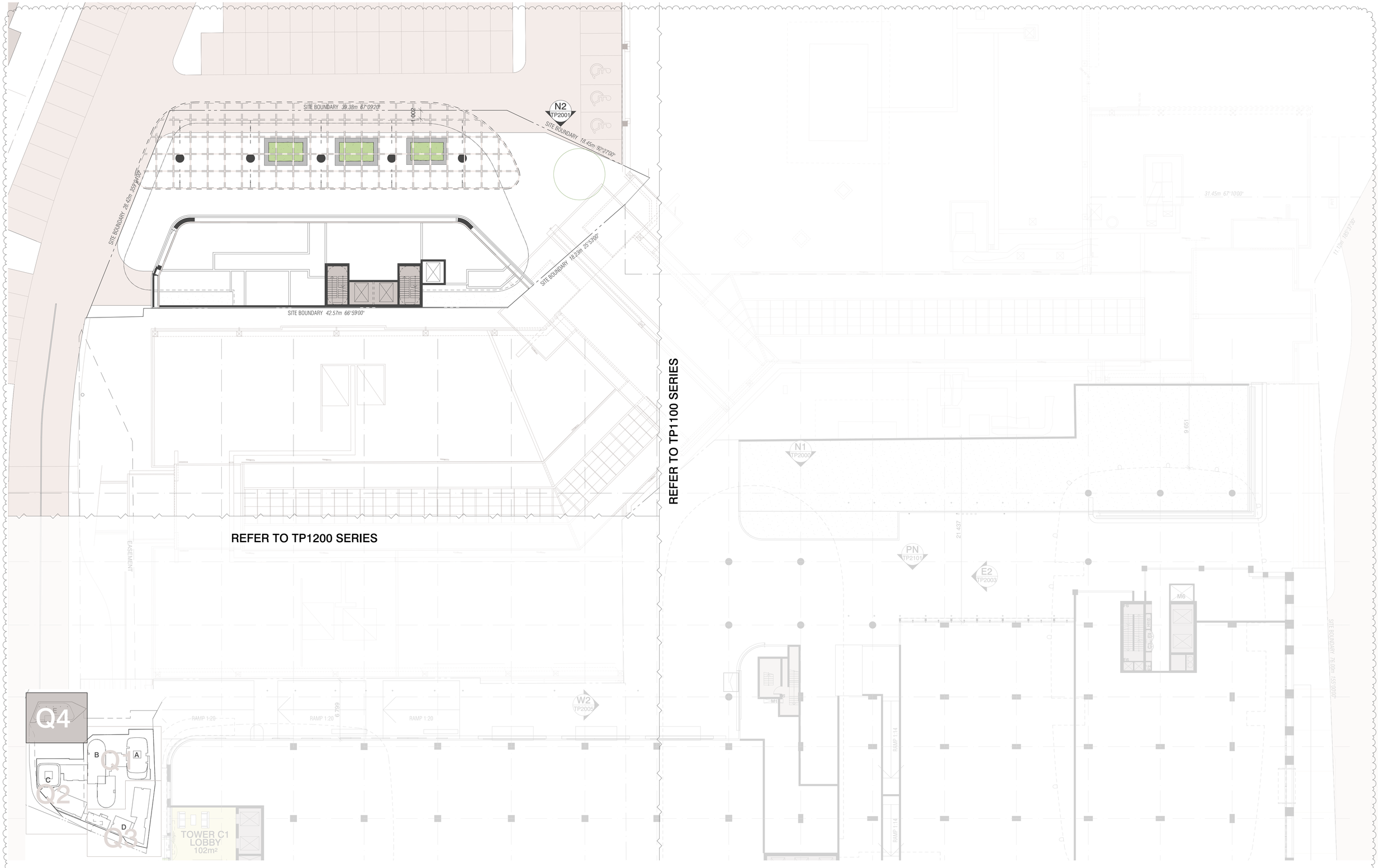
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LOWER GROUND FLOOR PLAN QUADRANT 4	VCAT AMENDED SCHEME	00	TP1400



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REVISION			REVISION
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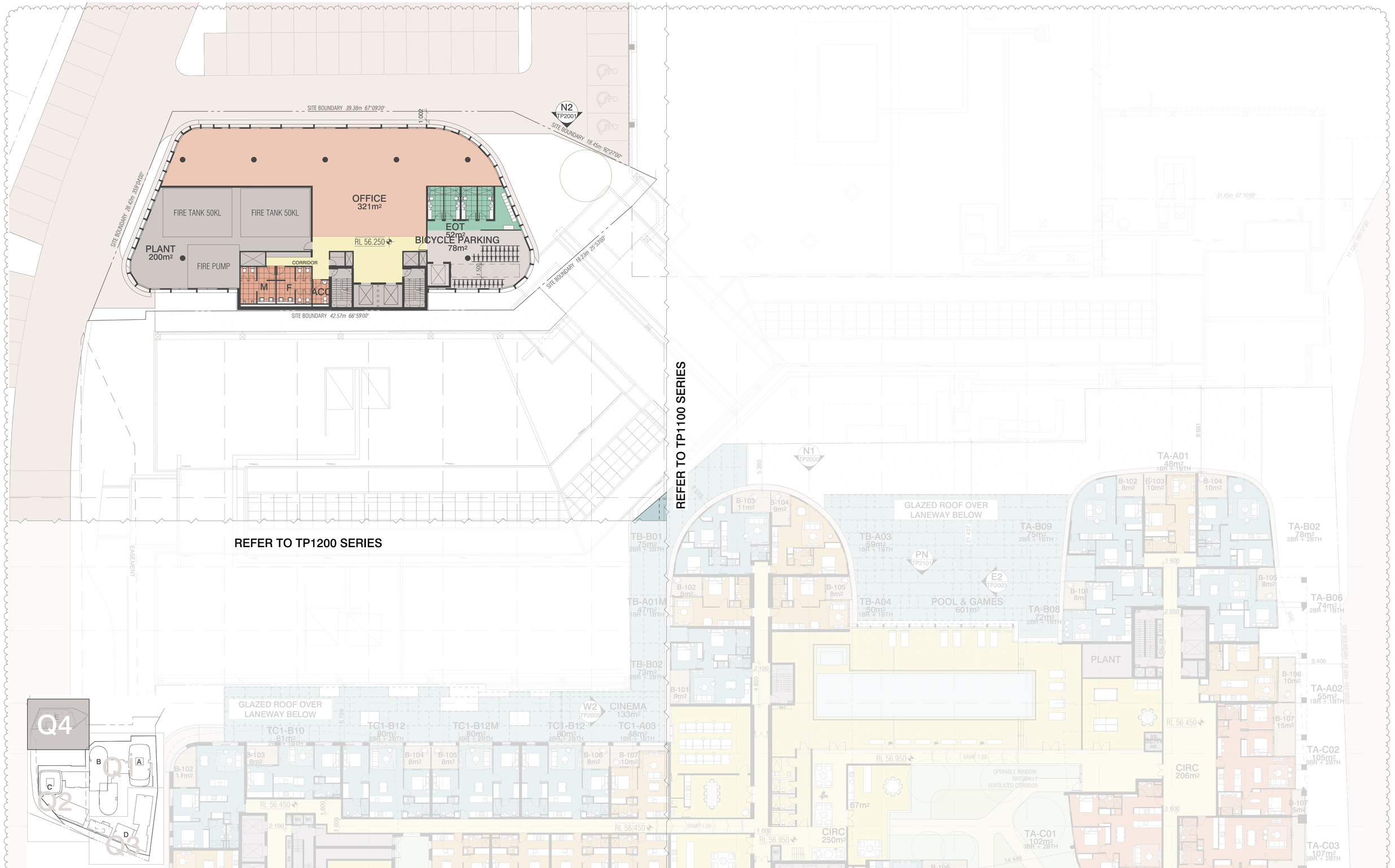
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	UPPER GROUND FLOOR PLAN QUADRANT 4	VCAT AMENDED SCHEME	00	**TP1400A**



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
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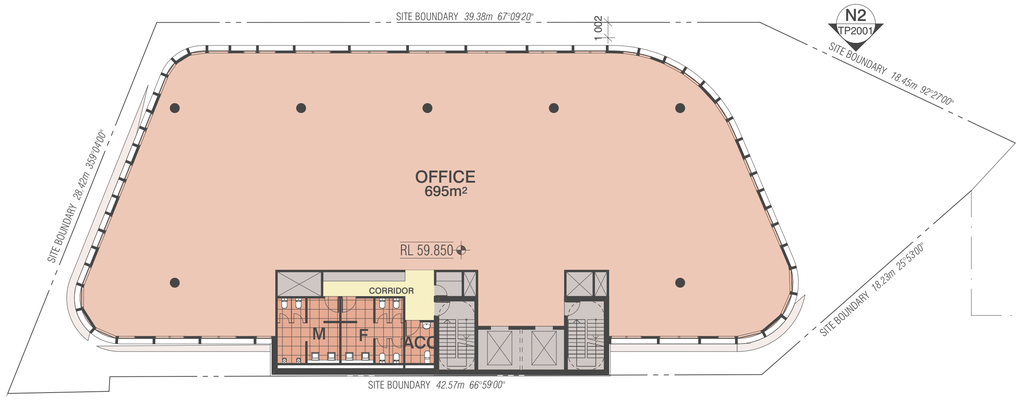
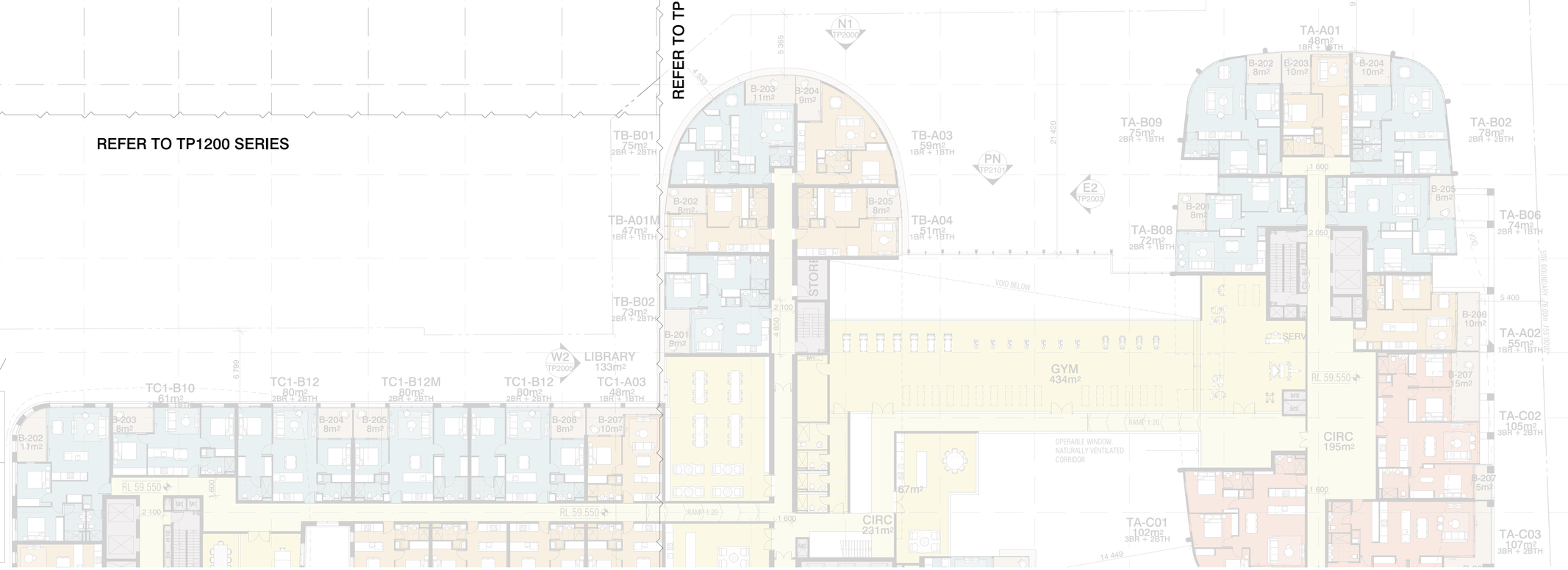
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 1 QUADRANT 4	VCAT AMENDED SCHEME	00	TP1401



REFER TO TP1200 SERIES

REFER TO TP1100 SERIES



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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
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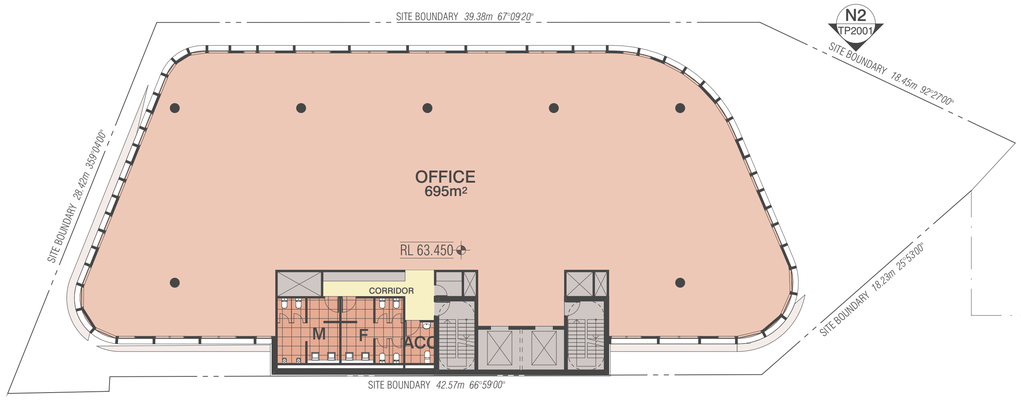
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 2 QUADRANT 4

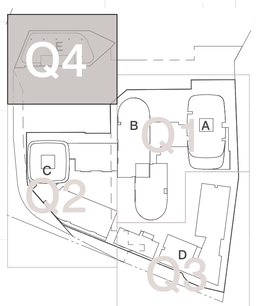
ISSUE PURPOSE	REV.	DRAWING NO.
VCAT AMENDED SCHEME	00	TP1402

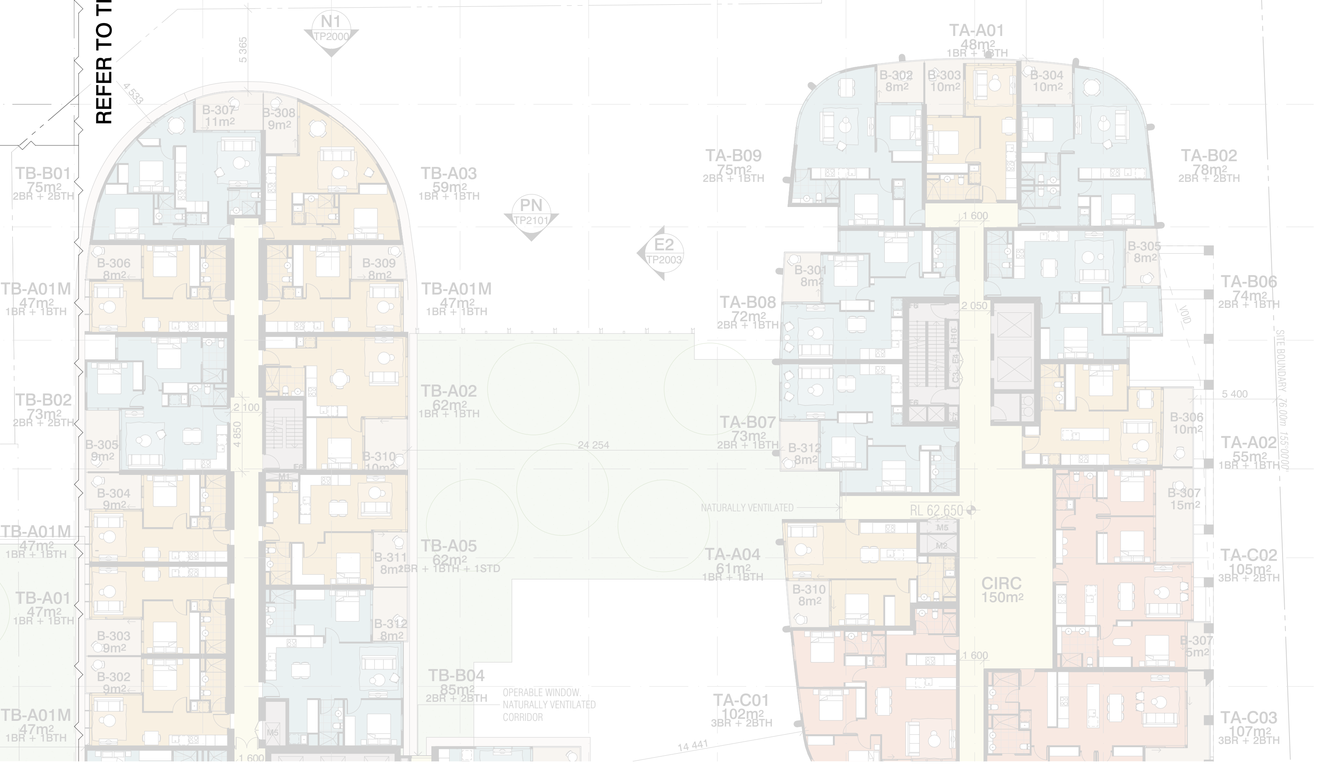


N2
TP2001

REFER TO TP1100 SERIES

REFER TO TP1200 SERIES





BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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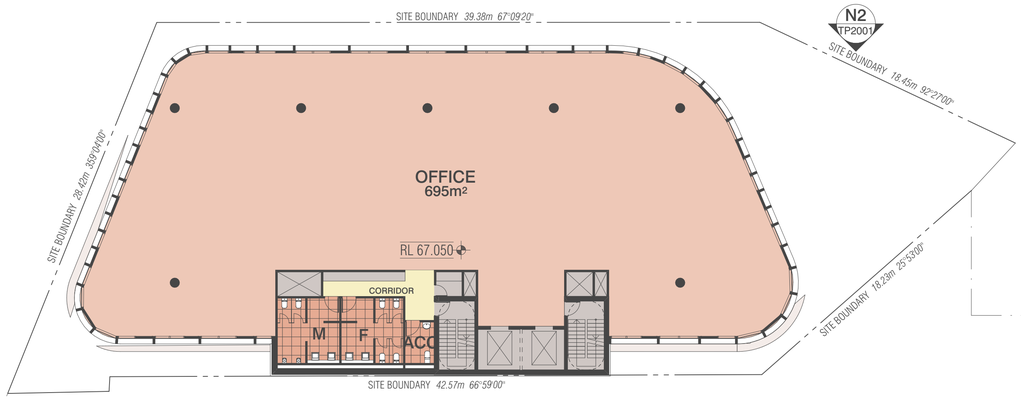
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 3 QUADRANT 4	VCAT AMENDED SCHEME	00	TP1403

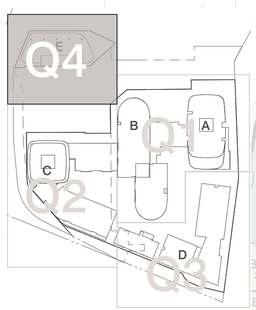


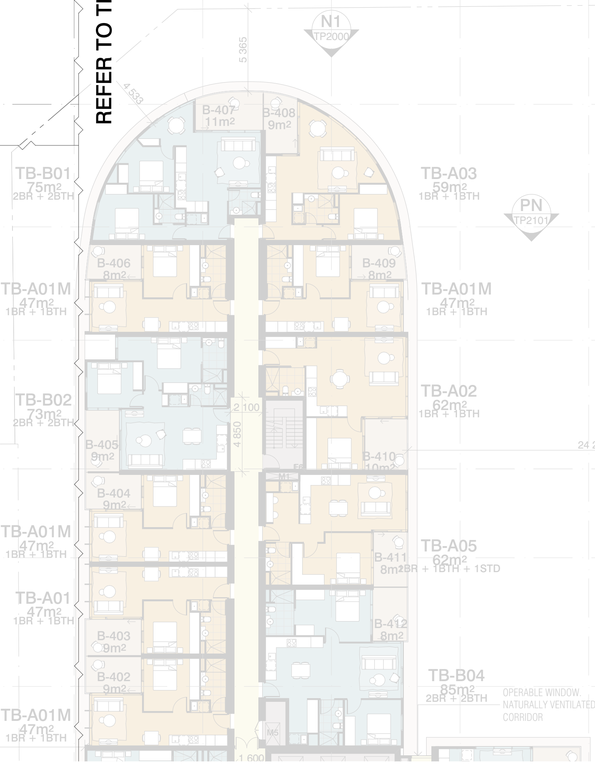
N2
TP2001

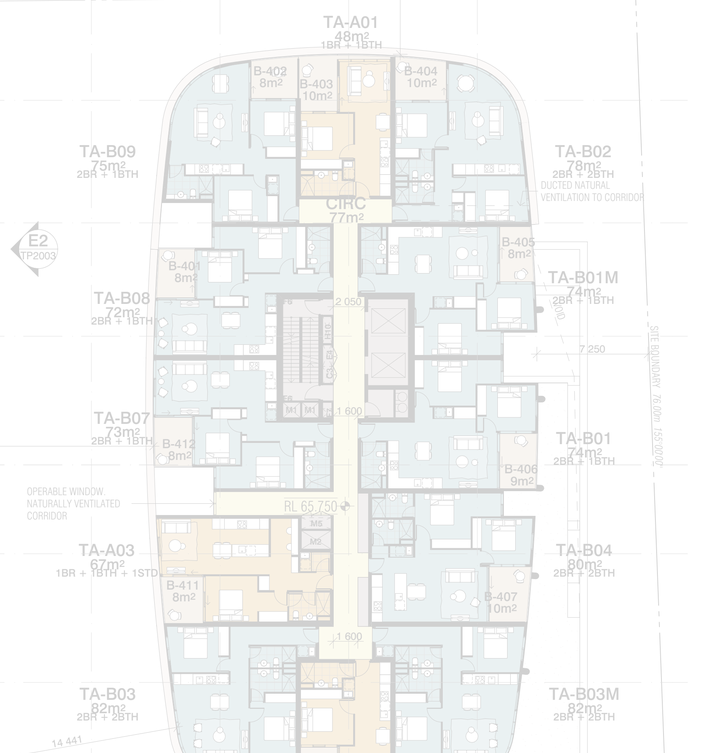
REFER TO TP1100 SERIES

REFER TO TP1200 SERIES

REFER TO TP1000 SERIES







E2
TP2003

EASEMENT

SITE BOUNDARY 76.40m 151°00'00"

31.45m 67°10'00"

11.43m 165°37'30"

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REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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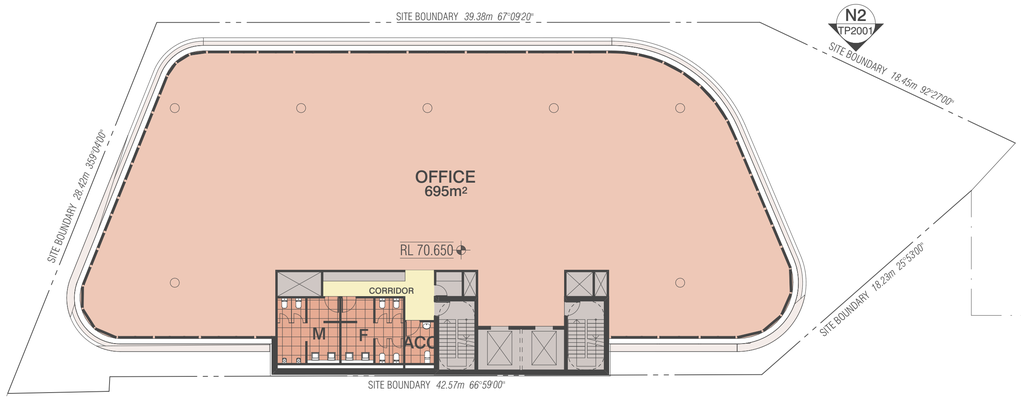
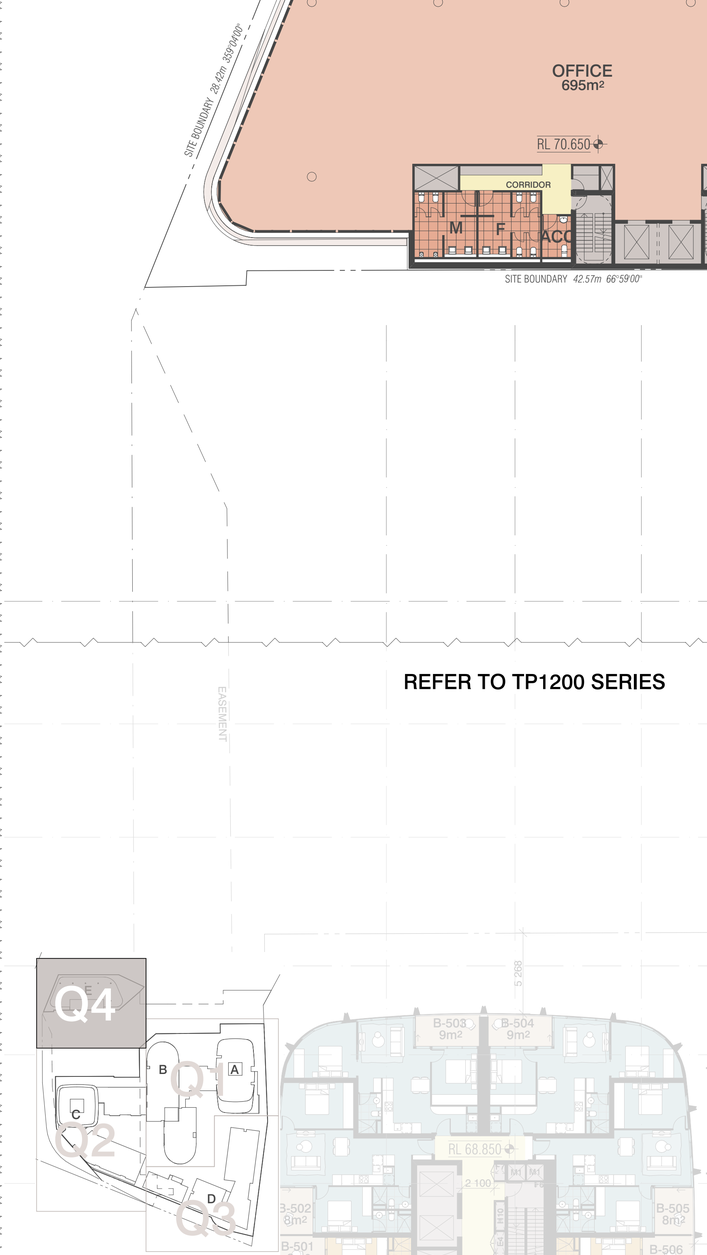
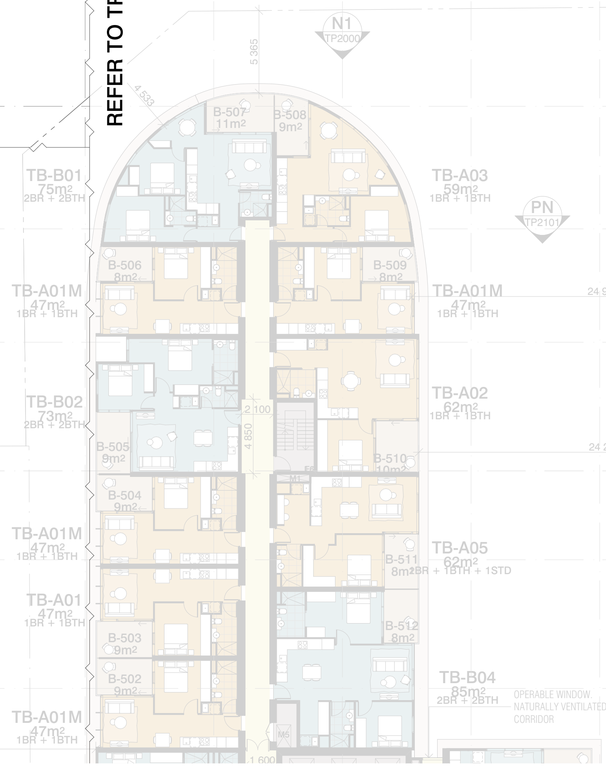
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 4 QUADRANT 4	VCAT AMENDED SCHEME	00	TP1404

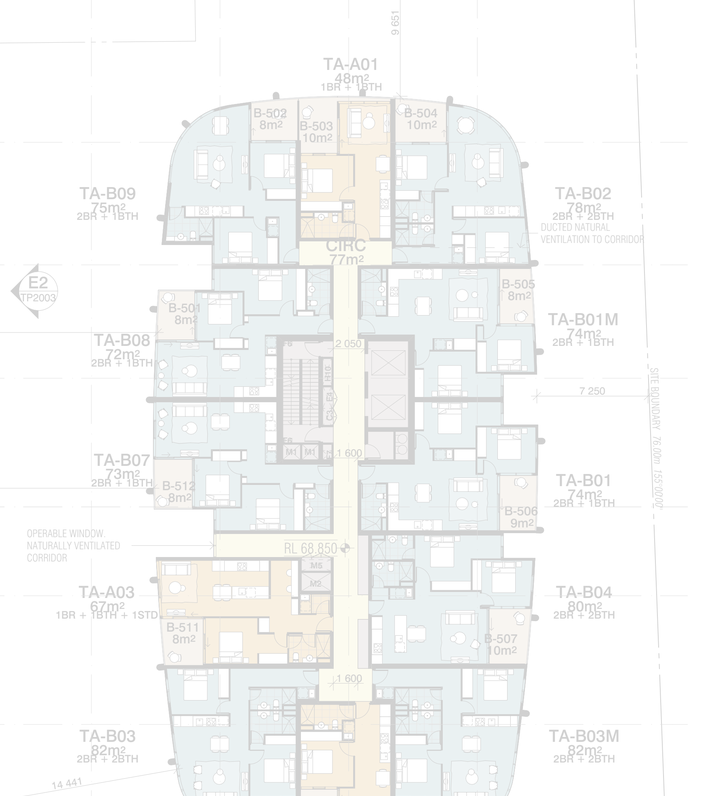


REFER TO TP1200 SERIES

REFER TO TP1100 SERIES







EASEMENT

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REVISION		REVISION	
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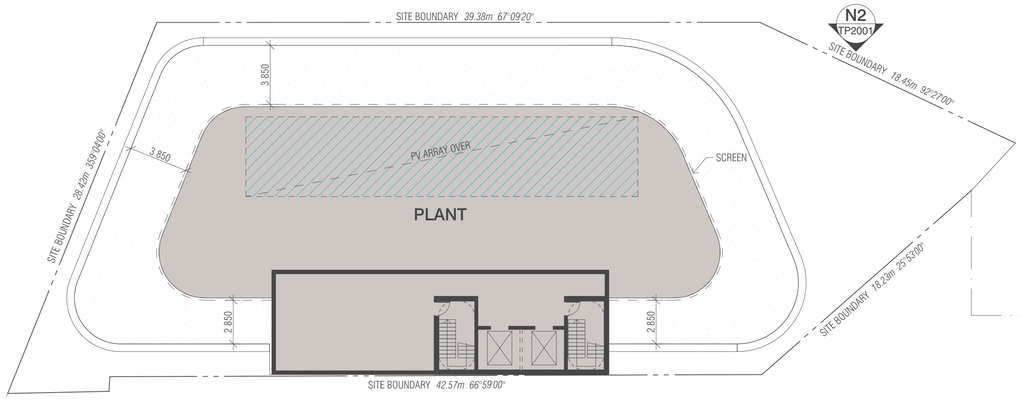
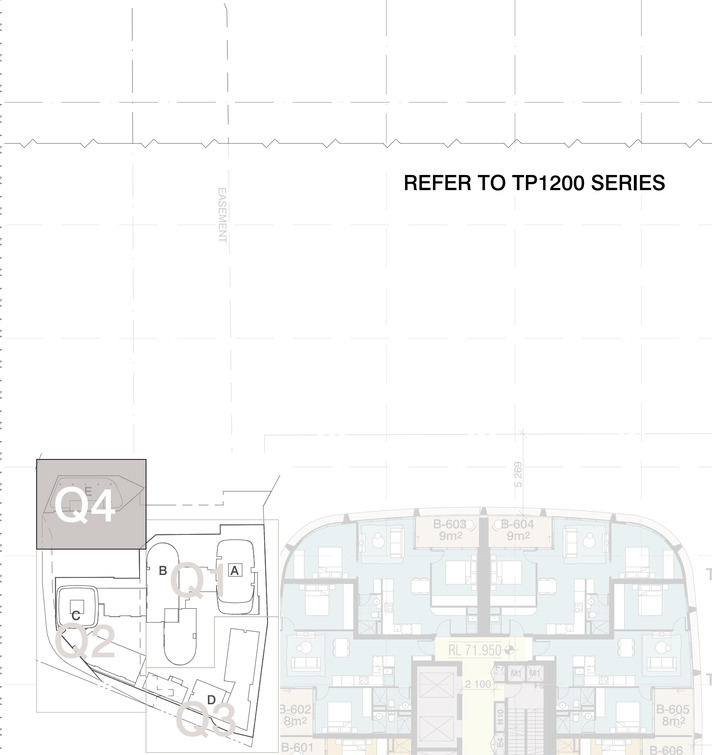
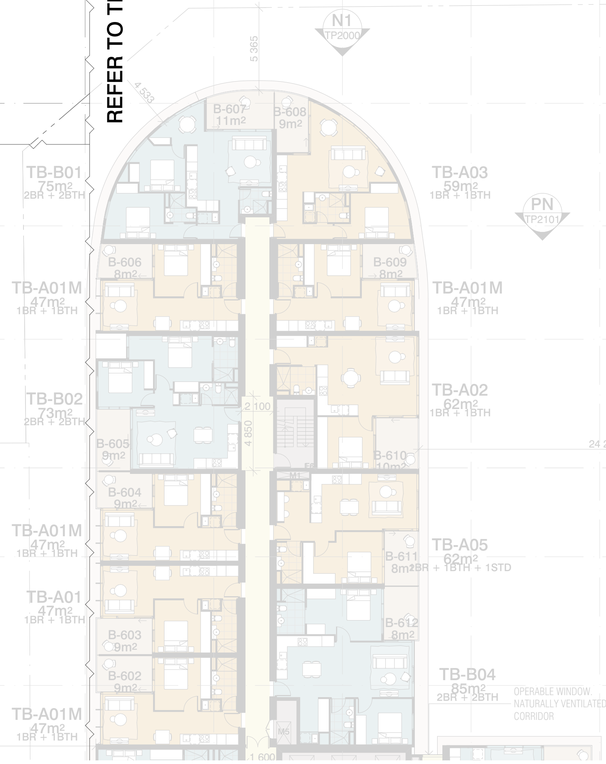
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 5 QUADRANT 4	VCAT AMENDED SCHEME	00	TP1405

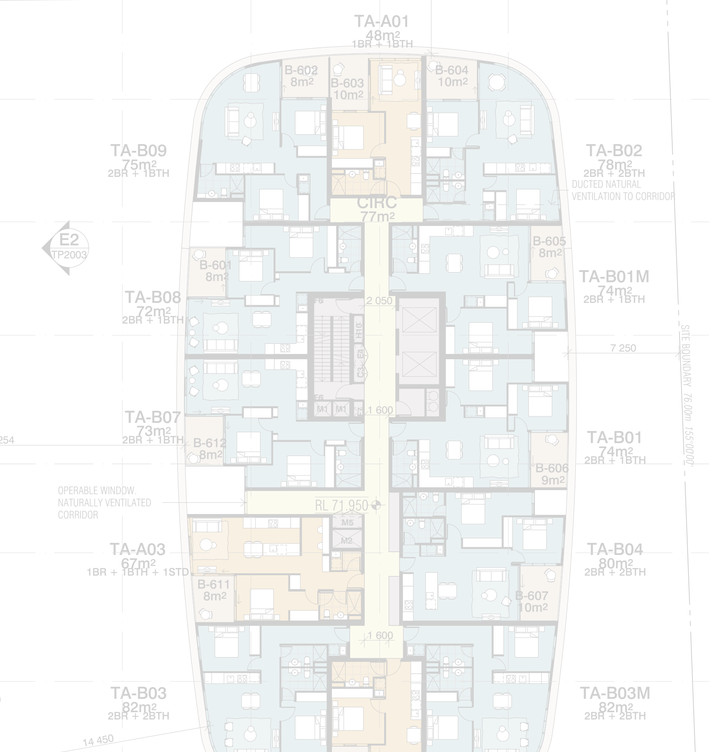


REFER TO TP1100 SERIES

REFER TO TP1200 SERIES







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PROJECT
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25 SEPARATION STREET
NORTHCOTE VIC 3070

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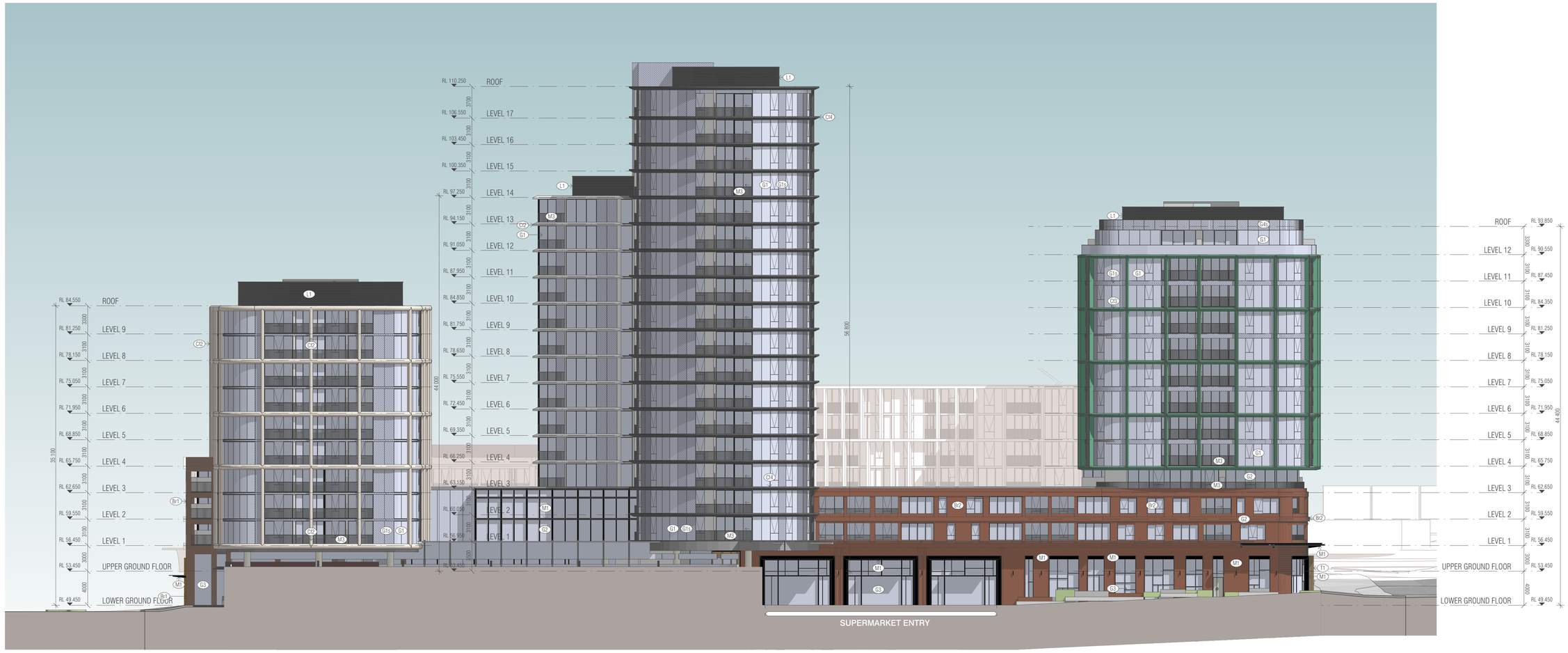
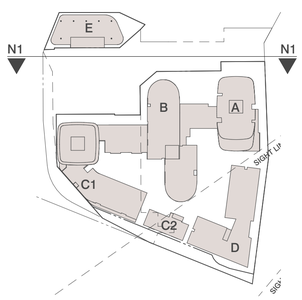
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:200@A1	LEVEL 6 ROOF QUADRANT 4	VCAT AMENDED SCHEME	00	TP1406





N1 NORTH ELEVATION 01
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C2 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C3 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C4 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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00	VCAT AMENDED SCHEME	VN	13.09.2021

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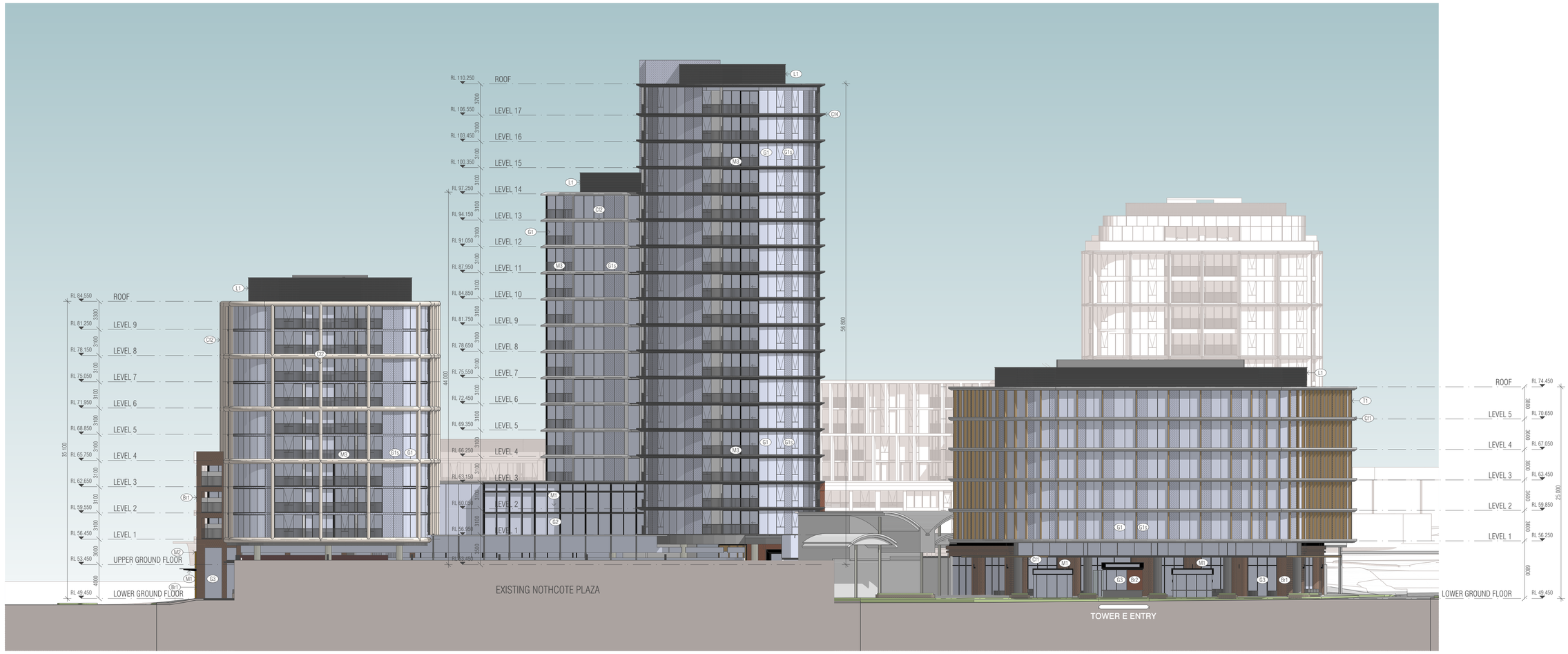
VN	13.09.2021	KT	16.09.2021	21045	1:250@A1

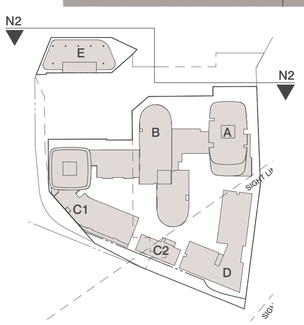
DRAWING TITLE NORTH ELEVATION 01

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP2000





N2 - NORTH ELEVATION 02
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1	NEUTRAL VISION GLAZING	C1	CONCRETE FINISH	Br1 / Br5 / Br7	BRICK FINISH RED	M2	BRONZE METAL FINISH
G1s	NEUTRAL SPANDREL GLAZING	C2	CONCRETE BRIGHTON LITE FINISH	Br2 / Br6	BRICK FINISH HERITAGE RED	M3	METAL FINISH CHARCOAL BALUSTRADE
G2	NEUTRAL VISION GLAZING	C3	CONCRETE VERDIGRIS FINISH	Br3 / Br4	BRICK FINISH RED / BROWN		
G2s	NEUTRAL SPANDREL GLAZING	C4	CONCRETE CHARCOAL FINISH	L1	LOUVRES METAL CHARCOAL		
G3	CLEAR VISION GLAZING	T1	TIMBER FINISH	M1	METAL FINISH CHARCOAL		

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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00	VCAT AMENDED SCHEME	VN	13.09.2021

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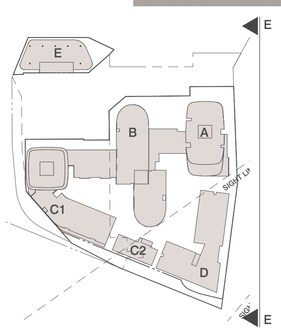

E1 EAST ELEVATION 01
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C12 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C13 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C14 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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VN	13.09.2021	KT	16.09.2021	21045	1:250@A1

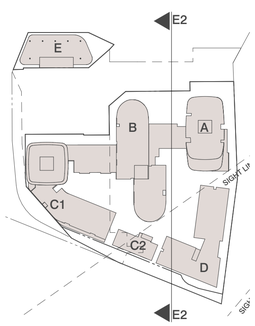
DRAWING TITLE EAST ELEVATION 01

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP2002





E2 - EAST ELEVATION
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

- G1 NEUTRAL VISION GLAZING
- G1s NEUTRAL SPANDREL GLAZING
- G2 NEUTRAL VISION GLAZING
- G2s NEUTRAL SPANDREL GLAZING
- G3 CLEAR VISION GLAZING
- CI1 CONCRETE FINISH
- CI2 CONCRETE BRIGHTON LITE FINISH
- CI3 CONCRETE VERDIGRIS FINISH
- CI4 CONCRETE CHARCOAL FINISH
- T1 TIMBER FINISH
- Br1 Br5 Br7 BRICK FINISH RED
- Br2 Br6 BRICK FINISH HERITAGE RED
- Br3 Br4 BRICK FINISH RED / BROWN
- L1 LOUVRES METAL CHARCOAL
- M1 METAL FINISH CHARCOAL
- M2 BRONZE METAL FINISH
- M3 METAL FINISH CHARCOAL BALUSTRADE

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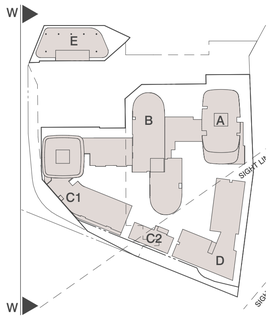
VN	13.09.2021	KT	16.09.2021	21045	1:250@A1	EAST ELEVATION 02	VCAT AMENDED SCHEME	00	TP2003





W1 WEST ELEVATION 01
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C1/2 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C1/3 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C1/4 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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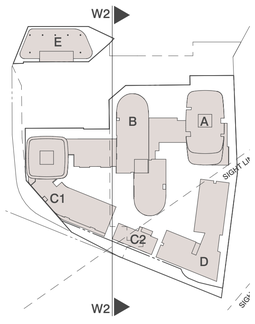

W2 WEST ELEVATION
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C/1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C/2 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C/3 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C/4 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

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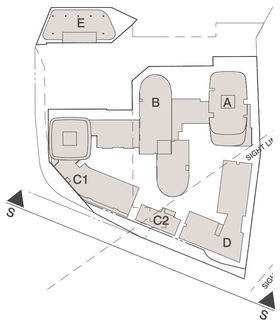
VN	13.09.2021	KT	16.09.2021	21045	1:250@A1	WEST ELEVATION 02	VCAT AMENDED SCHEME	00	TP2005





S1 SOUTH ELEVATION 01
SCALE 1:250@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C12 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C13 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C14 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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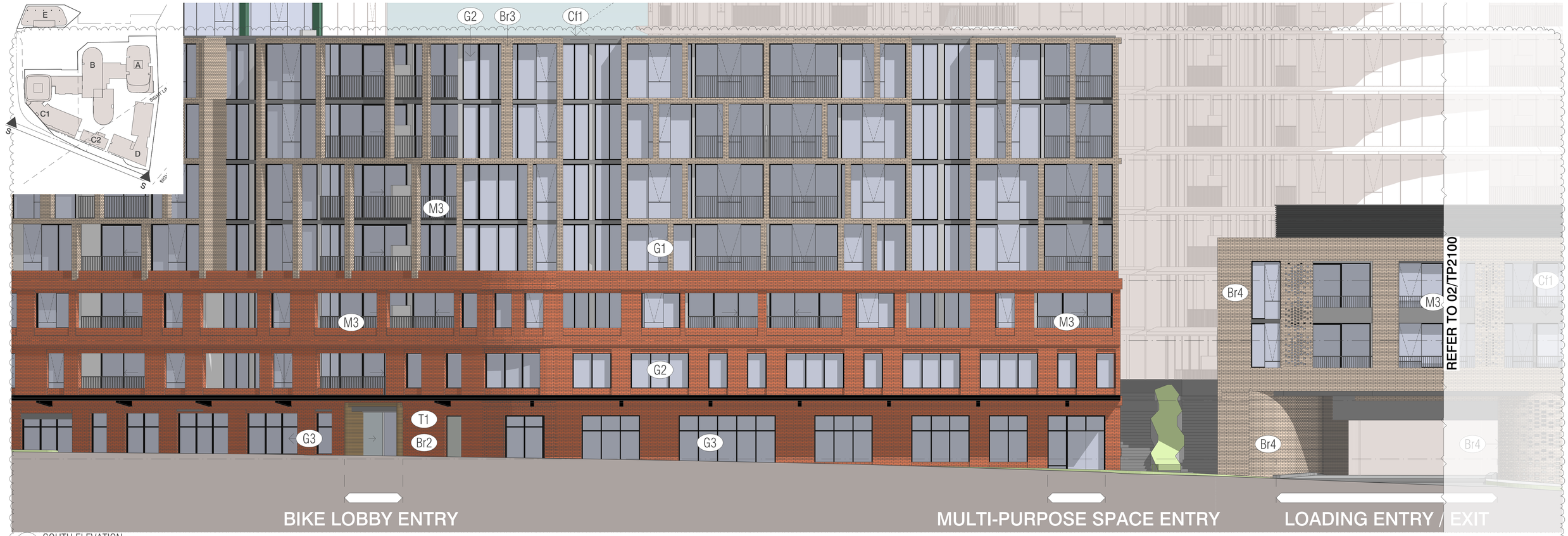
VN	13.09.2021	KT	16.09.2021	21045	1:250@A1

DRAWING TITLE SOUTH ELEVATION 01

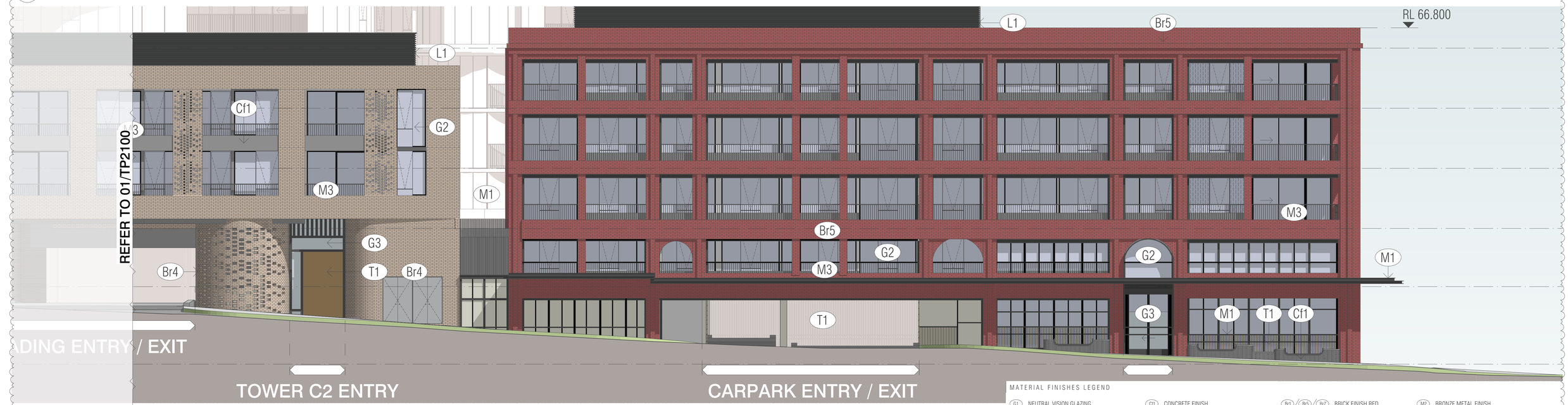
ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP2006



01 - SOUTH ELEVATION
SCALE 1:100@A1



02 - SOUTH ELEVATION
SCALE 1:100@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	Cf1 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	Cf2 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	Cf3 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	Cf4 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

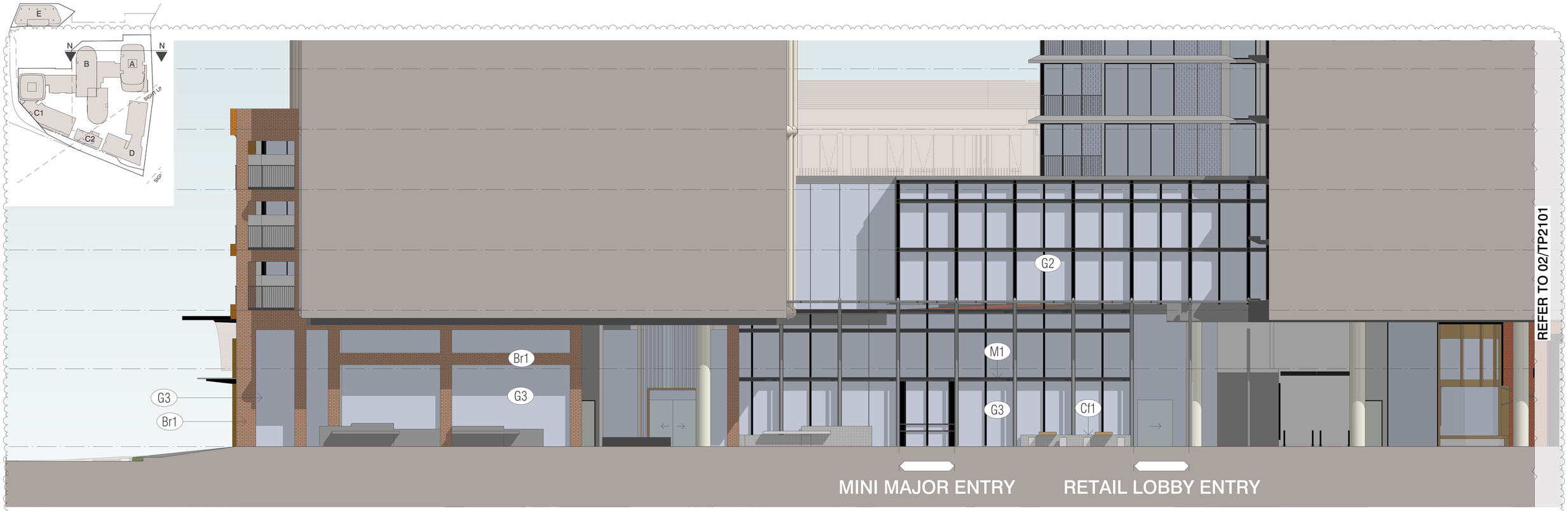
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:100@A1

DRAWING TITLE
SOUTH PODIUM ELEVATION

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP2100



01 NORTH ELEVATION
SCALE 1:100@A1



02 NORTH ELEVATION
SCALE 1:100@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C01 CONCRETE FINISH	Br1 Br5 Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C02 CONCRETE BRIGHTON LITE FINISH	Br2 Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C03 CONCRETE VERDIGRIS FINISH	Br3 Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C04 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	1:100@A1	NORTH PODIUM ELEVATION	VCAT AMENDED SCHEME	00	TP2101



01 EAST ELEVATION
SCALE 1:100@A1

02 EAST ELEVATION
SCALE 1:100@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	Cf1 CONCRETE FINISH	Br1 / Br5 / Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	Cf2 CONCRETE BRIGHTON LITE FINISH	Br2 / Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	Cf3 CONCRETE VERDIGRIS FINISH	Br3 / Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	Cf4 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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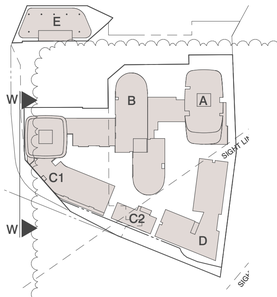
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:100@A1

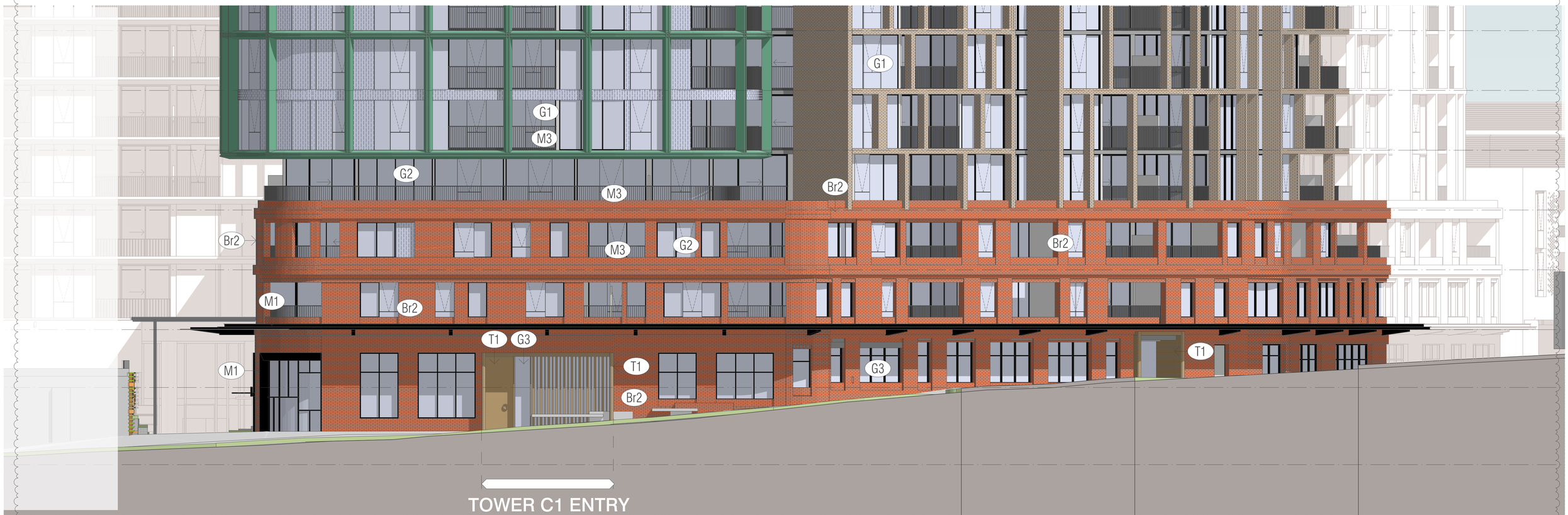
DRAWING TITLE
EAST PODIUM ELEVATION

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP2102





PW WEST ELEVATION
SCALE 1:100@A1

MATERIAL FINISHES LEGEND

G1 NEUTRAL VISION GLAZING	C1 CONCRETE FINISH	Br1 / Br5 / Br7 BRICK FINISH RED	M2 BRONZE METAL FINISH
G1s NEUTRAL SPANDREL GLAZING	C12 CONCRETE BRIGHTON LITE FINISH	Br2 / Br6 BRICK FINISH HERITAGE RED	M3 METAL FINISH CHARCOAL BALUSTRADE
G2 NEUTRAL VISION GLAZING	C13 CONCRETE VERDIGRIS FINISH	Br3 / Br4 BRICK FINISH RED / BROWN	
G2s NEUTRAL SPANDREL GLAZING	C14 CONCRETE CHARCOAL FINISH	L1 LOUVRES METAL CHARCOAL	
G3 CLEAR VISION GLAZING	T1 TIMBER FINISH	M1 METAL FINISH CHARCOAL	

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
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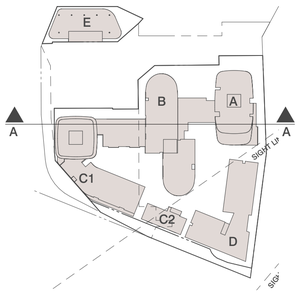
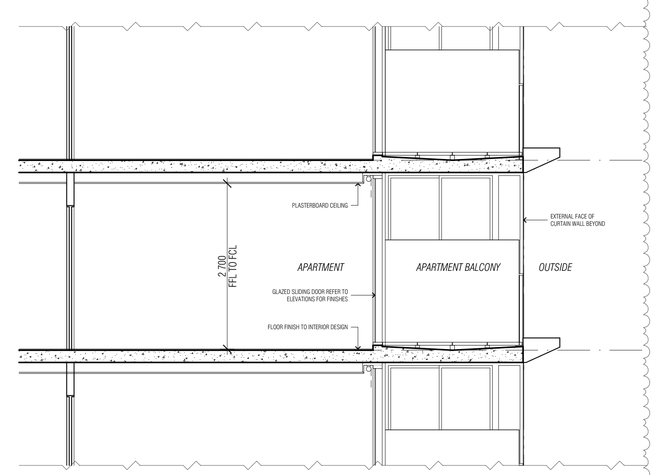
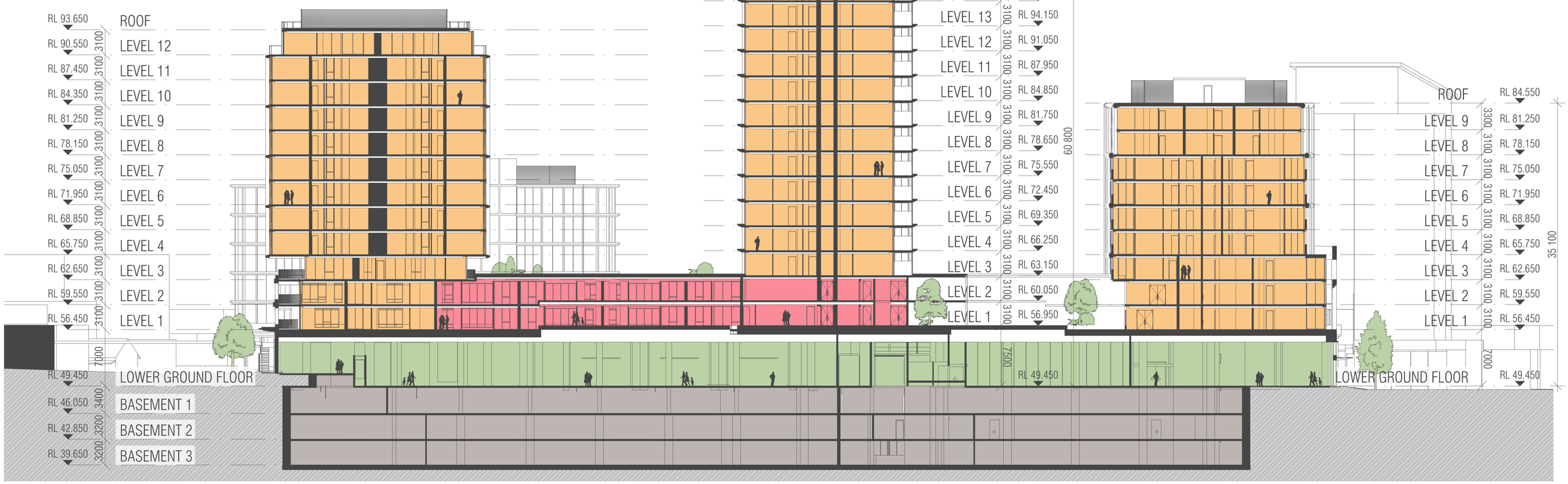




DETAIL - TYPICAL APARTMENT SECTION
SCALE 1:50@A1



A - SECTION A (TP/DA)
SCALE 1:250@A1

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00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
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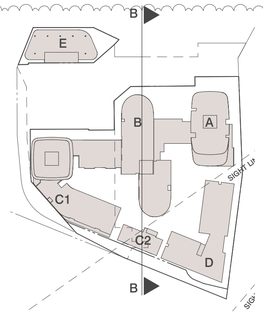
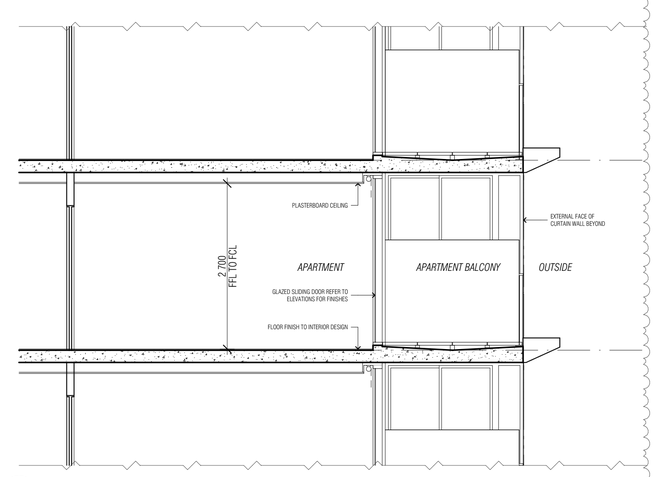
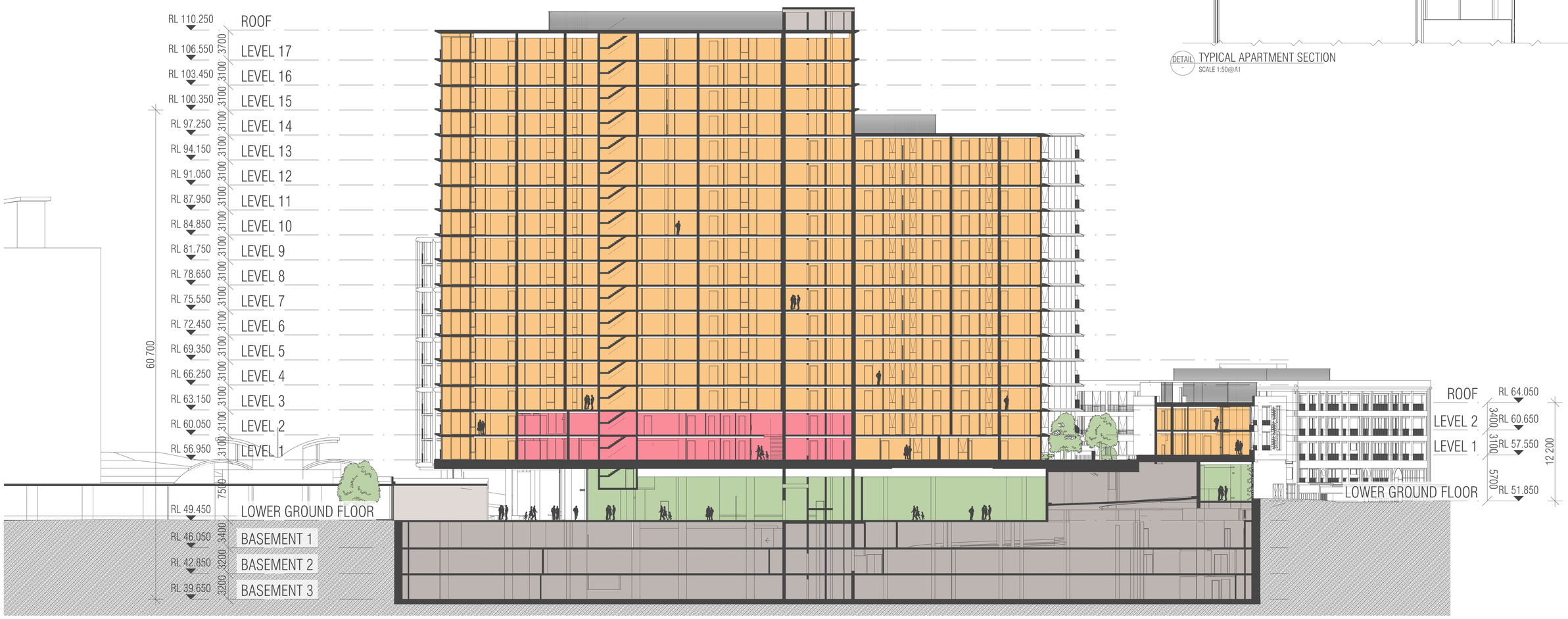
VN	13.09.2021	KT	16.09.2021	21045	1:250@A1	SECTION A	VCAT AMENDED SCHEME	00	TP2500





DETAIL - TYPICAL APARTMENT SECTION
SCALE 1:50@A1



B - SECTION B (TP/DA)
SCALE 1:250@A1

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	1:250@A1	SECTION B	VCAT AMENDED SCHEME	00	TP2501



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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	15.09.2021	21045	N.T.S.@A1

DRAWING TITLE
VIEW FROM SOUTH OF SEPARATION ST

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP3000



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1

DRAWING TITLE
VIEW FROM ALL NATIONS PARK

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP3001



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	VIEW FROM NORTHWESTERN CAR PARK	VCAT AMENDED SCHEME	00	TP3002



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION				REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021	

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	VIEW FROM ALL NATIONS HILL	VCAT AMENDED SCHEME	00	TP3003



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1

DRAWING TITLE
VIEW FROM ALL NATIONS PARK PLAYGROUND

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP3004



BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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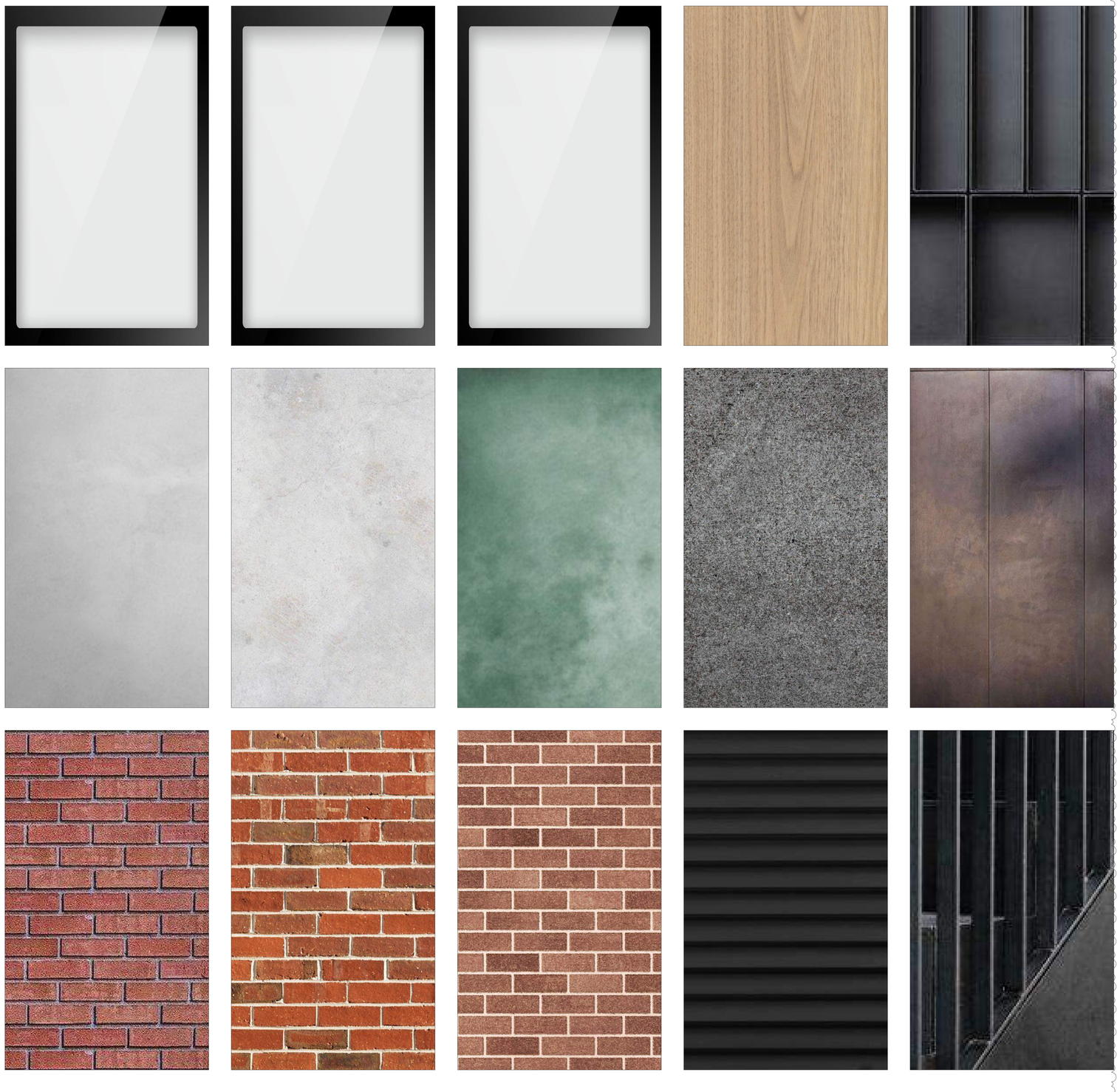
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	15.09.2021	21045	N.T.S.@A1	VIEW FROM WEST OF SEPARATION ST	VCAT AMENDED SCHEME	00	**TP3005**

EXTERNAL FINISHES

G1 G1s	G2 G2s	G3	T1	M1
Cf1	Cf2	Cf3	Cf4	M2
Br1 Br5 Br7	Br2 Br6	Br3 Br4	L1	M3



MATERIAL FINISHES LEGEND

- G1 NEUTRAL VISION GLAZING
- G1s NEUTRAL SPANDREL GLAZING
- G2 NEUTRAL VISION GLAZING
- G2s NEUTRAL SPANDREL GLAZING
- G3 CLEAR VISION GLAZING
- Br1 / Br5 / Br7 BRICK FINISH RED
- Br2 / Br6 BRICK FINISH HERITAGE RED
- Br3 / Br4 BRICK FINISH RED / BROWN
- L1 LOUVRES METAL CHARCOAL
- M1 METAL FINISH CHARCOAL
- Cf1 CONCRETE FINISH
- Cf2 CONCRETE BRIGHTON LITE FINISH
- Cf3 CONCRETE VERDIGRIS FINISH
- Cf4 CONCRETE CHARCOAL FINISH
- T1 TIMBER FINISH
- M2 BRONZE METAL FINISH
- M3 METAL FINISH CHARCOAL BALUSTRADE

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:400@A1

PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE
FINISHES SCHEDULE

FENDER KATSALIDIS
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2 RIVERSIDE QUAY, SOUTHBANK
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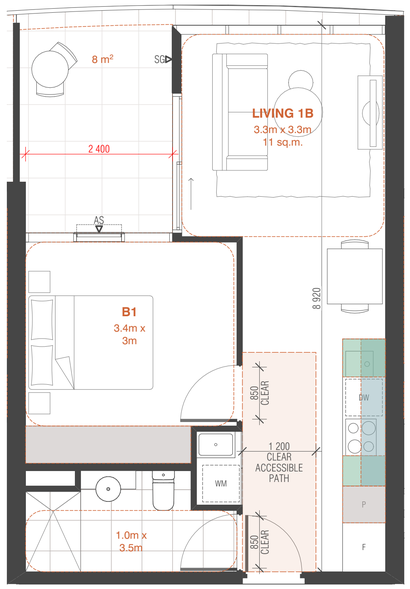
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP3500



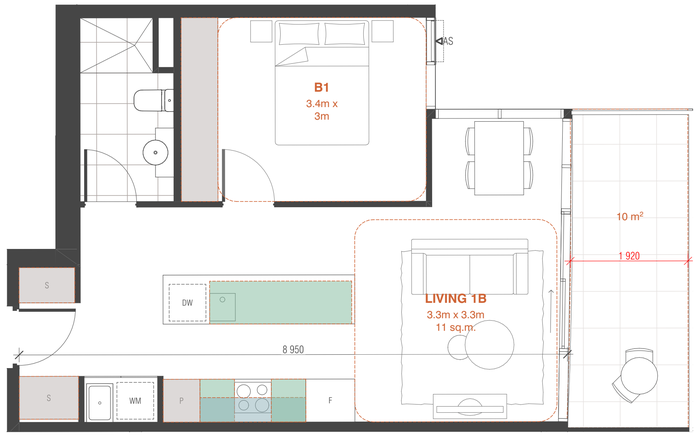
TOWER A APT TYPE A01 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TA-A01	9	1BR + 1BTH
TA-A01M	6	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TA-A01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		6 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES



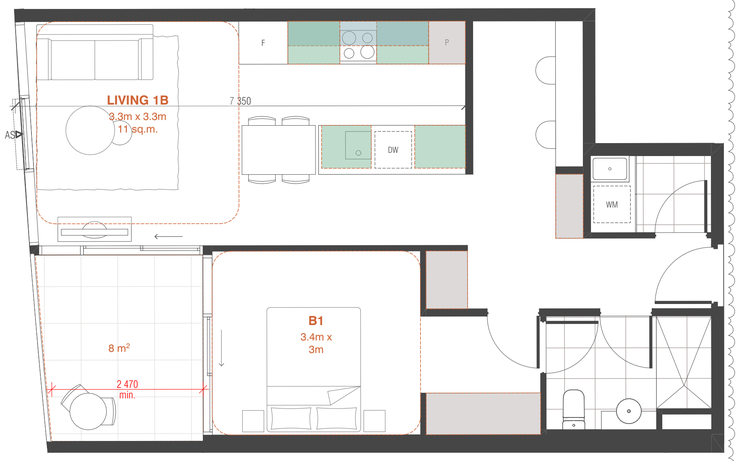
TOWER A APT TYPE A02

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TA-A02	3	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TA-A02		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	8
		11 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO



TOWER A APT TYPE A03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TA-A03	4	1BR + 1BTH + 1STD

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TA-A03		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	7
		9 m³

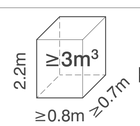
ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER A APARTMENT TYPES - 1BR

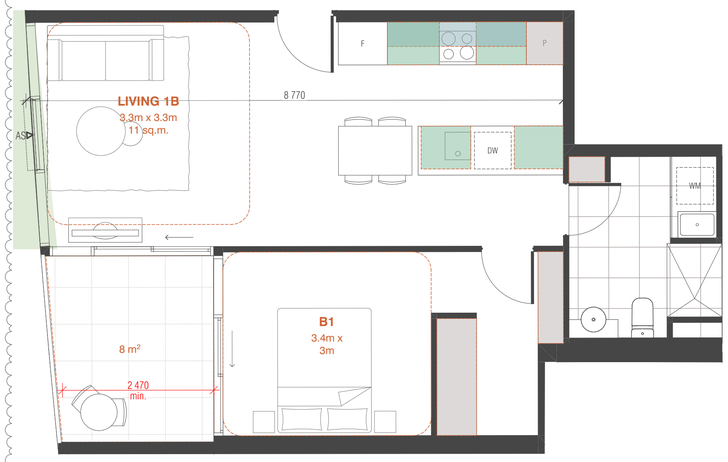
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5000



TOWER A APT TYPE A04

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-A04	1	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-A04		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	6
		9 m³

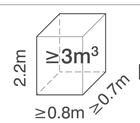
ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

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-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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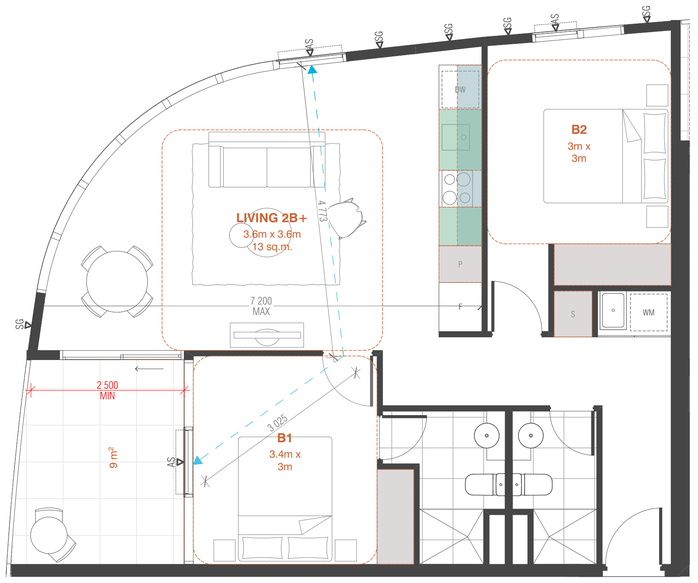
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER A APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME	00	**TP5001**



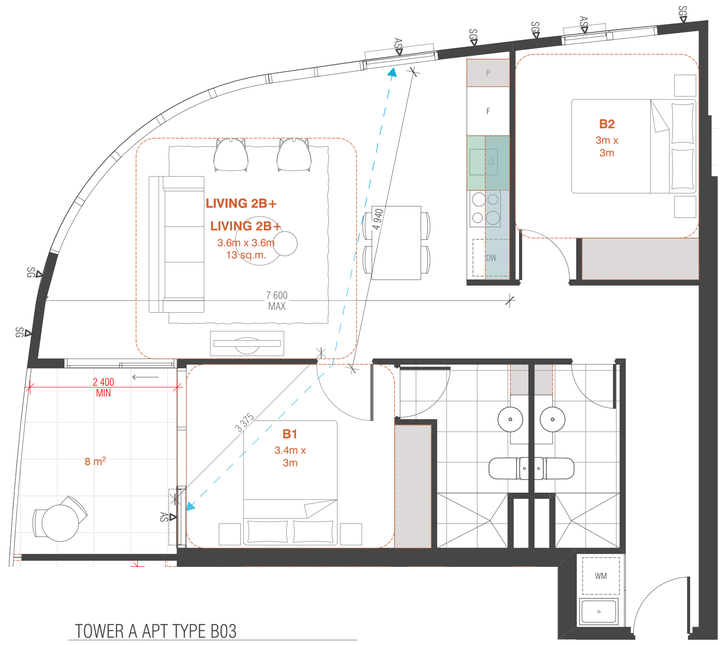
TOWER A APT TYPE B01

SCALE 1:50@A1



TOWER A APT TYPE B02

SCALE 1:50@A1



TOWER A APT TYPE B03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B01	6	2BR + 1BTH
TA-B01M	6	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B01		
	LOW CPD	2
	O/H CPD	2
	TALL CPD	9
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B02	9	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		9 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B03	4	2BR + 2BTH
TA-B03M	4	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B03		
	LOW CPD	0
	O/H CPD	1
	TALL CPD	7
		9 m³

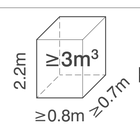
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE

TOWER A APARTMENT TYPES - 2BR

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

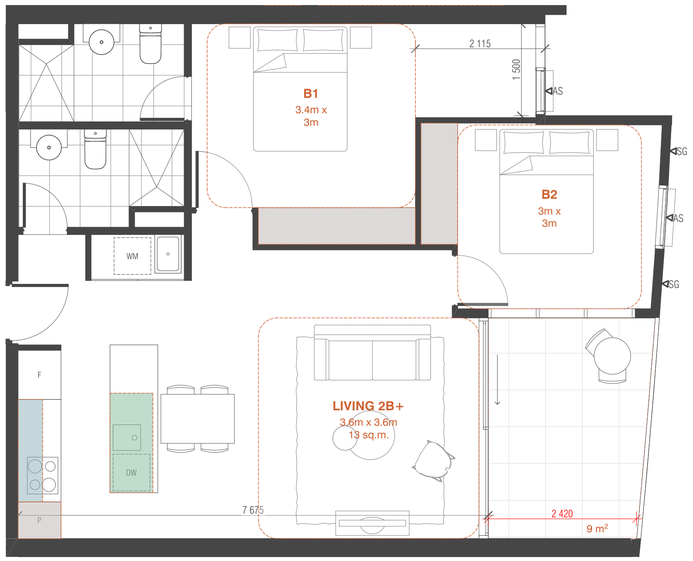
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

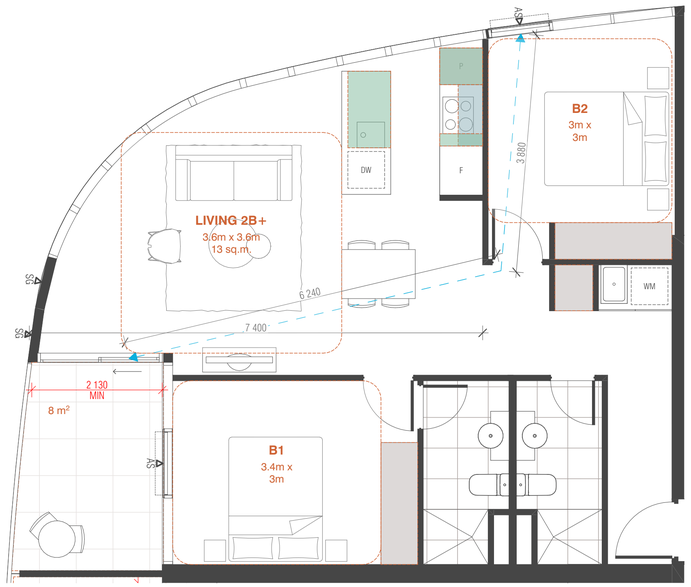
DRAWING NO.

TP5002



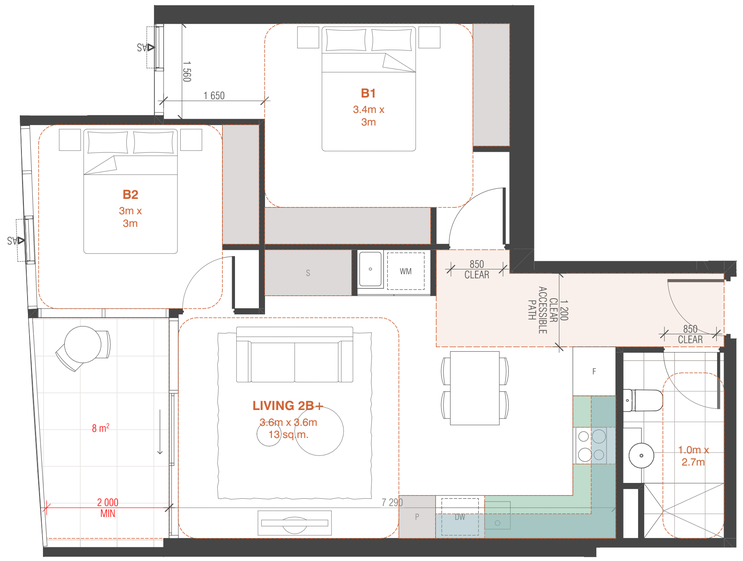
TOWER A APT TYPE B04

SCALE 1:50@A1



TOWER A APT TYPE B05

SCALE 1:50@A1



TOWER A APT TYPE B06 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B04	4	2BR + 2BTH

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B05	2	2BR + 2BTH
TA-B05M	2	2BR + 2BTH

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B06	3	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B04		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	9
		10 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B05		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	8
		9 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B06		
	LOW CPD	2
	O/H CPD	2
	TALL CPD	13
		16 m³

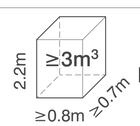
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER A APARTMENT TYPES - 2BR

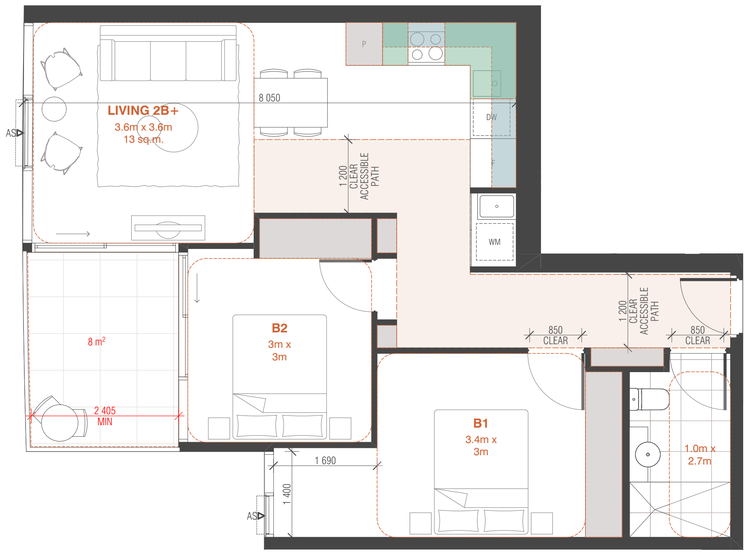
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5003



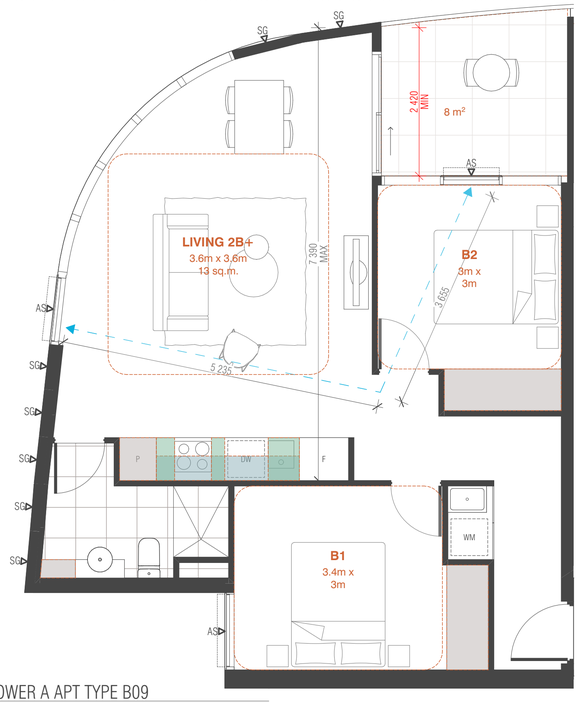
TOWER A APT TYPE B07 (ACCESSIBLE)

SCALE 1:50@A1



TOWER A APT TYPE B08

SCALE 1:50@A1



TOWER A APT TYPE B09

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B07	7	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B07		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	9
		12 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B08	9	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B08		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	9
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-B09	9	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-B09		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		9 m³

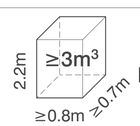
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER A APARTMENT TYPES - 2BR

ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

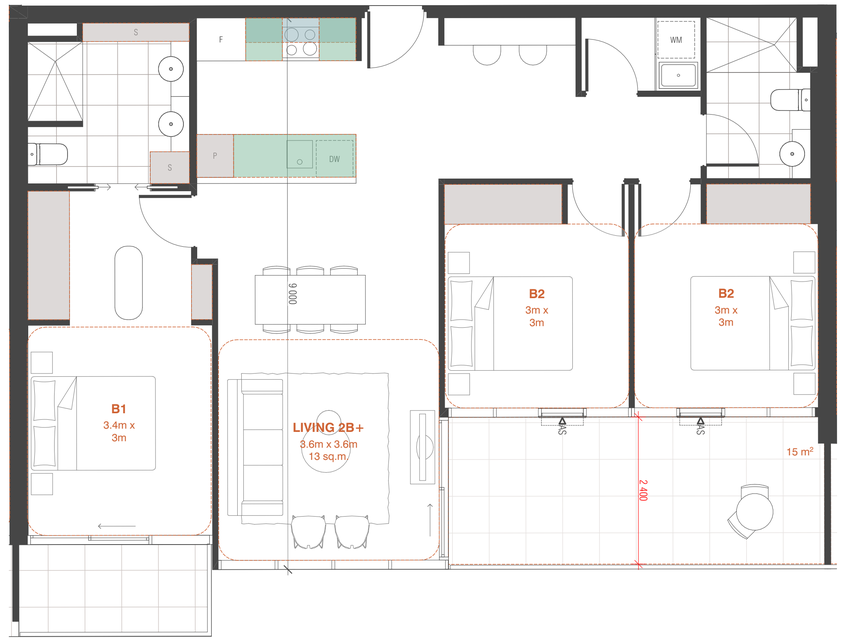
DRAWING NO.

TP5004



TOWER A APT TYPE C01

SCALE 1:50@A1



TOWER A APT TYPE C02

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-C01	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-C01		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	9
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-C02	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-C02		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	11
		13 m³

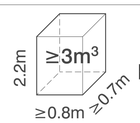
ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

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REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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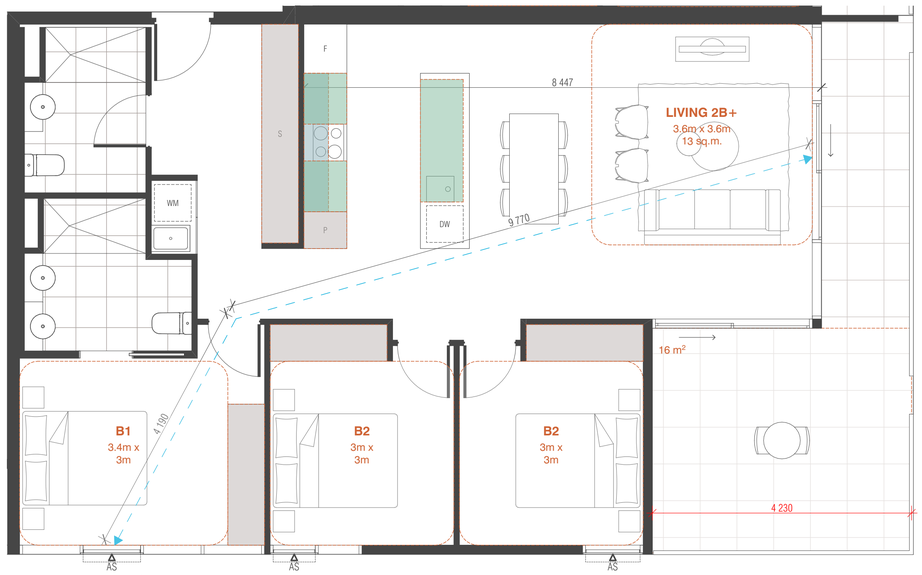
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER A APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME	00	TP5005



TOWER A APT TYPE C03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TA-C03	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TA-C03		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	15
		18 m³

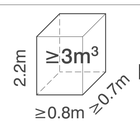
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

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00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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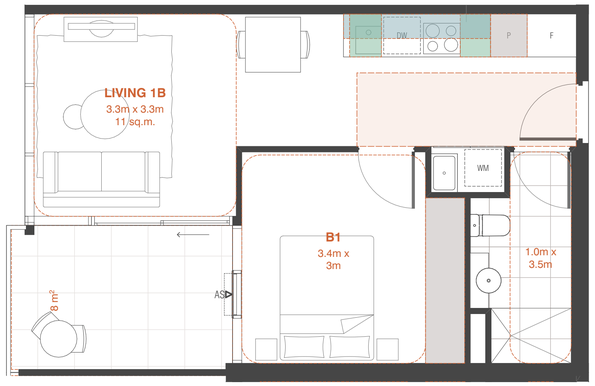
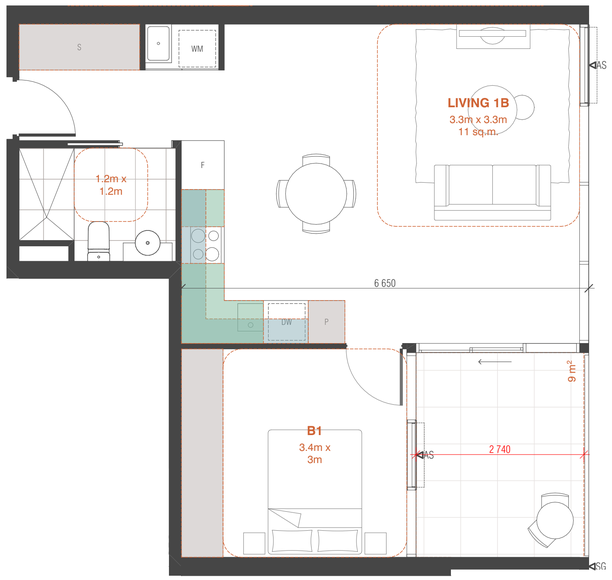
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER A APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME	00	**TP5006**



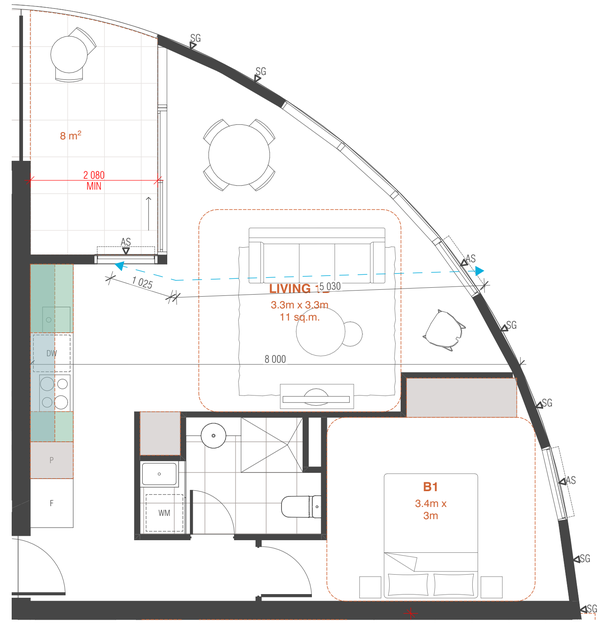
TOWER B APT TYPE A01 (ACCESSIBLE)

SCALE 1:50@A1



TOWER B APT TYPE A02

SCALE 1:50@A1



TOWER B APT TYPE A03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TB-A01	43	1BR + 1BTH
TB-A01M	70	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TB-A01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		6 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TB-A02	15	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TB-A02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	10
		13 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TB-A03	30	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TB-A03		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		7 m³

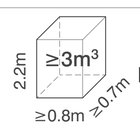
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

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00 VCAT AMENDED SCHEME VN 13.09.2021

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE

TOWER B APARTMENT TYPES - 1BR

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

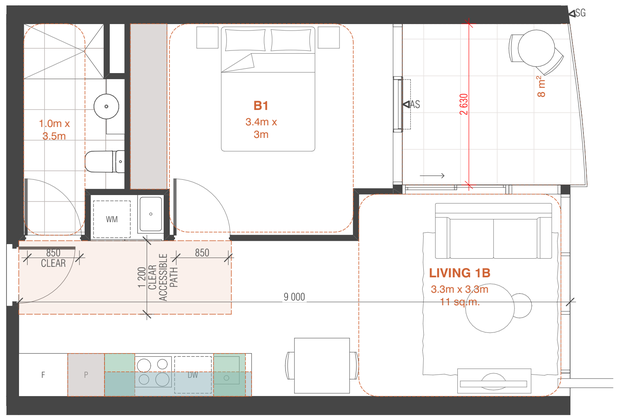
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

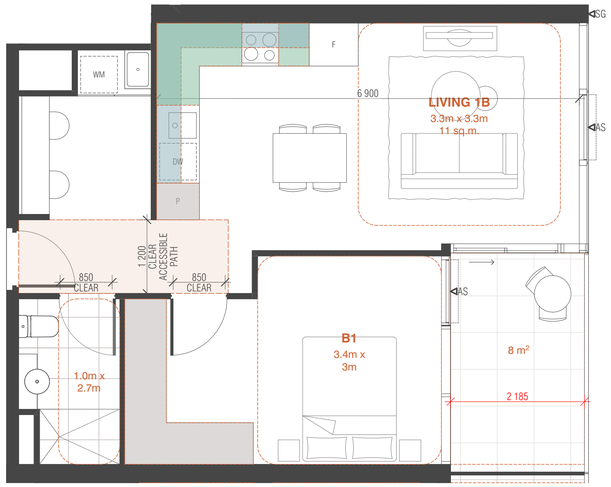
DRAWING NO.

TP5007



TOWER B APT TYPE A04 (ACCESSIBLE)

SCALE 1:50@A1



TOWER B APT TYPE A05 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-A04	2	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-A04		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		6 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-A05	15	1BR + 1BTH + 1STD
TB-A05 M	1	1BR + 1BTH + 1STD

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-A05		
	LOW CPD	1
	O/H CPD	2
	TALL CPD	8
		11 m³

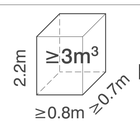
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

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REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

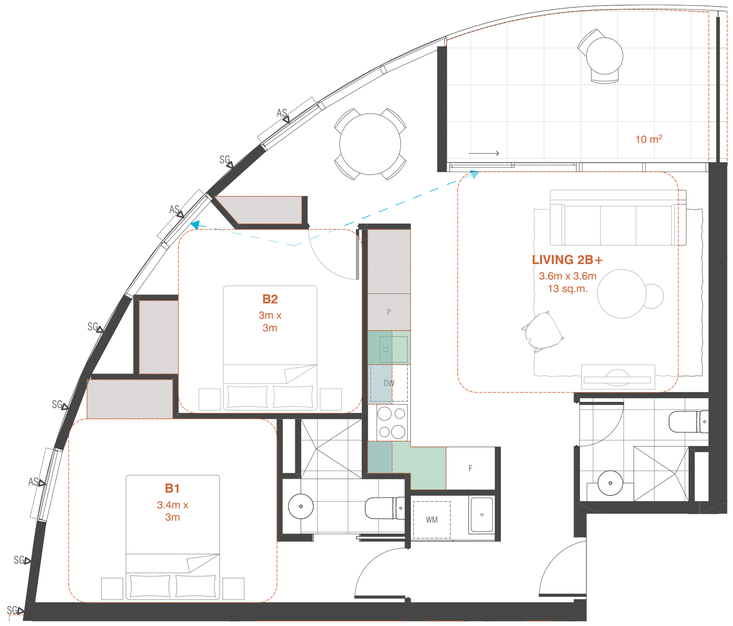
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE: TOWER B APARTMENT TYPES - 1BR

ISSUE PURPOSE: VCAT AMENDED SCHEME

REV.: 00

DRAWING NO.: TP5008



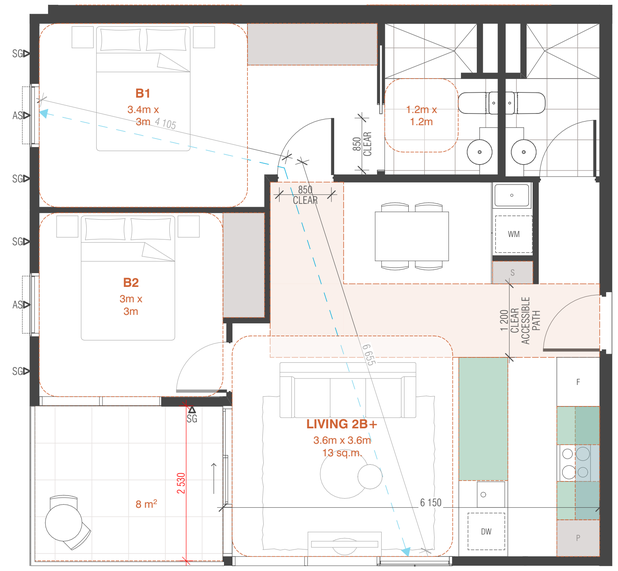
TOWER B APT TYPE B01

SCALE 1:50@A1



TOWER B APT TYPE B02 (ACCESSIBLE)

SCALE 1:50@A1



TOWER B APT TYPE B03 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-B01	30	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-B01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	8
		10 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-B02	30	2BR + 2BTH
TB-B02M	13	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-B02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		9 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-B03	28	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-B03		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	8
		10 m³

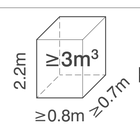
ACCESSIBLE	YES
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER B APARTMENT TYPES - 2BR

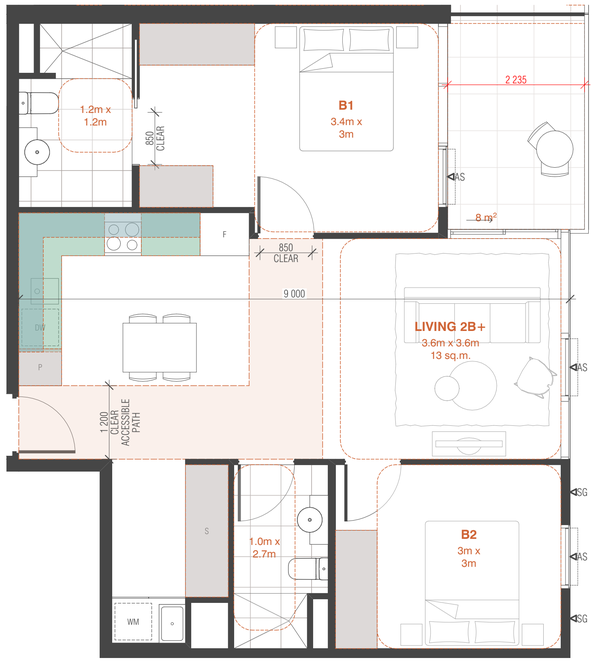
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5009



TOWER B APT TYPE B04 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TB-B04	15	2BR + 2BTH
TB-B04M	1	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TB-B04		
	LOW CPD	2
	O/H CPD	2
	TALL CPD	15
		18 m³

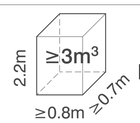
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

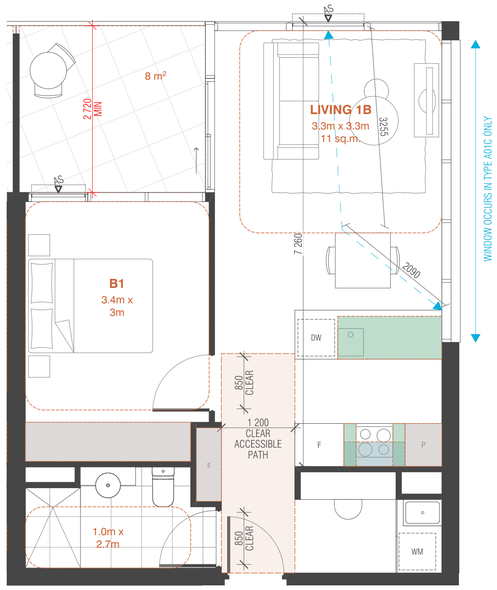
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE TOWER B APARTMENT TYPES - 2BR

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP5010



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE A01C ONLY.

TOWER C1 APT TYPE A01 (ACCESSIBLE)

SCALE 1:50@A1

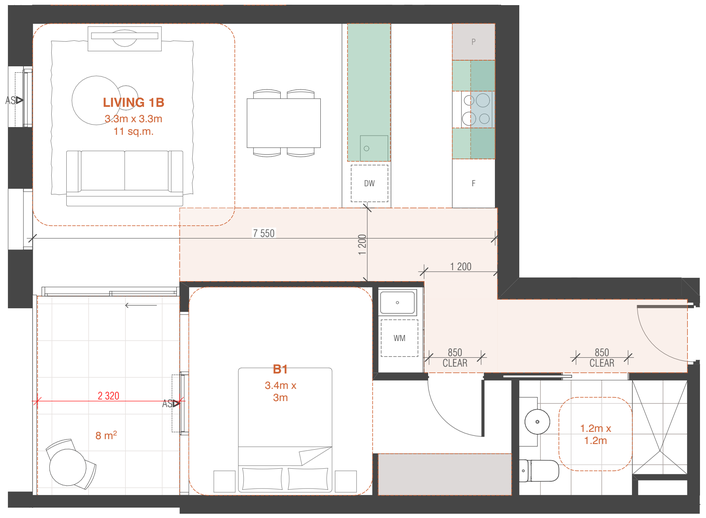
APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-A01	6	1BR + 1BTH
TC1-A01M	6	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-A01		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	7
		9 m³

ACCESSIBLE	YES
CROSS-VENTILATION	(TC1-A01C ONLY) YES
EXTERNAL STORAGE CAGE	YES



TOWER C1 APT TYPE A02 (ACCESSIBLE)

SCALE 1:50@A1

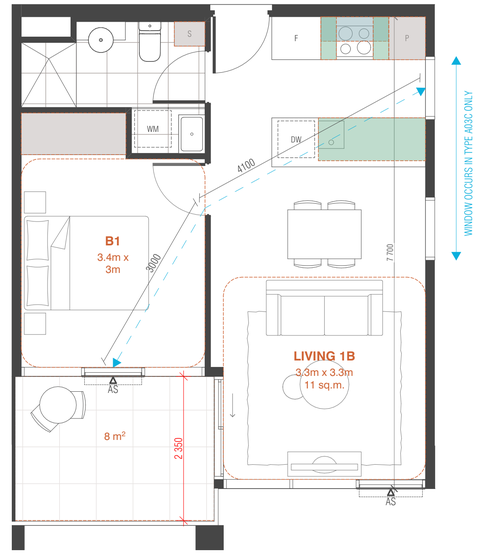
APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-A02	2	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-A02		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	5
		7 m³

ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE A03C ONLY.

TOWER C1 APT TYPE A03 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-A03	4	1BR + 1BTH
TC1-A03C	2	1BR + 1BTH
TC1-A03M	4	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-A03		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	4
		6 m³

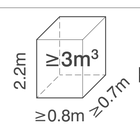
ACCESSIBLE	NO
CROSS-VENTILATION	(TC1-A03C ONLY) YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

PROJECT
NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE
TOWER C1 APARTMENT TYPES - 1BR

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV. 00

DRAWING NO.
TP5011

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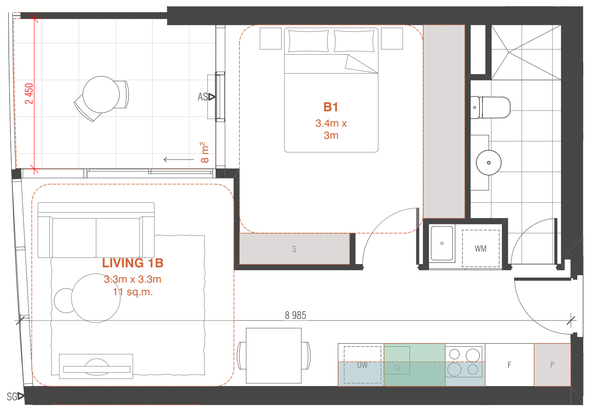
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032



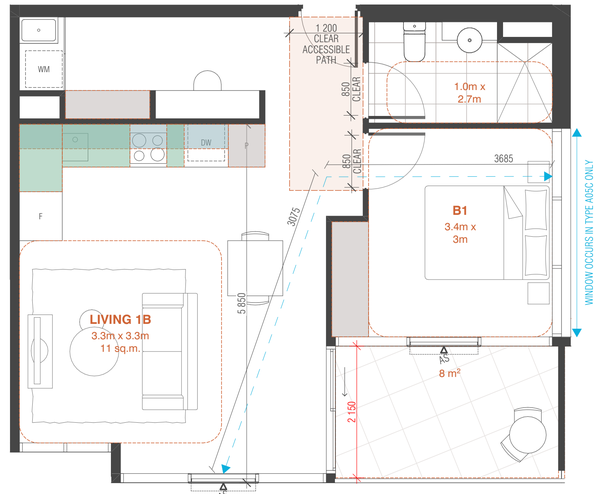
TOWER C1 APT TYPE A04

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-A04	8	1BR + 1BTH
TC1-A04M	9	1BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-A04		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	8
		10 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE A05C ONLY.

TOWER C1 APT TYPE A05 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-A05	4	1BR + 1BTH + 1STD
TC1-A05C	4	1BR + 1BTH + 1STD
TC1-A05M	4	1BR + 1BTH + 1STD

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-A05		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		8 m³

ACCESSIBLE	YES
CROSS-VENTILATION	(TC1-A05C ONLY) YES
EXTERNAL STORAGE CAGE	YES



TOWER C1 APT TYPE A06 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-A06	4	1BR + 1BTH + 1STD

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-A06		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	8
		10 m³

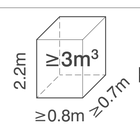
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

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-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE

TOWER C1 APARTMENT TYPES - 1BR

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

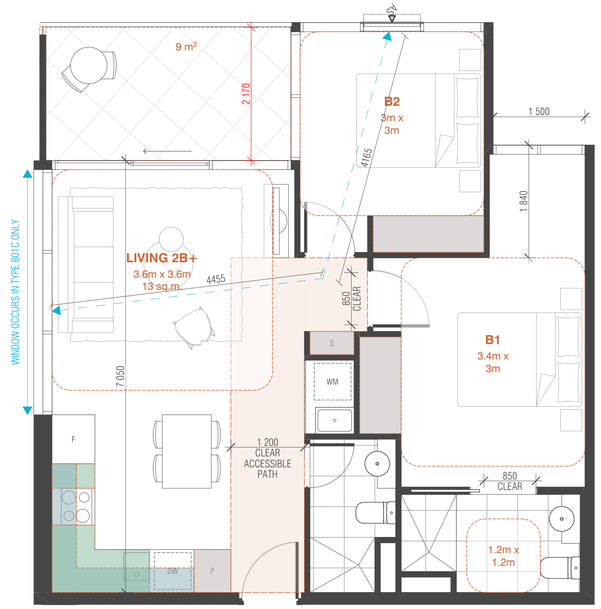
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5012



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE B01C ONLY.

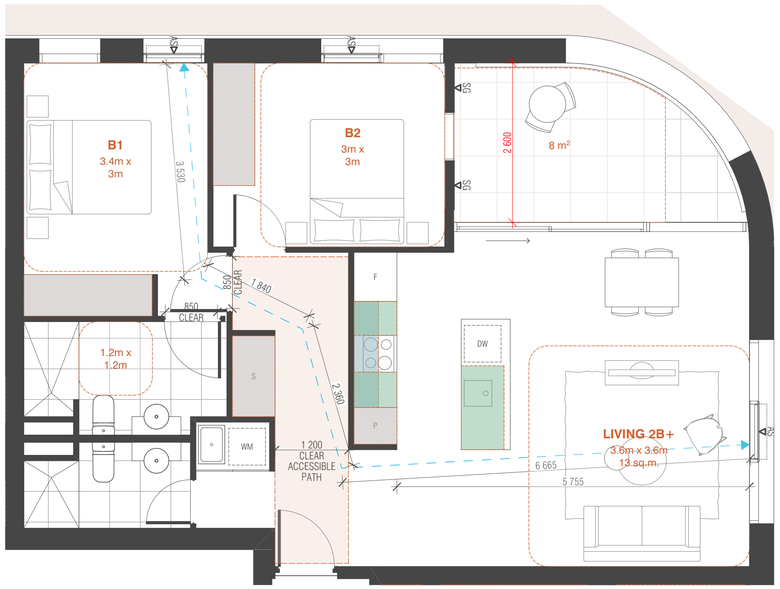
TOWER C1 APT TYPE B01 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B01	7	2BR + 2BTH
TC1-B01C	1	2BR + 2BTH
TC1-B01M	7	2BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		9 m³

ACCESSIBLE		YES
CROSS-VENTILATION	(TC1-B01C ONLY)	YES
EXTERNAL STORAGE CAGE		YES



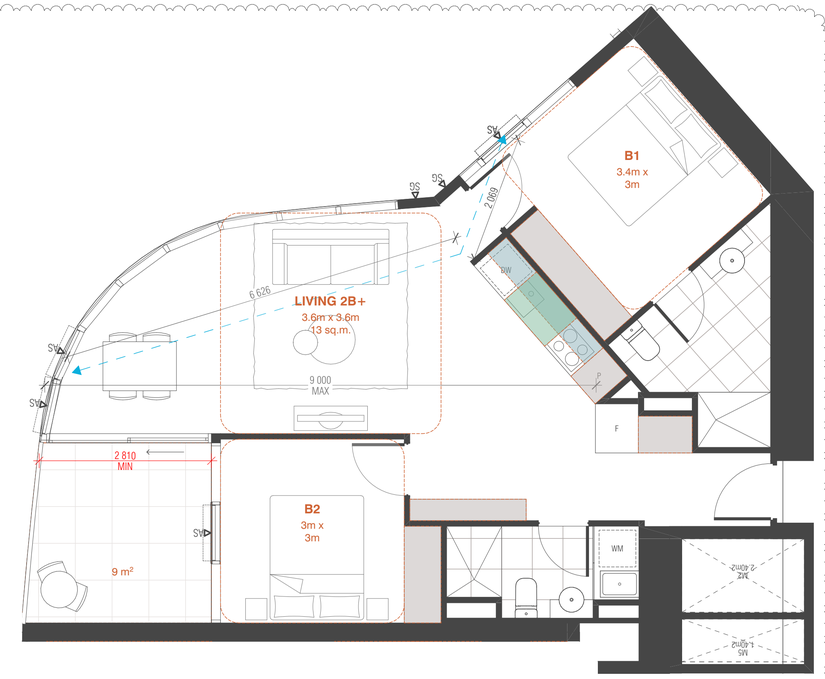
TOWER C1 APT TYPE B02 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B02	2	2BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	10
		12 m³

ACCESSIBLE	YES
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES



TOWER C1 APT TYPE B03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B03	4	2BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B03		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	9
		11 m³

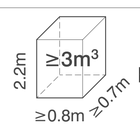
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE TOWER C1 APARTMENT TYPES - 2BR

ISSUE PURPOSE VCAT AMENDED SCHEME

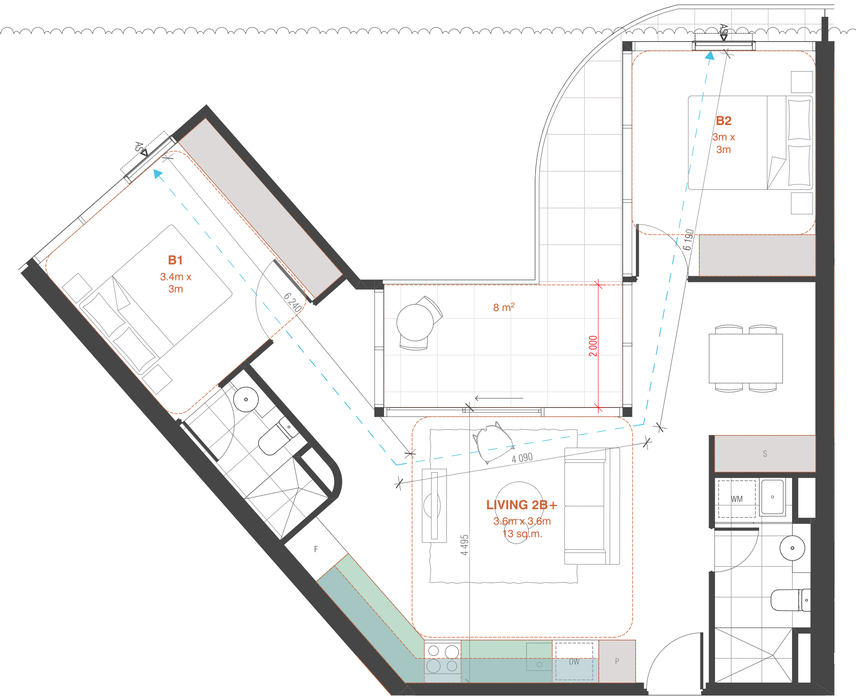
REV. 00

DRAWING NO. TP5013



TOWER C1 APT TYPE B04

SCALE 1:50@A1



TOWER C1 APT TYPE B05

SCALE 1:50@A1



TOWER C1 APT TYPE B06

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B04	1	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B04		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		9 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B05	1	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B05		
	LOW CPD	2
	O/H CPD	2
	TALL CPD	11
		15 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B06	8	2BR + 2BTH
TC1-B06M	8	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B06		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	11
		12 m³

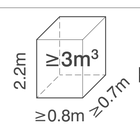
ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

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REVISION

QUALITY ASSURANCE (FK IS A CERTIFIED COMPANY TO ISO 9001-2015)

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER C1 APARTMENT TYPES - 2BR

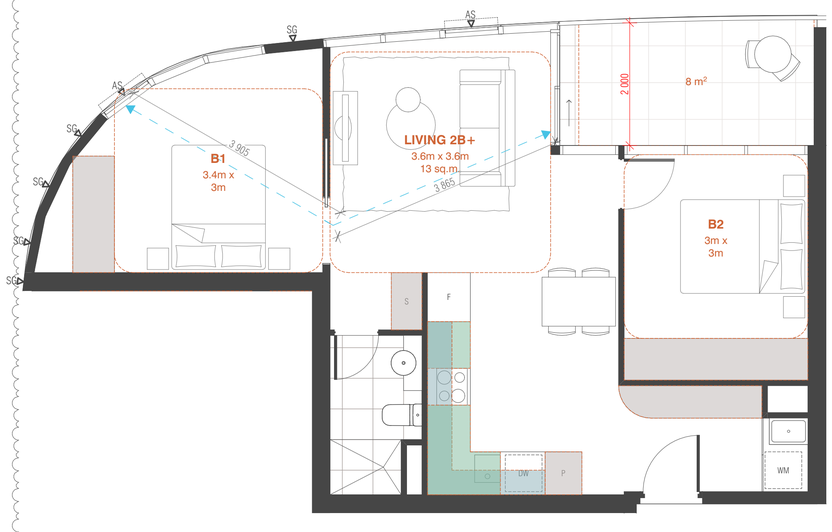
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

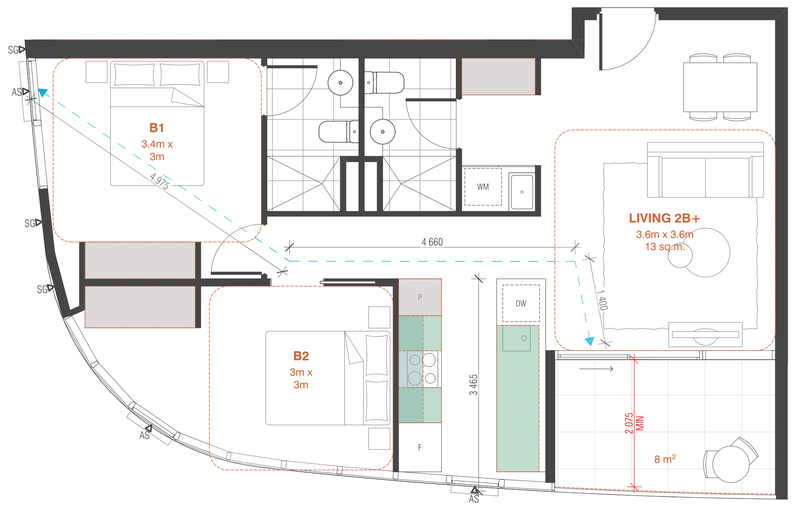
DRAWING NO.

TP5014



TOWER C1 APT TYPE B07

SCALE 1:50@A1



TOWER C1 APT TYPE B08

SCALE 1:50@A1



TOWER C1 APT TYPE B09

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B07	8	2BR + 1BTH
TC1-B07M	8	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B07		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	13
		16 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B08	5	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B08		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	8
		11 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-B09	5	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-B09		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	6
		9 m³

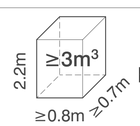
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE

TOWER C1 APARTMENT TYPES - 2BR

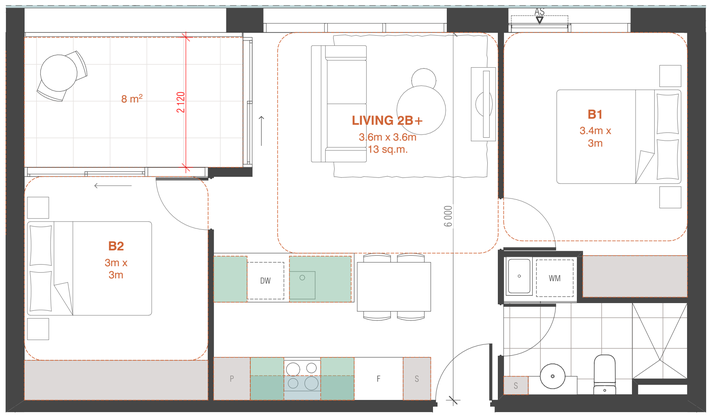
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5015



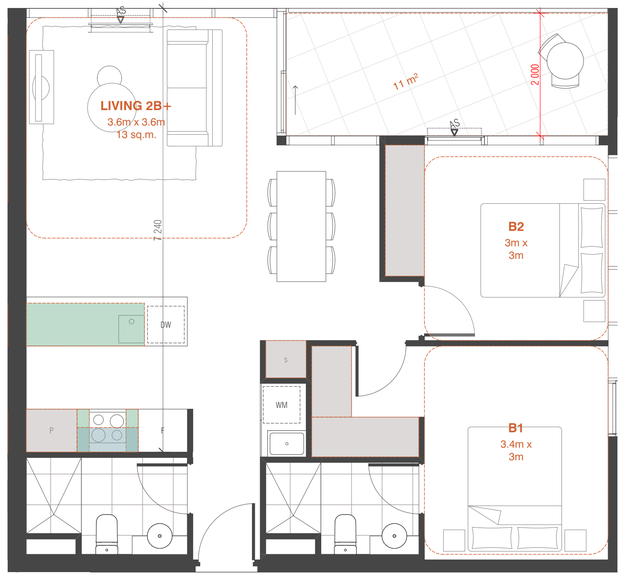
TOWER C1 APT TYPE B10

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B10	2	2BR + 1BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B10		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	10
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES



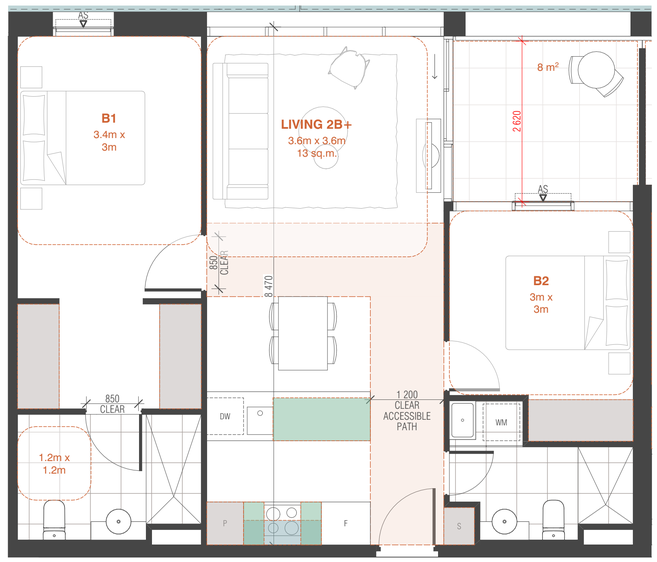
TOWER C1 APT TYPE B11

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B11	6	2BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B11		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	9
		11 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES



TOWER C1 APT TYPE B12 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-B12	4	2BR + 2BTH
TC1-B12M	2	2BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-B12		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	10
		12 m³

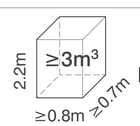
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE

TOWER C1 APARTMENT TYPES - 2BR

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

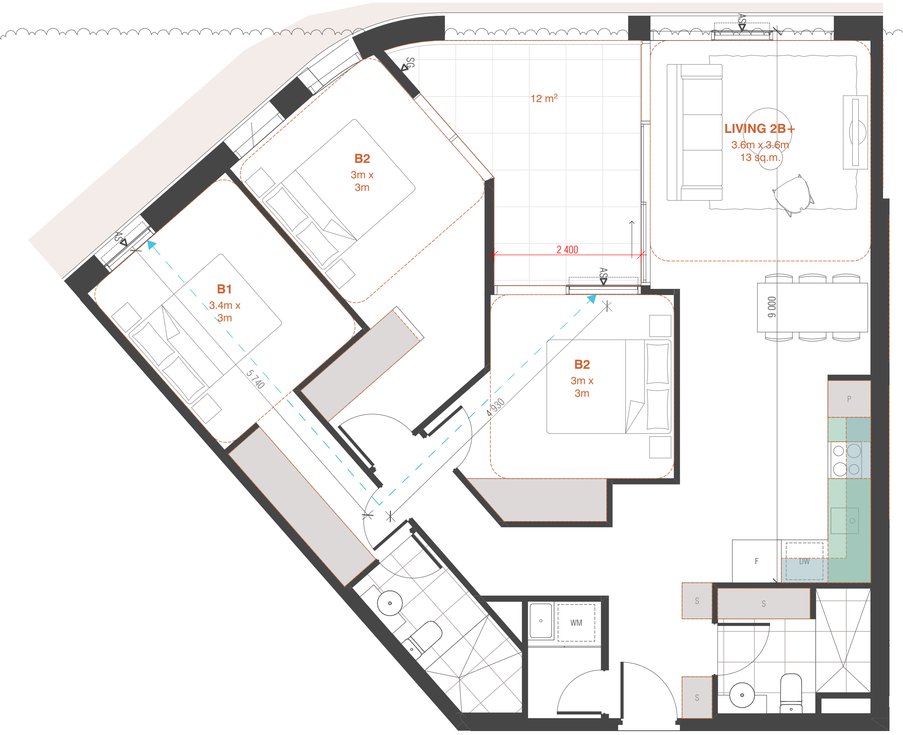
ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

DRAWING NO.

TP5016



TOWER C1 APT TYPE C01

SCALE 1:50@A1



TOWER C1 APT TYPE C02

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C01	2	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	16
		18 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C02	6	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	15
		16 m³

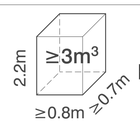
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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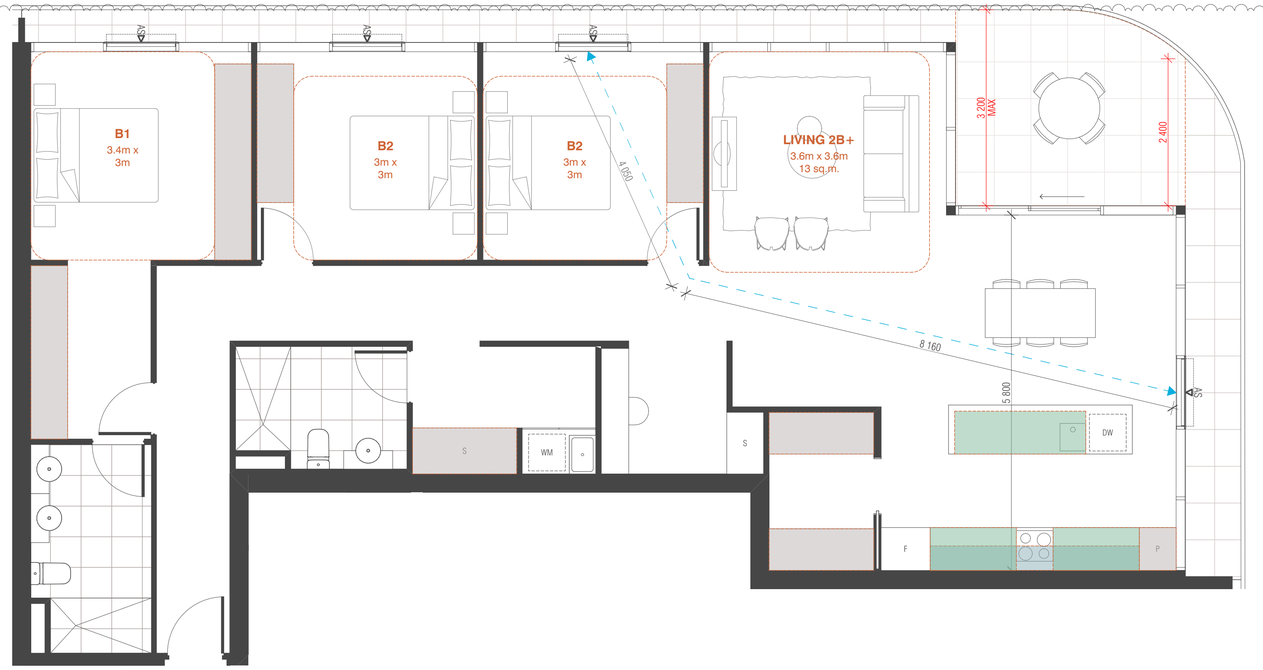
DRAWING TITLE
TOWER C1 APARTMENT TYPES - 3BR

ISSUE PURPOSE
VCAT AMENDED SCHEME

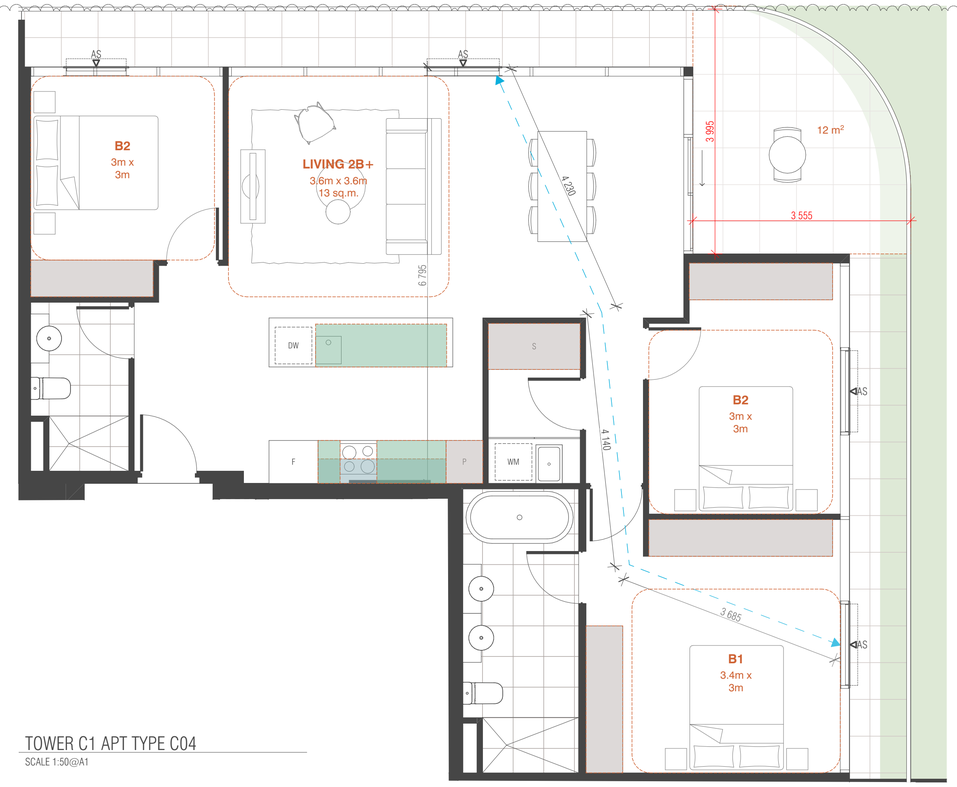
REV. 00

DRAWING NO.
TP5017



TOWER C1 APT TYPE C03

SCALE 1:50@A1



TOWER C1 APT TYPE C04

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C03	1	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C03		
	LOW CPD	3
	O/H CPD	1
	TALL CPD	25
		29 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C04	1	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C04		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	18
		20 m³

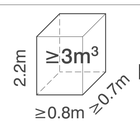
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

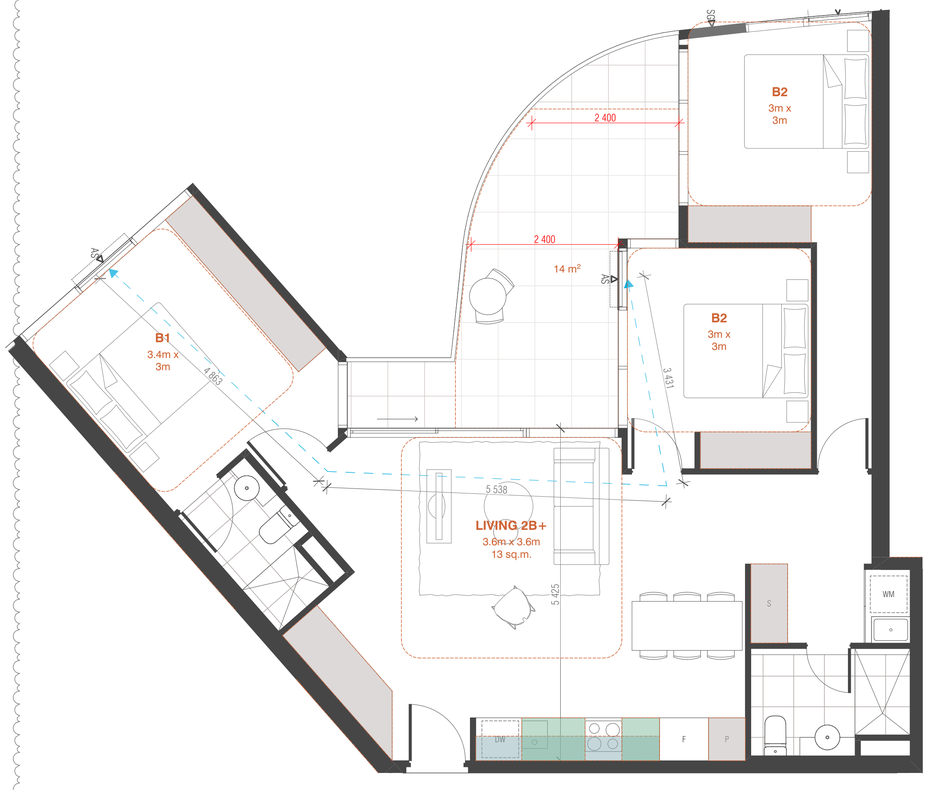
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE: TOWER C1 APARTMENT TYPES - 3BR

ISSUE PURPOSE: VCAT AMENDED SCHEME

REV.: 00

DRAWING NO.: TP5018



TOWER C1 APT TYPE C05
SCALE 1:50@A1



TOWER C1 APT TYPE C06
SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C05	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C05		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	17
		19 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC1-C06	1	3BR + 2BTH
TC1-C06M	1	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC1-C06		
	LOW CPD	2
	O/H CPD	1
	TALL CPD	16
		19 m³

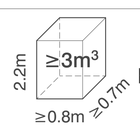
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	NO

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.
-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.
-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF
-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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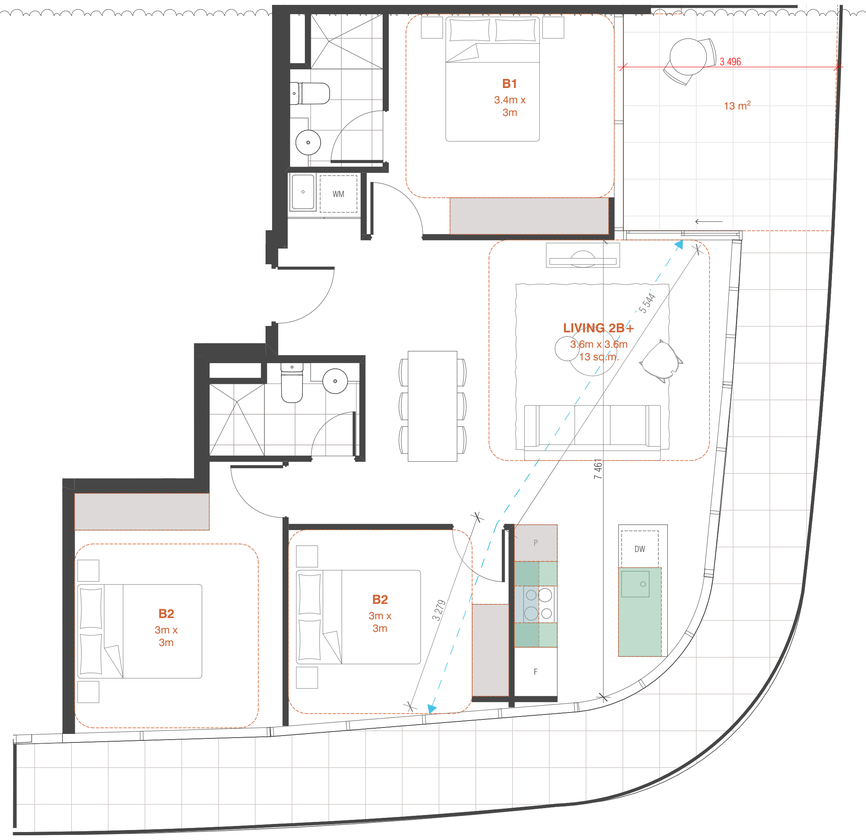
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME	00	TP5019



TOWER C1 APT TYPE C07

SCALE 1:50@A1



TOWER C1 APT TYPE C08

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-C07	1	3BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-C07		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	10
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE		
APT TYPE	QTY	
TC1-C08	1	3BR + 2BTH

APARTMENT INTERNAL STORAGE		
APT TYPE	STORAGE TYPE	VOLUME
TC1-C08		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	10
		12 m³

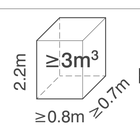
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION		REVISION	
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
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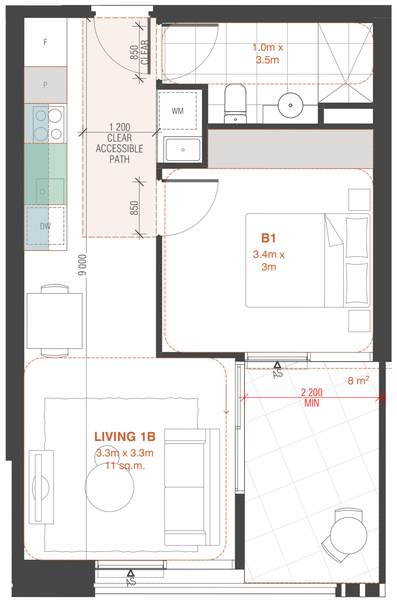
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER C1 APARTMENT TYPES - 3BR	VCAT AMENDED SCHEME	00	TP5020



TOWER C2 APT TYPE A01 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC2-A01	2	1BR + 1BTH
TC2-A01M	2	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC2-A01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	5
		6 m³

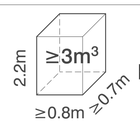
ACCESSIBLE	YES
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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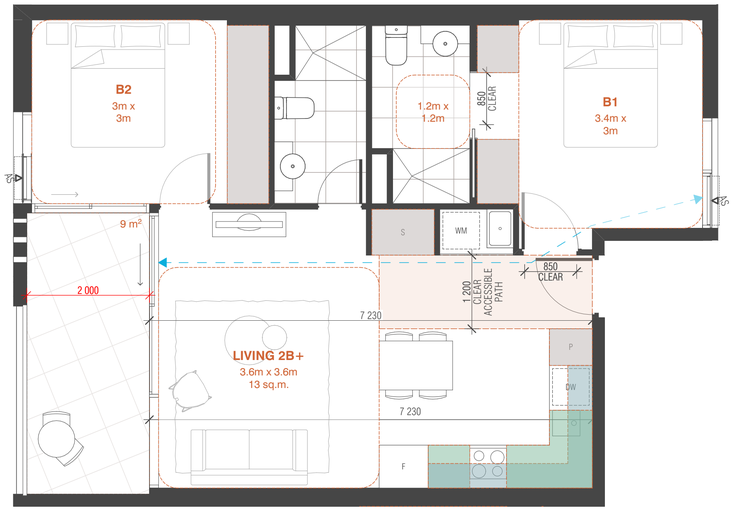
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER C2 APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME	00	TP5021



TOWER C2 APT TYPE B01 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TC2-B01	3	2BR + 2BTH
TC2-B01M	1	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TC2-B01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	11
		13 m³

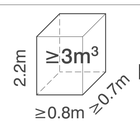
ACCESSIBLE	YES
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

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NORTHCOTE VIC 3070

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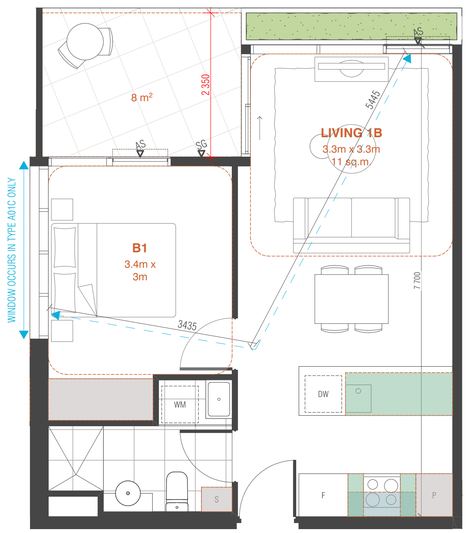
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE TOWER C2 APARTMENT TYPES - 2BR

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP5022



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE A01C ONLY.

TOWER D APT TYPE A01

SCALE 1:50@A1



TOWER D APT TYPE A02

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-A01	9	1BR + 1BTH
TD-A01C	9	1BR + 1BTH
TD-A01M	6	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-A01		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	4
		6 m³

ACCESSIBLE		NO
CROSS-VENTILATION	(TD-A01C ONLY)	YES
EXTERNAL STORAGE CAGE		YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-A02	3	1BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-A02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	7
		8 m³

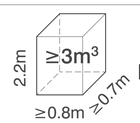
ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.

-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.

-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF

-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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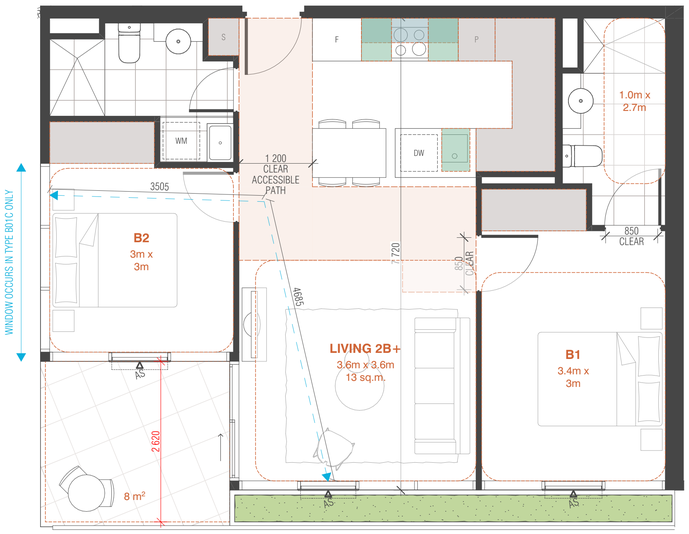
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1	TOWER D APARTMENT TYPES - 1BR	VCAT AMENDED SCHEME	00	TP5023



*CORNER WINDOW & CROSS VENTILATION IS ACHIEVED IN TYPE B01C ONLY.

TOWER D APT TYPE B01 (ACCESSIBLE)

SCALE 1:50@A1

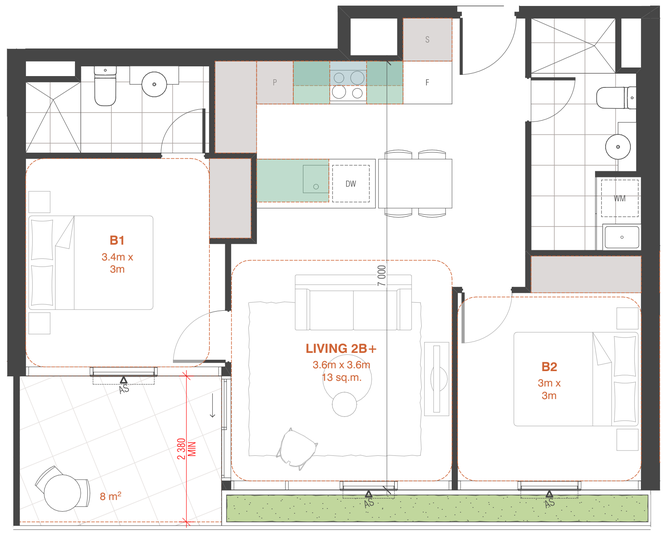
APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-B01	4	2BR + 2BTH
TD-B01C	3	2BR + 2BTH
TD-B01M	7	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-B01		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	13
		14 m³

ACCESSIBLE	YES
CROSS-VENTILATION (TD-B01C ONLY)	YES
EXTERNAL STORAGE CAGE	NO



TOWER D APT TYPE B02

SCALE 1:50@A1

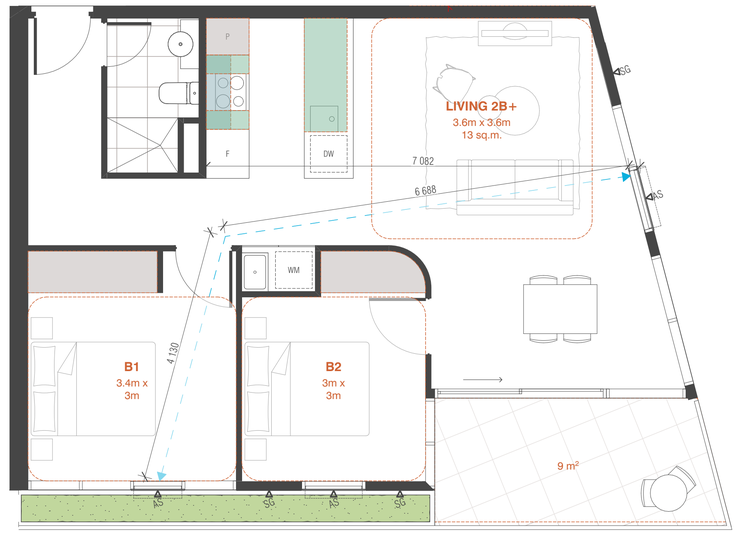
APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-B02	4	2BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-B02		
	LOW CPD	1
	O/H CPD	1
	TALL CPD	10
		11 m³

ACCESSIBLE	NO
CROSS-VENTILATION	NO
EXTERNAL STORAGE CAGE	YES



TOWER D APT TYPE B03

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-B03	3	2BR + 1BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-B03		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	7
		9 m³

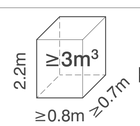
ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

-ALL APARTMENTS' SHOWERS ARE HOBLESS.
-ALL ADAPTABLE BATHROOMS HINGE DOOR TO HAVE READILY REMOVABLE HINGE.
-ALL APARTMENTS' CONDENSERS LOCATED ON ROOF
-ALL ACCESSIBLE APARTMENTS ENTRY DOOR HAS A MINIMUM 920MM DOOR LEAF WITH MINIMUM 850MM CLEAR

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN 13.09.2021

REVISION

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VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

DRAWING TITLE

TOWER D APARTMENT TYPES - 2BR

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ISSUE PURPOSE

VCAT AMENDED SCHEME

REV. 00

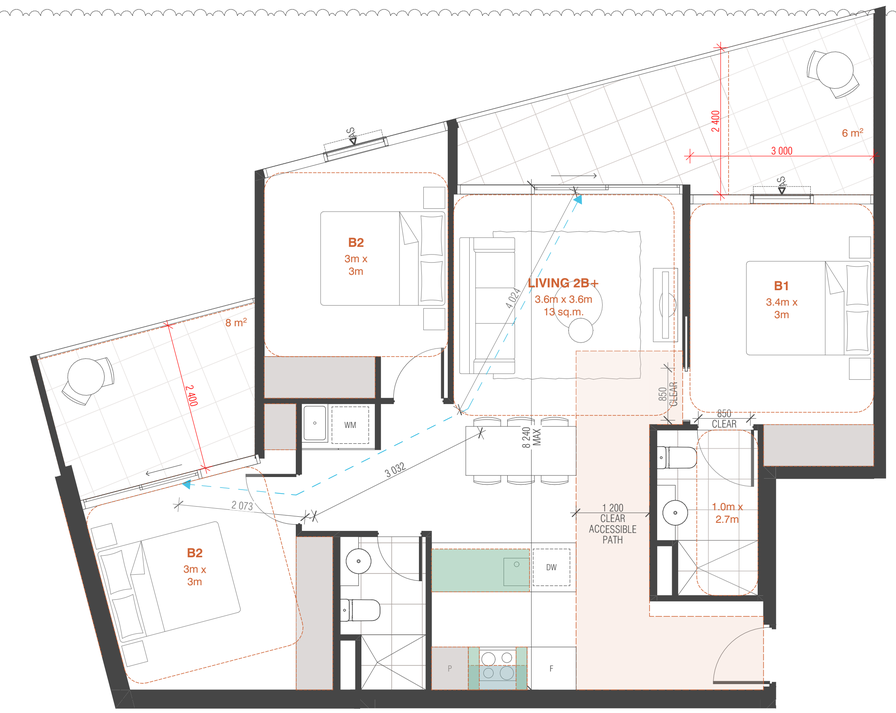
DRAWING NO.

TP5024



TOWER D APT TYPE C01

SCALE 1:50@A1



TOWER D APT TYPE C02 (ACCESSIBLE)

SCALE 1:50@A1

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-C01	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-C01		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	10
		12 m³

ACCESSIBLE	NO
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

APARTMENT TYPES SCHEDULE

APT TYPE	QTY	
TD-C02	3	3BR + 2BTH

APARTMENT INTERNAL STORAGE

APT TYPE	STORAGE TYPE	VOLUME
TD-C02		
	LOW CPD	1
	O/H CPD	0
	TALL CPD	11
		13 m³

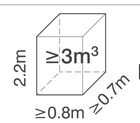
ACCESSIBLE	YES
CROSS-VENTILATION	YES
EXTERNAL STORAGE CAGE	YES

CLAUSE 58 ASSESSMENT LEGEND

FULL HEIGHT STORAGE

UNDER BENCH STORAGE

OVERHEAD STORAGE



EXTERNAL STORAGE CAGE PROVISION

GENERAL NOTES

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BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN	13.09.2021

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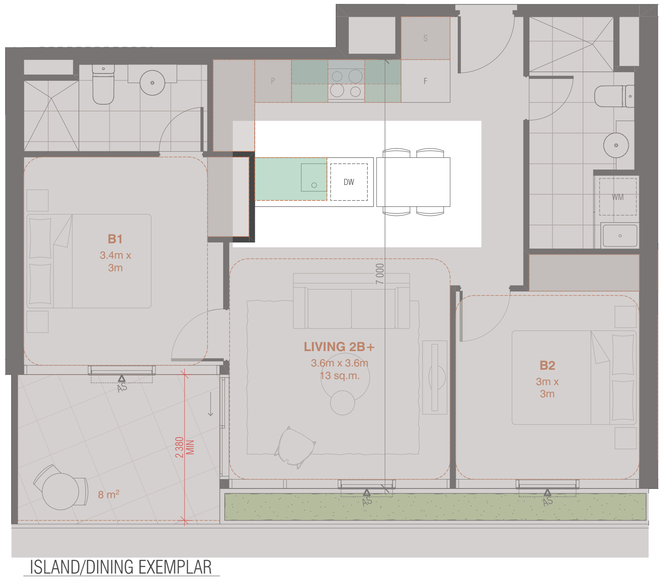
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:50@A1

DRAWING TITLE: TOWER D APARTMENT TYPES - 3BR

ISSUE PURPOSE: VCAT AMENDED SCHEME

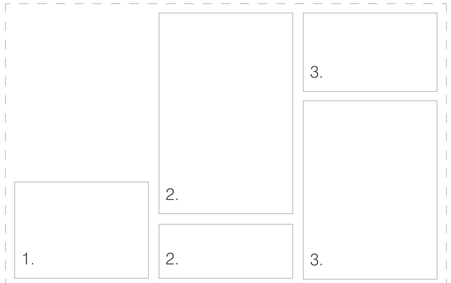
REV.: 00

DRAWING NO.: TP5025

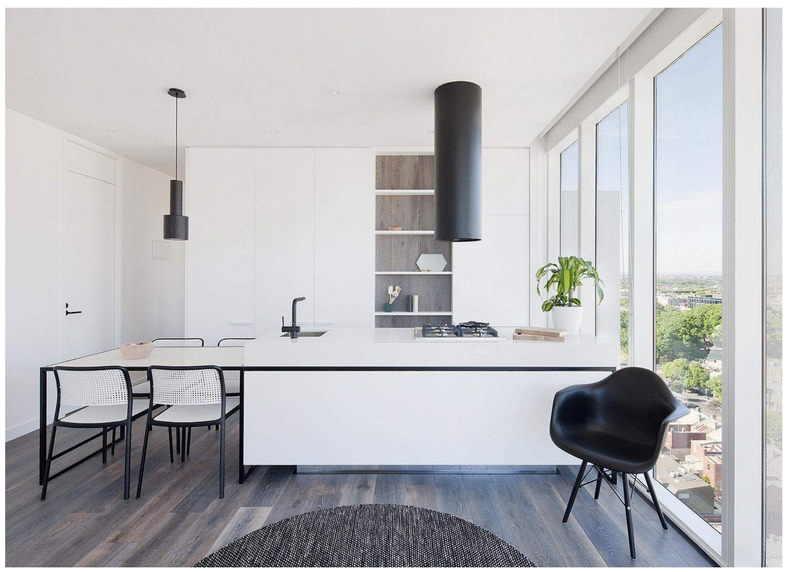


ISLAND/DINING EXEMPLAR

SCALE 1:50@A1



1. **JCBA** Upper House
2. **FK + Carr** Australia 108
3. **Thomas Archer** Bentleigh Residence











BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT

NORTHCOTE PLAZA
25 SEPARATION STREET
NORTHCOTE VIC 3070

FENDER KATSALIDIS
WWW.FKAUSTRALIA.COM
2 RIVERSIDE QUAY, SOUTHBANK
VICTORIA 3006 AUSTRALIA
TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE	DRAWING TITLE	ISSUE PURPOSE	REV.	DRAWING NO.
VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	ISLAND BENCH / DINING EXEMPLAR	VCAT AMENDED SCHEME	00	TP5026

CLAUSE 58 MASTER SCHEDULE

APT TYPE		APT QTY	D17 COMPLIANCE ACCESSIBILITY	D27 COMPLIANCE VENTILATION	INTERNAL STORAGE AVAILABLE	EXTERNAL STORAGE	CEILING HEIGHT
TC1-C01	3BR + 2BTH	2	NO	YES	18m³	NO	2700mm
TC1-C02	3BR + 2BTH	6	NO	YES	16m³	YES	2700mm
TC1-C03	3BR + 2BTH	1	NO	YES	29m³	NO	2700mm
TC1-C04	3BR + 2BTH	1	NO	YES	20m³	NO	2700mm
TC1-C05	3BR + 2BTH	3	NO	YES	19m³	NO	2700mm
TC1-C06	3BR + 2BTH	1	NO	YES	19m³	NO	2700mm
TC1-C06M	3BR + 2BTH	1	NO	YES	19m³	NO	2700mm
TC1-C07	3BR + 2BTH	1	NO	YES	12m³	YES	2700mm
TC1-C08	3BR + 2BTH	1	NO	YES	12m³	YES	2700mm
TC2-A01	1BR + 1BTH	2	YES	NO	6m³	YES	2700mm
TC2-A01M	1BR + 1BTH	2	YES	NO	6m³	YES	2700mm
TC2-B01	2BR + 2BTH	3	YES	YES	13m³	YES	2700mm
TC2-B01M	2BR + 2BTH	1	YES	YES	13m³	YES	2700mm
TD-A01	1BR + 1BTH	9	NO	NO	6m³	YES	2700mm
TD-A01C	1BR + 1BTH	9	NO	YES	6m³	YES	2700mm
TD-A01M	1BR + 1BTH	6	NO	NO	6m³	YES	2700mm
TD-A02	1BR + 1BTH	3	NO	NO	8m³	YES	2700mm
TD-B01	2BR + 2BTH	4	YES	NO	14m³	NO	2700mm
TD-B01C	2BR + 2BTH	3	YES	YES	14m³	NO	2700mm
TD-B01M	2BR + 2BTH	7	YES	NO	14m³	NO	2700mm
TD-B02	2BR + 2BTH	4	NO	NO	11m³	YES	2700mm
TD-B03	2BR + 1BTH	3	NO	YES	9m³	YES	2700mm
TD-C01	3BR + 2BTH	3	NO	YES	12m³	YES	2700mm
TD-C02	3BR + 2BTH	3	YES	YES	13m³	YES	2700mm
	TOTAL UNITS	**605**	**55%**	**35%**			

D17 ACCESSIBILITY COMPLIANCE

APT TYPE	QTY
TA-A01	9
TA-A01M	6
TA-B01	6
TA-B01M	6
TA-B06	3
TA-B07	7
TB-A01	43
TB-A01M	70
TB-A04	2
TB-A05	15
TB-A05 M	1
TB-B02	30
TB-B02M	13
TB-B03	28
TB-B04	15
TB-B04M	1
TC1-A01	6
TC1-A01M	6
TC1-A02	2
TC1-A05	4
TC1-A05C	4
TC1-A05M	4
TC1-A06	4
TC1-B01	7
TC1-B01C	1
TC1-B01M	7
TC1-B02	2
TC1-B12	4
TC1-B12M	2
TC2-A01	2
TC2-A01M	2
TC2-B01	3
TC2-B01M	1
TD-B01	4
TD-B01C	3
TD-B01M	7
TD-C02	3
	333

D27 NATURAL VENTILATION COMPLIANCE

APT TYPE	QTY
TA-B02	9
TA-B03	4
TA-B03M	4
TA-B05	2
TA-B05M	2
TA-B09	9
TA-C01	3
TA-C03	3
TA-B03	30
TB-B01	30
TB-B03	28
TC1-A03C	2
TC1-A05C	4
TC1-B01C	1
TC1-B02	2
TC1-B03	4
TC1-B04	1
TC1-B05	1
TC1-B07	8
TC1-B07M	8
TC1-B08	5
TC1-B09	5
TC1-B11	6
TC1-C01	2
TC1-C02	6
TC1-C03	1
TC1-C04	1
TC1-C05	3
TC1-C06	1
TC1-C06M	1
TC1-C07	1
TC1-C08	1
TC2-B01	3
TC2-B01M	1
TD-A01C	9
TD-B01C	3
TD-B03	3
TD-C01	3
TD-C02	3
	213

TC1-B07M	2BR + 1BTH	8	NO	YES	16m³	NO	2700mm
TC1-B08	2BR + 2BTH	5	NO	YES	11m³	YES	2700mm
TC1-B09	2BR + 1BTH	5	NO	YES	9m³	YES	2700mm
TC1-B10	2BR + 1BTH	2	NO	NO	12m³	YES	2700mm
TC1-B11	2BR + 2BTH	6	NO	YES	11m³	YES	2700mm
TC1-B12	2BR + 2BTH	4	YES	NO	12m³	YES	2700mm
TC1-B12M	2BR + 2BTH	2	YES	NO	12m³	YES	2700mm

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

REVISION

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PROJECT

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NORTHCOTE VIC 3070

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TELEPHONE: +61 3 8696 3888
FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

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VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	CLAUSE 58 MASTER SCHEDULE	VCAT AMENDED SCHEME	00	TP5100

APARTMENT STORAGE SCHEDULE (CLAUSE 58 REQUIREMENT)

APT TYPE	APT QTY	TOTAL STORAGE REQUIRED	INTERNAL STORAGE AVAILABLE	EXTERNAL STORAGE REQUIRED	**STORAGE CAGES REQUIED**
TA-A01	9	10m³	6m³	4m³	9 Units
TA-A01M	6	10m³	6m³	4m³	6 Units
TA-A02	3	10m³	11m³	0m³	0 Units
TA-A03	4	10m³	9m³	1m³	4 Units
TA-A04	1	10m³	9m³	1m³	1 Units
TA-B01	6	14m³	12m³	2m³	6 Units
TA-B01M	6	14m³	12m³	2m³	6 Units
TA-B02	9	14m³	9m³	5m³	9 Units
TA-B03	4	14m³	9m³	5m³	4 Units
TA-B03M	4	14m³	9m³	5m³	4 Units
TA-B04	4	14m³	10m³	4m³	4 Units
TA-B05	2	14m³	9m³	5m³	2 Units
TA-B05M	2	14m³	9m³	5m³	2 Units
TA-B06	3	14m³	16m³	0m³	0 Units
TA-B07	7	14m³	12m³	2m³	7 Units
TA-B08	9	14m³	12m³	2m³	9 Units
TA-B09	9	14m³	9m³	5m³	9 Units
TA-C01	3	18m³	12m³	6m³	3 Units
TA-C02	3	18m³	13m³	5m³	3 Units
TA-C03	3	18m³	18m³	0m³	0 Units
TB-A01	43	10m³	6m³	4m³	43 Units
TB-A01M	70	10m³	6m³	4m³	70 Units
TB-A02	15	10m³	13m³	0m³	0 Units
TB-A03	30	10m³	7m³	3m³	30 Units
TB-A04	2	10m³	6m³	4m³	2 Units
TB-A05	15	10m³	11m³	0m³	0 Units
TB-A05 M	1	10m³	11m³	0m³	0 Units
TB-B01	30	14m³	10m³	4m³	30 Units
TB-B02	30	14m³	9m³	5m³	30 Units
TB-B02M	13	14m³	9m³	5m³	13 Units
TB-B03	28	14m³	10m³	4m³	28 Units
TB-B04	15	14m³	18m³	0m³	0 Units
TB-B04M	1	14m³	18m³	0m³	0 Units
TC1-A01	6	10m³	9m³	1m³	6 Units
TC1-A01M	6	10m³	9m³	1m³	6 Units
TC1-A02	2	10m³	7m³	3m³	2 Units
TC1-A03	4	10m³	6m³	4m³	4 Units
TC1-A03C	2	10m³	6m³	4m³	2 Units
TC1-A03M	4	10m³	6m³	4m³	4 Units
TC1-A04	8	10m³	10m³	0m³	0 Units
TC1-A04M	9	10m³	10m³	0m³	0 Units
TC1-A05	4	10m³	8m³	2m³	4 Units
TC1-A05C	4	10m³	8m³	2m³	4 Units
TC1-A05M	4	10m³	8m³	2m³	4 Units
TC1-A06	4	10m³	10m³	0m³	0 Units
TC1-B01	7	14m³	9m³	5m³	7 Units
TC1-B01C	1	14m³	9m³	5m³	1 Units
TC1-B01M	7	14m³	9m³	5m³	7 Units
TC1-B02	2	14m³	12m³	2m³	2 Units
TC1-B03	4	14m³	11m³	3m³	4 Units
TC1-B04	1	14m³	9m³	5m³	1 Units
TC1-B05	1	14m³	15m³	0m³	0 Units
TC1-B06	8	14m³	12m³	2m³	8 Units
TC1-B06M	8	14m³	12m³	2m³	8 Units
TC1-B07	8	14m³	16m³	0m³	0 Units
TC1-B07M	8	14m³	16m³	0m³	0 Units
TC1-B08	5	14m³	11m³	3m³	5 Units
TC1-B09	5	14m³	9m³	5m³	5 Units
TC1-B10	2	14m³	12m³	2m³	2 Units
TC1-B11	6	14m³	11m³	3m³	6 Units
TC1-B12	4	14m³	12m³	2m³	4 Units
TC1-B12M	2	14m³	12m³	2m³	2 Units

APARTMENT STORAGE SCHEDULE (CLAUSE 58 REQUIREMENT)

APT TYPE	APT QTY	TOTAL STORAGE REQUIRED	INTERNAL STORAGE AVAILABLE	EXTERNAL STORAGE REQUIRED	**STORAGE CAGES REQUIED**
TC1-C01	2	18m³	18m³	0m³	0 Units
TC1-C02	6	18m³	16m³	2m³	6 Units
TC1-C03	1	18m³	29m³	0m³	0 Units
TC1-C04	1	18m³	20m³	0m³	0 Units
TC1-C05	3	18m³	19m³	0m³	0 Units
TC1-C06	1	18m³	19m³	0m³	0 Units
TC1-C06M	1	18m³	19m³	0m³	0 Units
TC1-C07	1	18m³	12m³	6m³	1 Units
TC1-C08	1	18m³	12m³	6m³	1 Units
TC2-A01	2	10m³	6m³	4m³	2 Units

STORAGE CAGE SUMMARY

CAGE SIZE	LEVEL	QTY
3m3		
	BASEMENT 3	178
		178
4m3		
	BASEMENT 3	62
	BASEMENT 2	105
		167
5m3		
	BASEMENT 3	175
		175
6m3		
	BASEMENT 2	1
		1
9m3		
	BASEMENT 3	1
		1
		522

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

00	VCAT AMENDED SCHEME	VN	13.09.2021

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PROJECT

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25 SEPARATION STREET
NORTHCOTE VIC 3070

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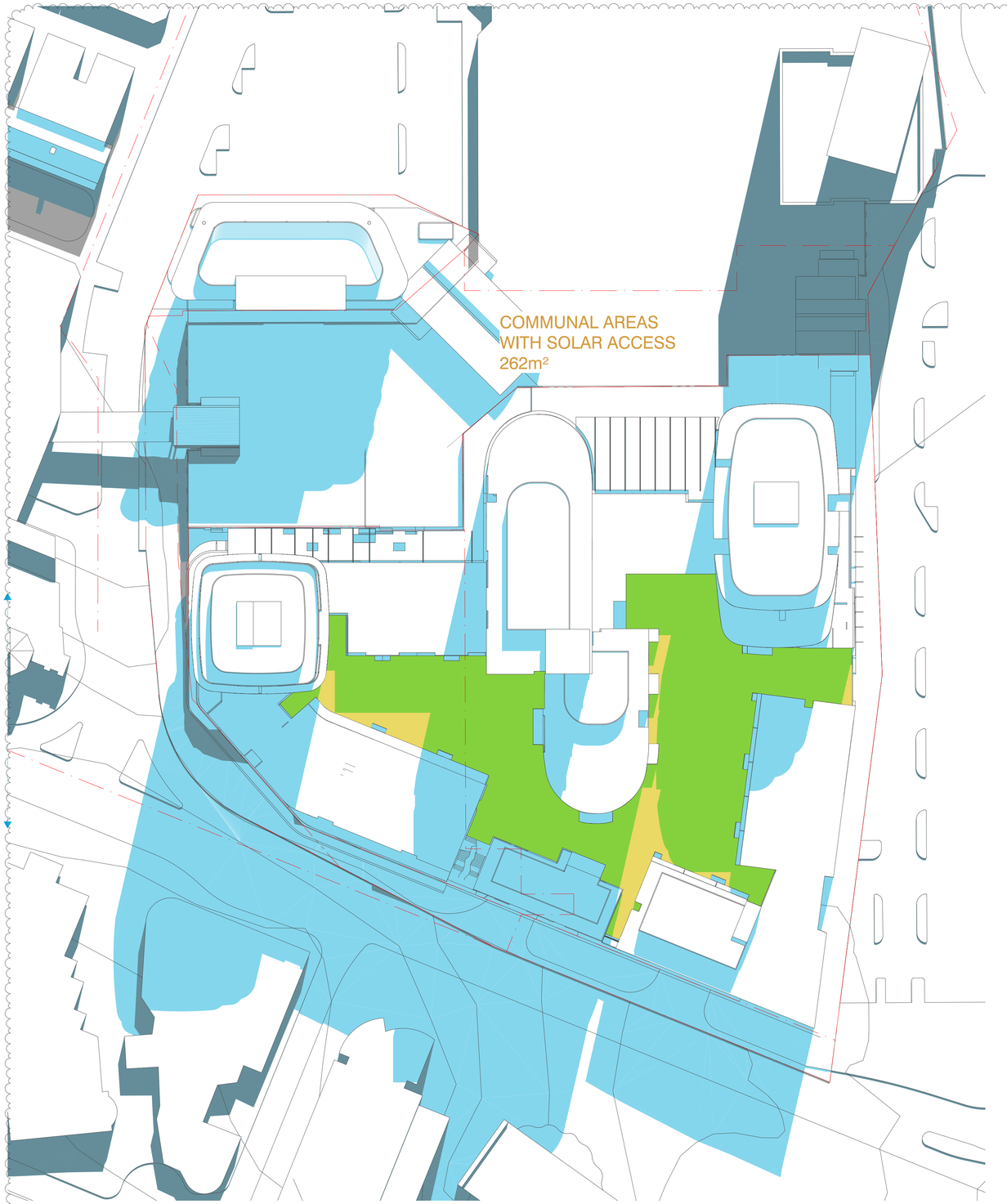
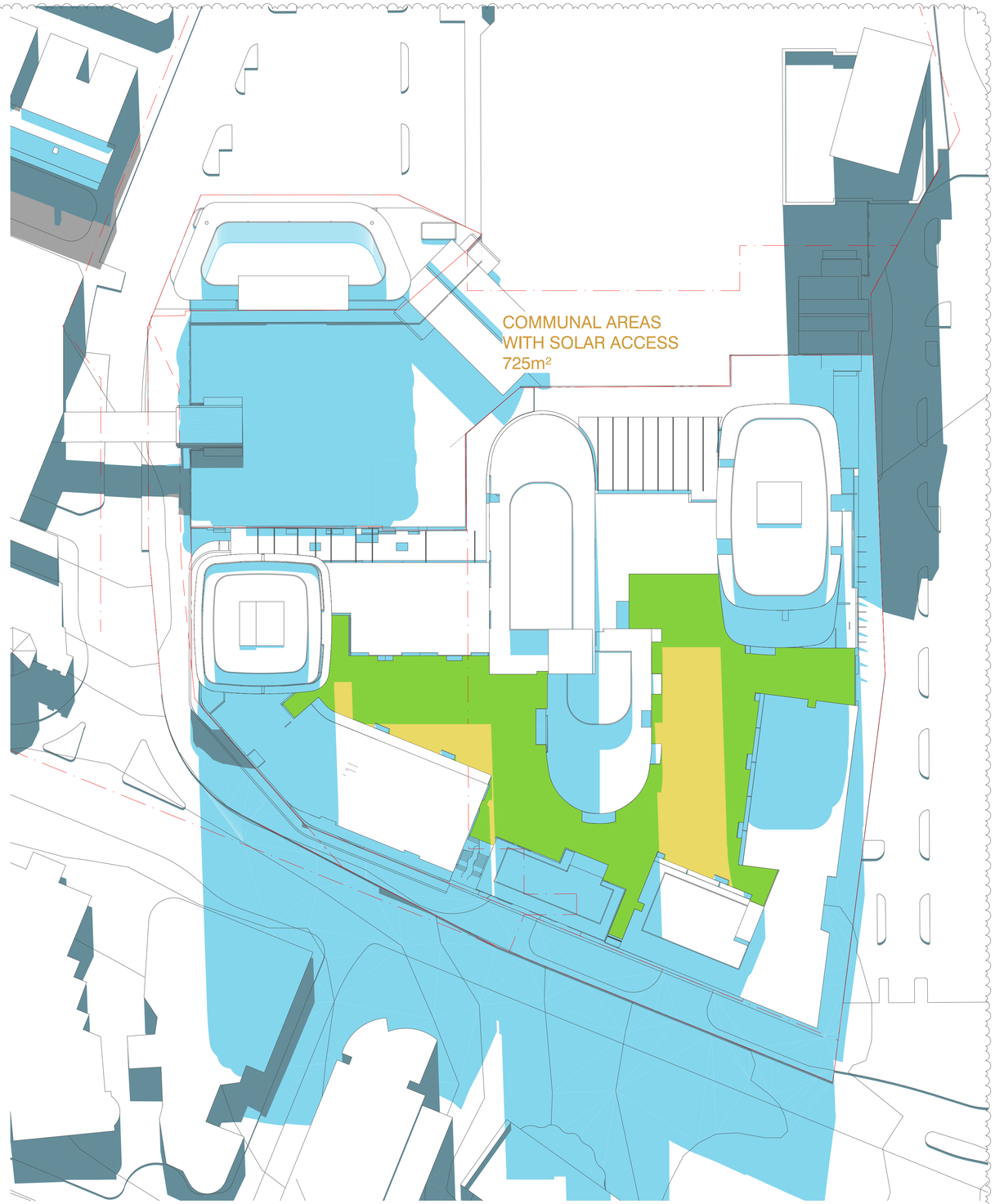
VN	13.09.2021	KT	16.09.2021	21045	N.T.S.@A1	CLAUSE 58 STORAGE SCHEDULE	VCAT AMENDED SCHEME	00	**TP5101**



SH04 - JUNE 21 - 1pm
SCALE 1:500@A1



SH05 - JUNE 21 - 2pm
SCALE 1:500@A1

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION			REVISION
00	VCAT AMENDED SCHEME	VN 13.09.2021	

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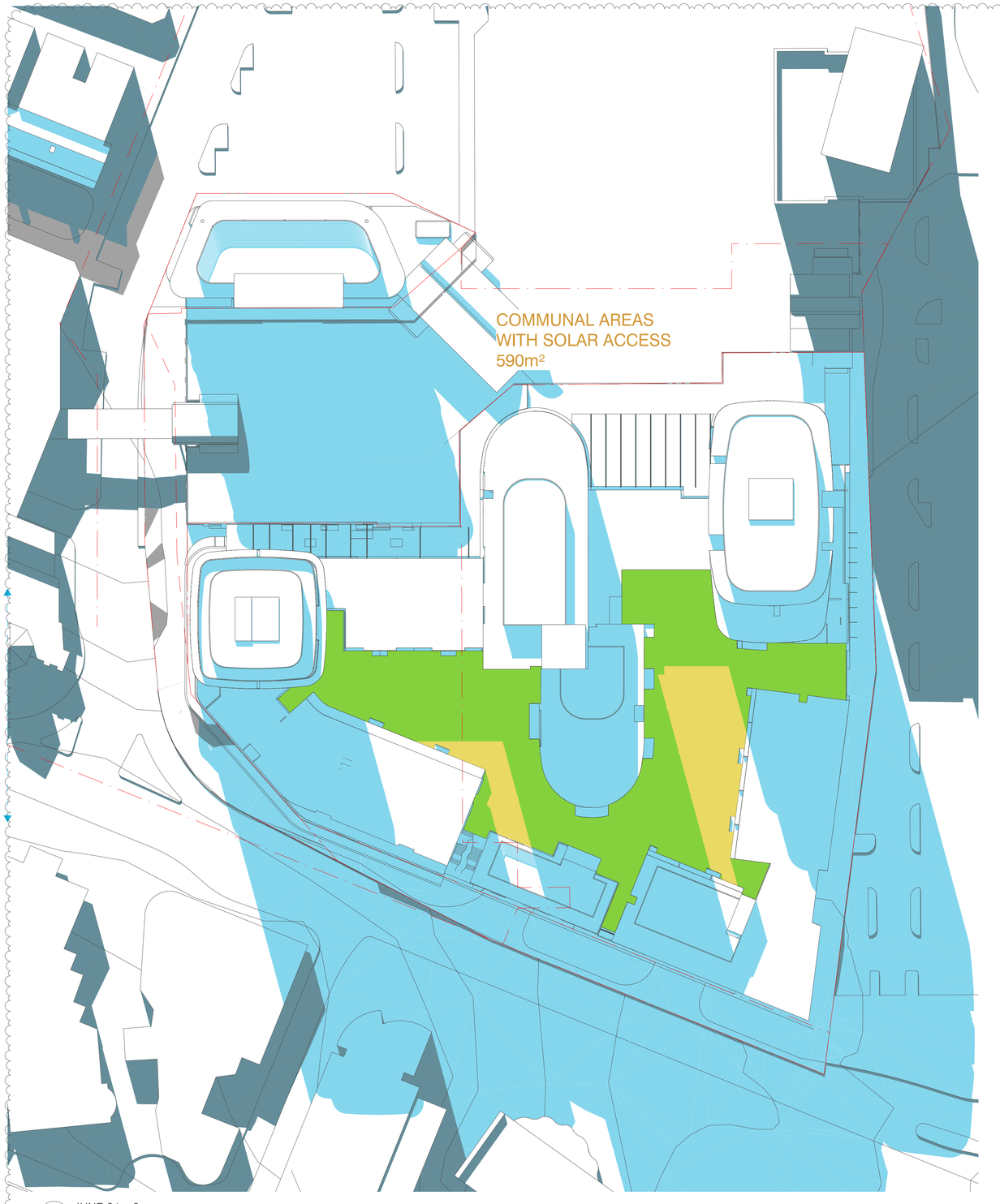
DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:500@A1

DRAWING TITLE OUTDOOR COMMUNAL AREA SOLAR ANALYSIS - JUNE

ISSUE PURPOSE VCAT AMENDED SCHEME

REV. 00

DRAWING NO. TP5200



SH06 - JUNE 21 - 3pm
SCALE 1:500@A1

BIMcloud: BIMSERVER23 - BIMcloud Basic for ARCHICAD 23/21045 Northcote Plaza (T&P)/21045 General

REVISION

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DRAWN	DATE	CHECKED	PLOT DATE	JOB NO.	SCALE
VN	13.09.2021	KT	16.09.2021	21045	1:500@A1

DRAWING TITLE
OUTDOOR COMMUNAL AREA SOLAR ANALYSIS - JUNE

ISSUE PURPOSE
VCAT AMENDED SCHEME

REV.
00

DRAWING NO.
TP5201

ATTACHMENT B

Compass Bore Logs

compassenvironmental

Logged by	: DR & RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 0.7 m

Bore ID: B1

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 5 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (150mm)
0.2	B1/0.2	0.0			FILL: clayey sand, fine to coarse-grained, pale brown, dry, low plasticity, some fine to coarse-grained gravels, some charcoal fragments, no odour, no staining, no visible asbestos containing material
0.4	B1/0.4	0.0			
0.6	B1/0.6	0.0			
0.8					Refusal on rock at 0.7m BGL
1.0					

compassenvironmental

Logged by	: DR & RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 1.4 m

BORE ID: B2

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 5 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (140mm)
0.2	B2/0.2	0.0			FILL: sand, fine to coarse-grained, pale brown, dry, soft, some fine to coarse-grained gravels, no odour, no staining, no visible asbestos containing material
0.4	B2/0.5	0.0			FILL: sandy clay, low plasticity, white/brown/red/grey, dry, loose, no odour, no stainnig, no visible asbestos containnig material
0.6					
0.8					
1.0	B2/1.0	0.0			FILL: sand, fine to coarse-grained, pale brown, dry, soft, no odour, no staining, no visible asbestos containing material
					FILL: gravels, grey/brown, dry, no odour, no staining, no visible asbestos containing material
1.2	B2/1.2	0.0		SS	SILTSTONE (weathered): red, hard, no odour, no staining
1.4					Refusal on rock at 1.4m BGL
1.6					

09-07-2022 S:\2021\21131-21140\21135 Time & Place Northcote\6. Field Data\1. Soil\2. Geographic Logs\21135 B2.bor

compassenvironmental

Logged by	: DR & RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 0.8 m

BORE ID: B3

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 5 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (130mm)
0.2	B3/0.3	0.0		SS	SILTSTONE (weathered): yellow/white/grey/red, dry, hard, no odour, no staining
0.4					
0.6	B3/0.6	0.0			
0.8					Refusal on rock at 0.8m BGL
1.0					

compassenvironmental

Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 0.7 m

BORE ID: B4

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (135mm)
0.2	B4/0.2	0.7			FILL: sandy gravels, fine to coarse-grained, sub-rounded to sub-angular, slightly moist, fine to medium-grained sands, no odour, no staining
0.4	B4/0.5	0.7		SS	SILTSTONE (extremely weathered): brown/grey/orange, dry, no odour, no staining
0.6					
0.8					Refusal on rock at 0.7m BGL

09-07-2022 S:\2021\21131-21140\21135 Time & Place Northcote\6. Field Data\1. Soil\2. Geographic Logs\21135 B4.bor

compassenvironmental

Logged by : RB
Checked by : SH
Drilling contractor : Statewide
Drilling method : PushTube
Sampling method : Grab
Total depth : 0.9 m

BORE ID: B5

Project number : 21135
Client : TIme & Place
Location : Northcote
Date : 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (110mm)
0.2	B5/0.2	0.9			FILL: sandy gravels, fine to coarse-grained, sub-rounded to sub-angular, slightly moist, fine to medium-grained sands, no odour, no staining
0.4				SS	SILTSTONE (extremely weathered): red/brown/orange/grey, dry, no odour, no staining
0.6					
0.8	B5/0.7	0.8			
1.0					Refusal on rock at 0.9m BGL

compassenvironmental

Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 0.6 m

BORE ID: B6

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (120mm)
					FILL: gravelly silty sand, fine to medium-grained, dark brown, loose, slightly moist, fine to coarse grained gravels, sub-rounded to sub-angular, no odour, no staining
0.2	B6/0.2	0.6			SILTSTONE (extremely weathered): red/brown/orange/grey, dry, no odour, no staining
0.4	B6/0.4	0.8		SS	
0.6					Refusal on rock at 0.6m BGL
0.8					

compassenvironmental

Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: P.T + S.A
Sampling method	: Grab
Total depth	: 1.0 m

BORE ID: B7

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (250mm)
0.2	B7/0.35 B080822A B207/0.35	0.7			FILL: sandy gravelly clay, low plasticity, brown/grey/red, dry to slightly moist, fine to coarse grained-gravels, fine to medium-grained sands, some red bricks, no odour, no staining
0.4					
0.6					
0.8	B7/0.9	0.7			
1.0					Refusal at 1.0m BGL
1.2					

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compassenvironmental

Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PushTube
Sampling method	: Grab
Total depth	: 0.5 m

BORE ID: B8

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (150mm)
0.2	B8/0.2	0.6			FILL: gravelly sand, fine to medium-grained, dark brown, loose, slightly moist, fine to medium-grained gravels, no odour, no staining
0.4	B8/0.4	0.7		SS	SILTSTONE (extremely weathered): pale grey/red, dry to slightly moist, no odour, no staining
0.6					Refusal at 0.5m BGL.

compassenvironmental

Logged by : RB
Checked by : SH
Drilling contractor : Statewide
Drilling method : PushTube
Sampling method : Grab
Total depth : 0.7 m

BORE ID: B9

Project number : 21135
Client : TIme & Place
Location : Northcote
Date : 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (150mm)
					FILL: silty sand, fine grained, pale brown, loose, no odour, no staining
0.2					SILTSTONE (extremely weathered): pale grey/brown/orange, dry, no odour, no staining
	B9/0.3	0.7		SS	
0.4					
0.6	B9/0.6	0.8			
					Refusal at 0.7m BGL.
0.8					

compassenvironmental

Logged by : RB
Checked by : SH
Drilling contractor : Statewide
Drilling method : PushTube
Sampling method : Grab
Total depth : 0.5 m

BORE ID: B10

Project number : 21135
Client : TIme & Place
Location : Northcote
Date : 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (140mm)
0.2	B10/0.2	0.8			FILL: gravelly silty sand, fine to medium-grained, dark brown, loose, fine to coarse-grained gravels, sub-rounded to sub-angular, no odour, no staining
0.4	B10/0.4	0.8		SS	SILTSTONE (extremely weathered): brown/grey/orange, dry, no odour, no staining
					Refusal at 0.5m BGL.
0.6					
0.8					

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compassenvironmental

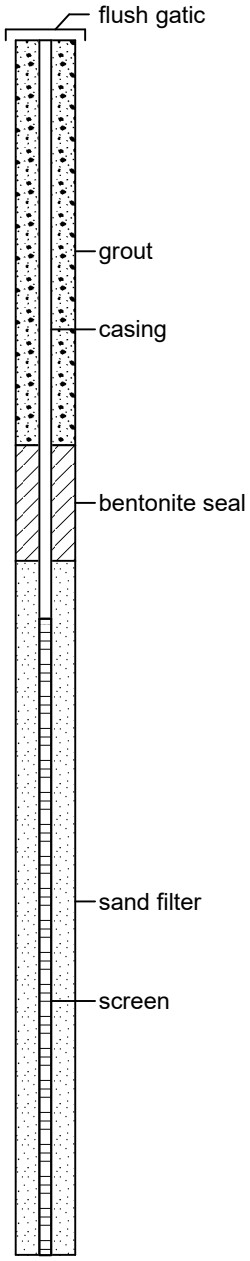
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 10.5 m
Well depth	: 10.5 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: GW1

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 3 August 2022

Depth (m)	Sample ID	PID (ppm)	USCS	Description	Drilling method
0.0	GW1/0.2	0.1		CONCRETE (180mm)	Push Tube
0.5	GW1/0.5	0.1		FILL: sandy gravel, fine to coarse-grained and angular to rounded, grey, moist, loose, fine to coarse-grained sands, no odour, no staining, no visible asbestos containing material	
1.0	GW1/1.0	0.0		SILTSTONE (weathered): white/grey, slightly moist, loose, no odour, no staining	
1.5					
2.0	GW1/2.0	0.1		pale brown from 2.0m BGL	
2.5					
3.0	GW1/3.0	0.1		brown from 3.0m BGL	
3.5					
4.0					
4.5					
5.0					
5.5			SS		Solid Auger
6.0					
6.5					
7.0	GW1/7.0	0.2			
7.5				slightly moist from 7.5m BGL	
8.0					
8.5					
9.0					
9.5				pale grey and soft from 9.5m BGL	
10.0	GW1/10.5	0.3		wet at 10.5m BGL	
10.5				Borehole terminated at 10.5m BGL	
11.0					

Well construction: GW1



compassenvironmental

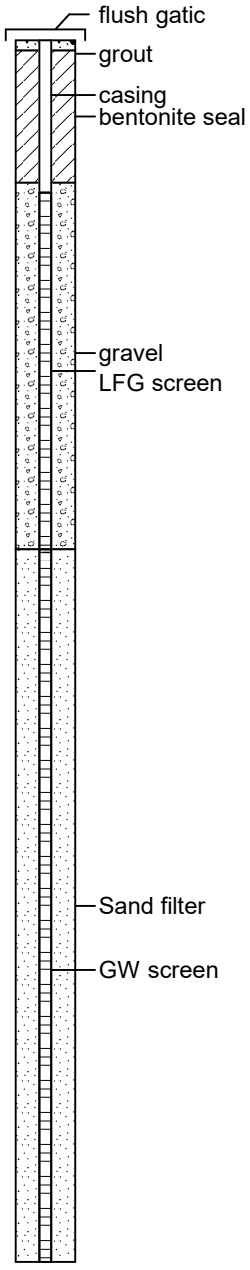
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 12.0 m
Well depth	: 12.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: GW2

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 3 August 2022

Depth (m)	Sample ID	PID (ppm)	USCS	Description	Drilling method
0.0	GW2/0.2	0.2		CONCRETE (180mm)	Push Tube
0.5	GW2/0.4	0.3		FILL: sandy gravel, fine to coarse-grained and sub-ronded to sub-angular, grey, slightly moist, fine to medium-grained sands, no odour, no staining, no visible asbestos containing material	
	GW2/0.8	0.4			
1.0	GW2/1.0	0.3			
1.5				SILTY CLAY: high plasticity, pale grey/brown/orange, slightly moist, soft, some fine-grained sand, no odour, no staining	
2.0	GW2/2.0	0.3		SILTSTONE (weathered): white/grey/brown, slightly moist, loose, no odour, no staining	
2.5					
3.0	GW2/3.0	0.4		pale red from 3.2m BGL	
3.5	GW2/3.5	0.3			
4.0					
4.5					
5.0					
5.5					
6.0			SS		Solid Auger
6.5					
7.0					
7.5					
8.0				brown from 8.5m BGL	
8.5					
9.0					
9.5					
10.0				moist from 10.5m BGL	
10.5					
11.0					
11.5				wet from 12.0m BGL	
12.0	GW2/12.0	0.6		Borehole terminated at 12.0m BGL	
12.5					

Well construction: GW2



compassenvironmental

Logged by	: DR & RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Sampling method	: Grab
Total depth	: 0.8 m

Test pit number: GW3

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 5 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (110mm)
0.2	GW3/0.2	0.0			FILL: sandy gravel, fine to coarse-grained, dry, fine to coarse-grained sands, soft, no odour, no staining, no visible asbestos containing material
0.4	GW3/0.5 GW050822A GW203/0.5	20.3			FILL: silty clay, low plasticity, dry, dense, some siltstone chips, some quartz, hydrocarbon odour, black staining, no visible asbestos containing material
0.6					
0.8					Refusal on suspected concrete at 0.8m BGL
1.0					

compassenvironmental

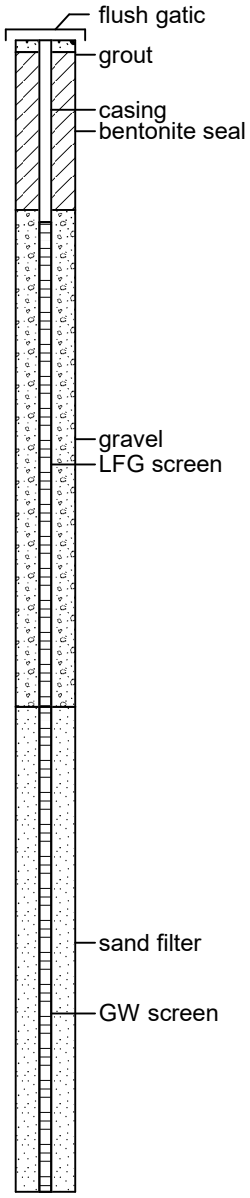
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 9.5 m
Well depth	: 9.5 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: GW3A

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	GW3A/0.2	0.7			CONCRETE (120mm)	Push Tube
0.5					FILL: sandy gravel, fine to coarse-grained, grey, dry, fine to coarse-grained sands, soft, no odour, no staining, no visible asbestos containing material	
1.0	GW3A/1.0	16.9			SILTY CLAY: low plasticity, pale grey/brown/orange, dry-slightly moist, dense, some fine- coarse grained gravels, some quartz, hydrocarbon odour, black staining, no visible asbestos containing materials	
1.5						
2.0	GW3A/2.0	32.4			SILTSTONE (weathered):pale grey/brown/ orange/red, dry, strong hydrocarbon odour, no staining	
2.5						
3.0	GW3A/3.0	35.5			brown/red from 2.0m BGL	
3.5						
4.0	GW3A/4.0 GW080822 GW203A/4.0	22.5				
4.5						
5.0	GW3A/5.0	15.9		SS		Solid Auger
5.5						
6.0	GW3A/6.0	11.1				
6.5						
7.0	GW3A/7.0	5.0				
7.5						
8.0	GW3A/8.0	7.9				
8.5						
9.0						
9.5					Drilling paused at 8.5m and borehole collapsed to 6.5m. Redrilled on 9/08/22 and installed at 9.5m BGL.	
10.0						
10.5						

Well construction: GW3A



compassenvironmental

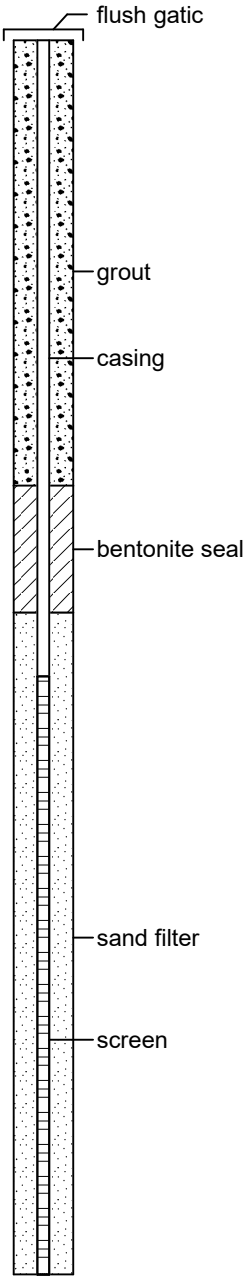
Logged by	: DR & RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 8.0 m
Well depth	: 8.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: GW4

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 5 & 8 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	GW4/0.2 GW050822B GW204/0.2	28.1			CONCRETE (140mm)	Push Tube
0.5					FILL: clayey gravels, fine to coarse-grained, brown/pale brown, dry, some fine to coarse-grained sands, some siltstone chips, no odour, no staining, no visible asbestos containing material	
1.0	GW4/1.0	33.2				
1.5					SILTSTONE (extremely weathered): white/yellow/grey, dry, no odour, no staining	
2.0	GW4/2.0	30.9			brown from 2.0m	
2.5						
3.0	GW4/3.0	59.0				
3.5						Solid Auger
4.0	GW4/4.0	59.3				
4.5						
5.0	GW4/5.0	17.9		SS		
5.5						
6.0	GW4/6.0	47.4				
6.5						
7.0	GW4/7.0	50.1				
7.5						
8.0	GW4/8.0	28.4				
8.5						
9.0	GW4/9.0	4.0				
9.5						
10.0						

Well construction: GW4



Borehole was drilled to 9.7m BGL and collapsed back to 7.3m BGL. Re-drillied to 9.7m BGL on 08/08/2022 and groundwater well installed.

compassenvironmental

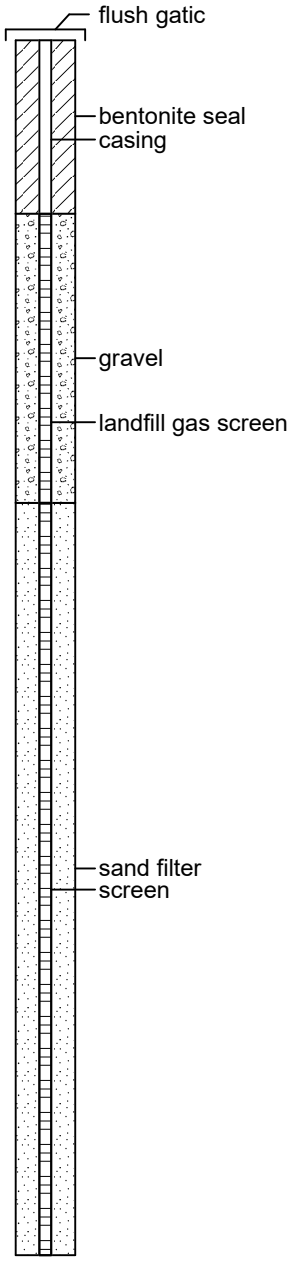
Logged by	: DR
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 10.5 m
Well depth	: 10.5 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: GW5

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 31 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	GW5/0.1	0.0			FILL: silty sand, fine to coarse-grained, brown, moist, soft, no odour, no staining, no visible asbestos containing material	Push Tube
	GW310822					
0.5	GW205/0.1	0.0				
	GW5/0.5					
1.0	GW5/1.0	0.0			FILL: gravelly clay, low plasticity, brown/red, moist, soft, fine to coarse-grained gravels, some fine to coarse-grained gravels, no odour, no staining, no visible asbestos containing material	
1.5					FILL: gravelly clay, low plasticity, white/brown/pale brown/grey, moist, soft, no odour, no staining, no visible asbestos containing material	
2.0	GW5/2.0	0.0			SILTSTONE (weathered): white, dry	Solid Auger
2.5						
3.0	GW5/3.0	0.0				
3.5						
4.0	GW5/4.0	0.1				
4.5						
5.0	GW5/5.0	0.0				
5.5						
6.0	GW5/6.0	0.0		SS		
6.5						
7.0	GW5/7.0	0.0				
7.5						
8.0	GW5/8.0	0.0				
8.5						
9.0	GW5/9.0	0.0				
9.5						
10.0	GW5/10.0	0.0				
10.5					Borehole terminated at 10.5m BGL and groundwater well installed	
11.0						

Well construction: GW5



compassenvironmental

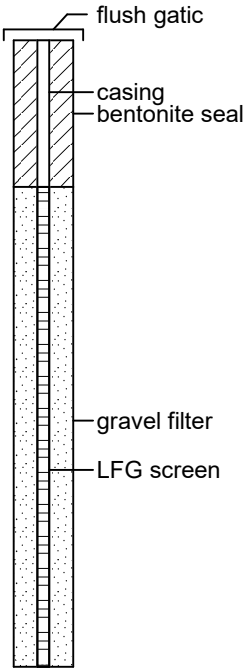
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 12.5 m
Well depth	: 6.4 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG1

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 2 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG1/0.2	0.3			ASPHALT (30mm)	Push Tube
0.5	LFG1/0.5	0.2			FILL: gravelly silt, grey, slightly moist, to moist, dense, fine to medium-grained sub-rounded to sub-angular gravels, no odour, no staining	
	LFG/0.75	0.5				
1.0	LFG1/0.85	0.3				
	LFG1/1.1	0.2				
1.5	LFG1/1.5	0.1			FILL: clayey silt, brown/red, slightly moist, some fine to coarse-grained gravels, some quartz, trace organic matter, no odour, no staining, no visible asbestos containing materia	
2.0	LFG1/2.0	0.2			FILL: sandy silt, pale yellow, dry, no odour, no staining	
2.5					FILL: clayey silt, brown/red/yellow, dry, some fine to coarse-grained and sub-rounded to angular gravels, trace red brick fragments, some siltstone chips, no odour, no staining, no visible asbestos containing material	
3.0	LFG1/2.8	0.3				
3.5					FILL: silty clay, low plasticity, dark brown, dry to slightly moist, some fine to coarse-grained gravels, some siltstone chips, trace red brick fragments, some organic matter, no odour, no staining, no visible asbestos containing material brown from 2.0m BGL concrete fragments from 2.8m BGL dark brown from 3.5m BGL red/brown and red brick fragments from 5.0m BGL	Solid Auger
4.0	LFG1/4.0	0.3				
4.5						
5.0	LFG1/5.0	0.2				
5.5	LFG1/5.5	0.3				
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0						
10.5						
11.0						
11.5						
12.0						
12.5					Borehole terminated at 12.5m BGL Borehole collapsed back to 6.4m BGL after being re-drilled	
13.0						

Well construction: LFG1



compassenvironmental

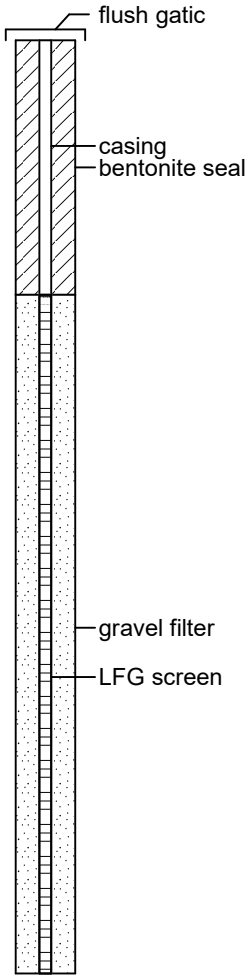
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 7.0 m
Well depth	: 5.5 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG2

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 2 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0					ASPHALT (50mm)	
0.5	LFG2/0.2	0.3			FILL: sandy gravelly clay, low plasticity, brown/white/grey/orange, dry to slightly moist, some charcoal fragments, some red brick fragments, no odour, no staining, no visible asbestos containing material	
1.0	LFG2/0.5	0.3				
1.5	LFG2/1.0	1.5			some concrete fragments at 1.0m BGL	Push Tube
2.0	LFG2/1.5	1.2				
2.5						
3.0	LFG2/3.0	0.4				
3.5						
4.0	LFG2/4.0	-				
4.5						
5.0						Solid Auger
5.5						
6.0	LFG2/6.0	0.1			moist from 6.0m BGL	
6.5						
7.0					Borehole terminated at 7.0m BGL Borehole collapsed back to 5.5m BGL after being re-drilled	
7.5						

Well construction: LFG2



compassenvironmental

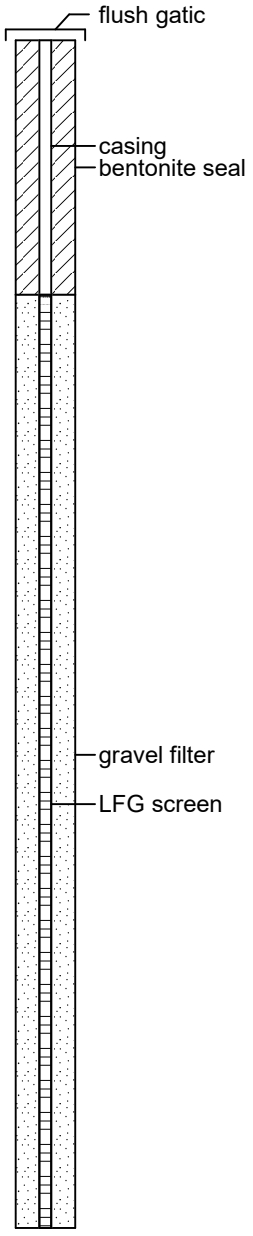
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 7.0 m
Well depth	: 7.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG3

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 3 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG3/0.1	0.3			ASPHALT (40mm)	Push Tube
0.5	LFG3/0.5	0.4			FILL: sandy gravel, fine to coarse-grained and sub-ronded to sub-angular, grey, slightly moist, loose, fine to medium-grained sands, no odour, no staining, no visible asbestos containing material	
1.0	LFG3/1.0	0.4			FILL: sandy gravelly clay, low plasticity, brown/grey/red/orange, dry to slightly moist, some fine to coarse-grained sub-rounded to sub-angular gravels, some fine to coarse-grained sands, some red brick fragments, trace charcoal fragments, no odour, no staining, no visible asbestos containing material	Solid Auger
1.5						
2.0	LFG3/2.0	0.3			some glass fragments from 2.0m BGL	
2.5						
3.0	LFG3/3.0	0.3			SILTSTONE (extremely weathered): pale brown, slightly moist, no odour, no staining	
3.5						
4.0						
4.5						
5.0				SS		
5.5						
6.0						
6.5					slightly moist from 6.5m BGL	
7.0	LFG3/6.8	0.3			Borehole terminated at 7.0m BGL	
7.5						

Well construction: LFG3



compassenvironmental

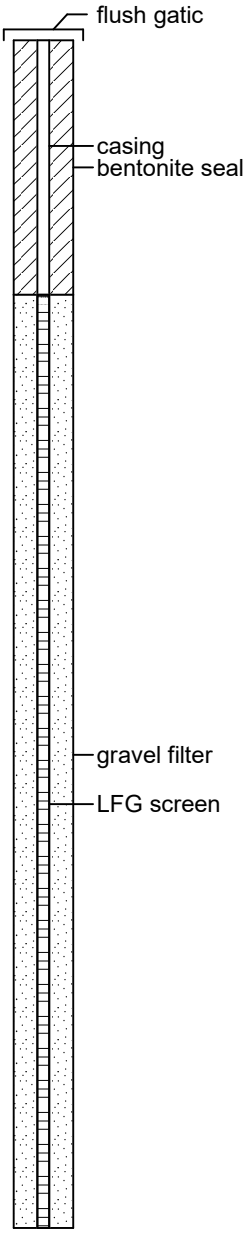
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 7.0 m
Well depth	: 7.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG4

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 4 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG4/0.1	0.2			FILL: clayey silt, dark brown, slightly moist, loose, some fine to medium-grained gravels, trace red brick fragments, no odour, no staining, no visible asbestos containing material	Push Tube
	LFG4/0.4					
0.5	LFG040822 LFG204/0.4	0.2			SILTSTONE (extremely weathered): pale brown/grey/orange, slightly moist, no odour, no staining	
1.0	LFG4/0.9	0.2				
1.5	LFG4/1.5	0.2			pale brown from 1.5m BGL	Solid Auger
2.0	LFG4/2.0	0.2				
2.5						
3.0	LFG4/3.0	0.2				
3.5				SS		
4.0						
4.5						
5.0						
5.5						
6.0	LFG4/6.0	0.2			pale red from 6.0m BGL	
6.5						
7.0					Borehole terminated at 7.0m BGL	
7.5						

Well construction: LFG4



compassenvironmental

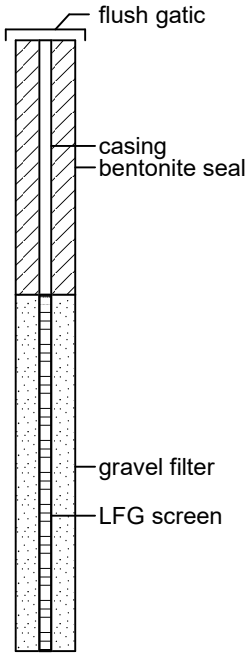
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 7.0 m
Well depth	: 3.6 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG5

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 4 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG5/0.1	0.3			CONCRETE (150mm)	Push Tube
0.5	LFG5/0.5	0.2			FILL: sandy gravel, fine to coarse-grained sub-rounded to sub-angular, dark grey, slightly moist, fine to medium-grained sand, some low plasticity clay, no odour, no staining, no visible asbestos containing material	
1.0	LFG5/1.0	0.2			FILL: sandy gravelly clay, low plasticity, brown/orange/grey/red, slightly moist, fine to coarse-grained sub-rounded to sub-angular gravels, some red brick fragments, some quartz, some charcoal fragments, no odour, no staining, no visible asbestos containing material	
1.5	LFG5/1.5	0.2				
2.0	LFG5/2.0	0.2				
2.5						
3.0	LFG5/3.0	0.2				Solid Auger
3.5						
4.0						
4.5						
5.0						
5.5						
6.0						
6.5						
7.0					Borehole terminated at 7.0m BGL Borehole collapsed back to 3.6m BGL after being re-drilled	
7.5						

Well construction: LFG5



compassenvironmental

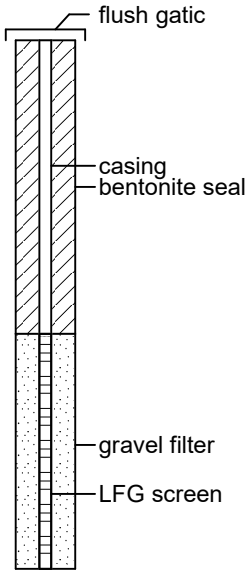
Logged by	: RB
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 6.0 m
Well depth	: 2.7 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG6

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 4 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG6/0.1	0.2			CONCRETE (180mm)	Push Tube
0.5	LFG6/0.5	0.3			FILL: sandy silty gravel, fine to coarse-grained and sub-rounded to sub-angular, dark grey, slightly moist, medium-coarse-grained, no odour, no staining	
1.0	LFG6/1.0	0.4			FILL: sandy gravelly clay, low plasticity, brown/orange/red, slightly moist, medium to coarse-grained and sub-rounded to sub-angular gravels, some fine to medium-grained sands, some red brick fragments, no odour, no staining, no visible asbestos containing material	
1.5	LFG6/1.8	0.3				Solid Auger
2.0						
2.5	LFG6/2.8	0.7				
3.0						
3.5						
4.0						
4.5						
5.0						
5.5						
6.0					Borehole terminated at 6.0m BGL Borehole collapsed back to 2.7m BGL after being re-drilled	
6.5						

Well construction: LFG6



compassenvironmental

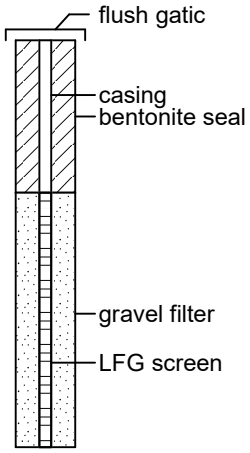
Logged by	: DR
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 12.0 m
Well depth	: 4.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG7

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 31 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG7/0.15	0.0			CONCRETE (120mm)	Push Tube
0.5	LFG7/0.5	0.0			FILL: gravelly sand, fine to coarse-grained, brown, moist, soft, fine to coarse-grained gravels, no odour, no staining, no visible asbestos containing material	
1.0	LFG7/1.0	0.1			FILL: gravelly clay, brown/grey/red, dry, soft, loose, fine to coarse-grained gravels, some fine to coarse-grained sand, some red brick fragments, no odour, no staining, potential visible asbestos containing material	
1.5						
2.0	LFG7/2.0	0.4				
2.5					dark brown from 2.8m BGL	Solid Auger
3.0	LFG7/3.0	0.8				
3.5						
4.0	LFG7/4.0	0.0				
4.5						
5.0						
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0						
10.5						
11.0						
11.5						
12.0					Borehole terminated at 12.0m BGL Borehole collapsed back to 4.0m BGL	
12.5						

Well construction: LFG7



compassenvironmental

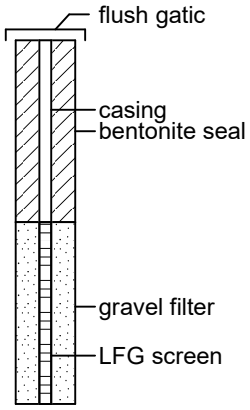
Logged by	: DR
Checked by	: SH
Drilling contractor	: Statewide
Drilling method	: PT & SA
Bore diameter	: 110 mm
Sampling method	: Grab
Bore depth	: 10.0 m
Well depth	: 3.0 m
Screen material	: Slotted PVC
Casing material	: PVC

Bore/Well: LFG8

Project number	: 21135
Client	: Time & Place
Location	: Northcote
Date	: 31 August 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description	Drilling method
0.0	LFG8/0.15	0.0			CONCRETE (100mm)	Push Tube
0.5	LFG8/0.5	0.4			FILL: gravelly sand, fine to coarse-grained, brown, moist, soft fine to coarse-grained gravels, some red brick fragments, some glass, no odour, no staining, no visible asbestos containing material	
1.0	LFG8/1.0	0.1				
1.5						
2.0						Solid Auger
2.5						
3.0						
3.5						
4.0						
4.5						
5.0						
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0					Borehole terminated at 10.0m BGL Borehole collapsed back to 3.0m BGL	
10.5						

Well construction: LFG8



compassenvironmental

Logged by	: DR
Checked by	: SH
Drilling contractor	: Kingston
Drilling method	: Excavator
Sampling method	: Grab
Total depth	: 3.0 m

Test pit number: TP1

Project number	: 21135
Client	: TIme & Place
Location	: Northcote
Date	: 11 March 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (100mm)
	TP1/0.3 TP110322A TP201/0.3	0.4			FILL: gravelly silt, brown, dry, loose, fine to coarse-grained gravels, some red brick fragments, concrete, wood, no odour, no staining, no visible asbestos containing material
0.5	TP1/0.5	0.6			
1.0	TP1/1.0	0.3			
1.5					
2.0	TP1/2.0	0.6			increasing number of bricks at 2.0m
2.5					FILL: silty clay, high plasticity, dry, hard, red brick fragments, bentonite gravels, no odour, no staining
3.0	TP1/3.0	0.1			Testpit terminated at 3.0m BGL

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Logged by : DR
Checked by : SH
Drilling contractor : Kingston
Drilling method : Excavator
Sampling method : Grab
Total depth : 3.2 m

Test pit number: TP2

Project number : 21135
Client : TIme & Place
Location : Northcote
Date : 11 March 2022

Depth (m)	Sample ID	PID (ppm)	Graphic log	USCS	Description
0.0					CONCRETE (100mm)
	TP2/0.3	0.2			FILL: gravelly silt, brown, dry, loose, fine to coarse-grained gravels, some red brick fragments, concrete, no odour, no staining, no visible asbestos containing material
0.5	TP2/0.5	0.1			
1.0	TP2/1.0	0.6			
1.5					
2.0	TP2/2.0	0.4			
2.5					
3.0	TP2/3.0	0.1			
					Testpit terminated at 3.2m BGL

ATTACHMENT C

Compass Soil Tabulated Results

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

							Inorganics					Metals																					TRH	
							CEC	Clay Content	Conductivity (1:5 aqueous extract)	TOC	Organic Matter	pH CaCl2	Cyanide Total	Cyanide amenable to chlorination	Fluoride	Sulphate (as SO4)	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Chromium (hexavalent)	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	C6 - C9	C10 - C14
							meq/100g	%	µS/cm	%	%	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.2	1	1	0.5	0.5	0.1	0.5	1	40	50	5	4	10	1	50	0.2	1	0.5	2	1	0.005	1	5	0.05	1	1	2	1	1	5	1	10	20
EPA Vic 1828.2 Category B upper limit												2-12.5[#1]	10000		40000		300	2000	25000	400	60000	400		2000		20000		6000		300	4000	12000	40000	720			140000	2600	
EPA Vic 1828.2 Category C upper limit												2-12.5[#1]	2500		10000		75	500	6250	100	15000	100		500		5000		1500		75	1000	3000	10000	180			35000	650	
EPA Vic 1828.2 Category D / Industrial Waste upper limit												4-10[#2]	2500		10000		75	500	6250	100	15000	100		500		5000		1500		75	1000	3000	10000	180			35000	325	
EPA Vic 1828.2 Fill material upper limit												4-10[#2]	50		450			20				3		1		100		300		1	40	60	10	10	50		200	100	
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																	
Compass Environmental Data																																						
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	9.2	-	-	-	300	<5	6	130	<1	<50	<1	-	-	7	-	-	17	-	<0.1	<2	20	<5	<2	-	-	34	<10	<50
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill		-	-	-	-	-	9.2	<1	<1	300	-	<5	6	80	<1	<50	<1	-	<0.5	13	-	-	12	-	<0.1	<2	50	<5	<2	-	-	43	<10	<50
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill		-	-	-	-	-	-	-	-	-	-	<10	6.7	170	<2	<10	<0.4	27	-	17	28	-	25	300	<0.1	<5	**63**	<2	<2	<10	40	62	<20	<20
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	8	-	-	-	<100	<5	<5	60	<1	<50	<1	-	-	6	-	-	15	-	<0.1	<2	18	<5	<2	-	-	62	<10	<50
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	8	<1	<1	310	-	<5	<5	80	<1	<50	<1	-	<0.5	-	18	-	26	-	<0.1	<2	20	<5	<2	<5	-	64	<10	<50
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	6	150	<1	<50	<1	-	-	6	-	-	28	-	<0.1	<2	23	<5	<2	-	-	54	<10	<50
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill		-	-	-	-	-	9.1	<1	<1	50	-	<5	<5	10	<1	<50	<1	-	<0.5	-	14	-	<5	-	<0.1	<2	27	<5	<2	<5	-	18	<10	<50
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	30	<1	<50	<1	3	-	13	<5	-	<5	41	<0.1	<2	<2	<5	<2	<5	<5	<5	<10	<50
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	60	<1	<50	<1	25	-	4	20	-	13	82	<0.1	<2	14	<5	<2	<5	14	38	<10	<50
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	10	<1	<50	<1	10	-	<2	9	-	<5	32	<0.1	<2	4	<5	<2	<5	12	14	<10	<50
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	40	<1	<50	<1	37	-	2	34	-	20	32	<0.1	<2	13	<5	<2	<5	17	44	<10	<50
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	5	40	<1	<50	<1	19	-	<2	25	-	12	60	<0.1	<2	4	<5	<2	<5	11	31	<10	1130
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	7	20	<1	<50	<1	32	-	<2	39	-	18	39	<0.1	<2	7	<5	<2	<5	16	47	<10	2000
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	30	<1	<50	<1	18	-	30	33	-	<5	690	<0.1	<2	**107**	<5	<2	<5	18	55	<10	<50
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	8	120	<1	<50	<1	27	-	7	29	-	15	210	<0.1	<2	10	<5	<2	<5	21	33	<10	<50
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	30	<1	<50	<1	18	-	32	43	-	<5	736	<0.1	<2	**122**	<5	<2	<5	16	65	<10	<50
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	11	30	<1	<50	<1	37	-	11	19	-	15	295	<0.1	<2	9	<5	<2	<5	30	14	<10	<50
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	8.2	<1	<1	140	-	<5	6	40	<1	<50	<1	-	<0.5	-	26	-	<5	-	<0.1	<2	**70**	<5	<2	<5	-	40	<10	<50
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	8	20	1	<50	<1	31	-	23	14	-	18	118	<0.1	<2	11	<5	<2	<5	31	17	<10	<50
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	60	<1	<50	<1	18	-	7	17	-	16	76	<0.1	<2	14	<5	<2	<5	15	43	<10	<50
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	50	<1	<50	<1	17	-	6	15	-	18	85	<0.1	<2	16	<5	<2	<5	18	55	<10	<50
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill		-	-	-	-	-	-	-	-	-	-	<10	3.9	85	<2	<20	<0.4	26	-	11	26	-	19	94	<0.1	<5	28	<2	<2	<10	21	79	<20	<20
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	7	<5	160	<1	<50	<1	20	-	6	17	-	15	139	<0.1	<2	16	<5	<2	<5	29	37	<10	<50
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	8.4	<1	<1	110	210	<5	<5	20	<1	<50	<1	-	<0.5	-	20	-	<5	-	<0.1	<2	**66**	<5	<2	<5	-	38	<10	<50
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	60	<1	<50	<1	10	-	2	<5	-	7	58	<0.1	<2	4	<5	<2	<5	10	6	<10	<50
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	10	<1	<50	<1	15	-	<2	<5	-	<5	74	<0.1	<2	<2	<5	<2	<5	<5	<5	<10	<50
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	10	<1	<50	<1	15	-	<2	10	-	<5	17	<0.1	<2	3	<5	<2	<5	5	10	<10	<50
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	30	<1	<50	<1	17	-	30	37	-	<5	693	<0.1	<2	**116**	<5	<2	<5	15	61	<10	<50
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	<10	<1	<50	<1	9	-	<2	16	-	<5	62	<0.1	<2	3	<5	<2	<5	12	9	<10	<50
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill		-	-	-	-	-	8.3	<1	<1	250	-	<5	<5	50	<1	<50	<1	-	<0.5	-	28	-	<5	-	<0.1	<2	**114**	<5	<2	<5	-	46	<10	<50
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural		2.7	27	71	<0.5	<0.5	8.2	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	0.023	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	20	<1	<50	<1	9	-	<2	<5	-	6	<5	<0.1	<2	<2	<5	<2	<5	<5	<5	<10	<50
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	7	30	<1	<50	<1	22	-	<2	23	-	11	9	<0.1	<2	3	<5	<2	<5	10	29	<10	<50
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	6	50	<1	<50	<1	21	-	<2	31	-	14	6	<0.1	<2	4	<5	<2	<5	11	33	<10	<50
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill		-	-	-	-	-	-	-	-	-	-	<5	<5	40	<1	<50	<1	16	-	28	34	-	<5	496	<0.1	<2	**121**	<5	<2	<5	10	50	<10	<50
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	40	<1	<50	<1	5	-	<2	<5	-	8	22	<0.1	<2	2	<5	<2	<5	6	<5	<10	<50
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	20	<1	<50	<1	19	-	<2	16	-	11	30	<0.1	<2	<2	<5	<2	<5	14	5	<10	<50
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill		-	-	-	-	-	7.3	<1	<1	250	<50	<5	8	200	2	<50	<1	-	<0.5	-	18	-	18	-	<0.1	<2	23	<5	<2	<5	-	13	<10	990
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill		-	-	-	-	-	-	-	-	-	-	<5	8	180	1	<50	<1	43	-	8	12	-	13	63	<0.1	<2	16	<5	<2	<5	66	9	<10	1720
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill		-	-	-	-	-	-	-	-	-	-	<10	9.8	320	2.7	<25	<0.4	72	-	15	17	-	20	130	<0.1	<5	24	2.1	<2	<10	100	17	<80	1000
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	260	<1	<50	<1	18	-	<2	24	-	11	95	<0.1	<2	3	<5	<2	<5	10	8	<10	870
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal			2.3	32	93	0.7	1.2	7.6	-	-	-	60	-	-	-	-	-	-	-	-	-	-	1.89	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal			-	-	-	-	-	-	-	-	-	-	<5	6	50	<1	<50	<1	25	-	<2	32	-	14	88	<0.1	<2	4	<5	<2	<5	15	27	<10	600
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal			-	-	-	-	-	7.5	-	-	-	60	<5	6	50	<1	<50	<1	30	-	<2	29	-	17	37	<0.1	<2	7	<5	<2	<5	15	28	<10	120
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill		-	-	-	-	-	8.2	<1	<1	360	-	<5	<5	120	<1	<50	<1	-	<0.5	-	21	-	10	-	<0.1	<2	3	<5	<2	<5	-	18	14	3630
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill		-	-	-	-	-	-	-	-	-	-	<5	7	90	<1	<50	<1	28	-	4	46	-	15	217	<0.1	<2	9	<5	<2	<5	18	34	<10	1210
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill		-	-	-	-	-	-	-	-	-	-	<10	5.6	230	<2	<20	<0.4	30	-	6.8	27	-	17	120	<0.1	<5	9.3	<2	<2	<10	27	25	<20	1400
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	40	<1	<50	<1	14	-	<2	25	-	10	51	<0.1	<2	5	<5	<2	<5	8	27	<10	1180
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural		1.9	35	128	<0.5	<0.5	7.8	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	3.91	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural		-	-	-	-	-	-	-	-	-	-	<5	<5	40	<1	<50	<1	25	-	2	36	-	18	15	<0.1	<2	12	<5	<2	<5	16	52	10	620

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

| | | |

Project: 21135
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Table 1 - Soil Off-site Disposal Results

	Inorganics										Metals																				TRH	
	CEC	Clay Content	Conductivity (1:5 aqueous extract)	TOC	Organic Matter	pH CaCl2	Cyanide Total	Cyanide amenable to chlorination	Fluoride	Sulphate (as SO4)	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Chromium (hexavalent)	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	C6 - C9	C10 - C14
	meq/100g	%	µS/cm	%	%	pH Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	1	1	0.5	0.5	0.1	0.5	1	40	50	5	4	10	1	50	0.2	1	0.5	2	1	0.005	1	5	0.05	1	1	2	1	1	5	1	10	20
EPA Vic 1828.2 Category B upper limit						2-12.5[#1]	10000		40000		300	2000	25000	400	60000	400		2000		20000		6000		300	4000	12000	40000	720			140000	2600	
EPA Vic 1828.2 Category C upper limit						2-12.5[#1]	2500		10000		75	500	6250	100	15000	100		500		5000		1500		75	1000	3000	10000	180			35000	650	
EPA Vic 1828.2 Category D / Industrial Waste upper limit						4-10[#2]	2500		10000		75	500	6250	100	15000	100		500		5000		1500		75	1000	3000	10000	180			35000	325	
EPA Vic 1828.2 Fill material upper limit						4-10[#2]	50		450			20				3		1		100		300		1	40	60	10	10	50		200	100	
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																												
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	<0.4	19	-	-	46	-	12	-	<0.1	<1	10	<2	<1	1	-	30	<25	1700
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<25	1100
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<25	550
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	<0.4	27	-	-	41	-	7	-	<0.1	<1	44	<2	<1	2	-	32	<25	<50
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	40	-	-	24	-	13	-	<0.1	<1	4	<2	<1	<1	-	16	<25	<50
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	<0.4	25	-	-	16	-	11	-	<0.1	<1	2	<2	<1	<1	-	9	<25	<50
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	24	-	-	22	-	8	-	<0.1	<1	16	<2	<1	<1	-	21	<25	<50
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	31	-	-	17	-	12	-	<0.1	<1	18	<2	<1	1	-	38	<25	<50
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	<4	-	-	-	<0.4	18	-	-	4	-	12	-	<0.1	<1	2	<2	<1	<1	-	3	<25	<50
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	<0.4	22	-	-	14	-	19	-	<0.1	<1	12	<2	<1	1	-	46	<25	<50
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	<0.4	24	-	-	14	-	18	-	<0.1	<1	12	<2	<1	1	-	49	<25	<50

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						TRH										MAH										PAH														
						C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	TRH C6-C10 less BTEX (F1)	C10-C16	TRH>C10-C16 less Naphthalene (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	BTEX (Sum)	Styrene	Total MAH (1828.2)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						50	50	50	10	10	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.5	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.05	0.1	0.2	0.1	0.1	0.2	0.1	0.5	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit								40000								16	12800	4800			9600		480						160											
EPA Vic 1828.2 Category C upper limit								10000								4	3200	1200			2400		120						40											
EPA Vic 1828.2 Category D / Industrial Waste upper limit								5000								4	3200	1200			2400		120						20											
EPA Vic 1828.2 Fill material upper limit								1000								1								7					1											
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																			
Compass Environmental Data																																							
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	3440	320	4890	<10	<10	3020	3020	2070	230	5320	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	4870	320	7190	18	17	4590	4590	2800	230	7620	<0.2	<0.5	<0.5	0.6	<0.5	0.6	0.6	-	-	<1.2	<0.5	<1	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	2030	150	3170	<10	<10	1710	1670	1430	<100	3140	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	5	0.6	3.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	3670	340	5730	<10	<10	3190	3180	2560	110	5860	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	8.2	<0.5	6	0.8	<0.5	0.7	1.2	<0.5	-	-	<0.5	<0.5	<0.5	0.7	<0.5
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	3000	220	4220	<80	<80	1500	1492.7	2200	<100	3700	<0.4	<0.4	<0.4	<0.8	<0.4	<0.48	-	-	-	5.8	0.7	3	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	0.6	<0.5
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	2570	420	3860	14	14	1490	1420	2330	150	3970	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	9.2	<0.5	4.6	0.8	<0.5	0.7	1.2	<0.5	-	-	<0.5	<0.5	<0.5	0.7	<0.5
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		2060	620	3280	19	18	1040	1000	2150	260	3450	<0.2	<0.5	<0.5	0.7	<0.5	0.7	0.7	-	-	4.5	<0.5	1.8	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		480	120	720	<10	<10	230	220	480	<100	710	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	2	<0.5	0.9	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	7700	600	11,900	30	29	7100	7100	4670	400	12,200	<0.2	<0.5	<0.5	0.7	<0.5	0.7	-	<0.5	0.7	2	<0.5	0.6	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	3400	450	5060	17	17	3040	3040	2170	320	5530	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.8	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	4100	370	5870	<20	<20	2300	2300	2900	<100	5200	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	2.4	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	2760	170	4110	17	16	2840	2840	1450	130	4420	<0.2	<0.5	<0.5	0.6	<0.5	0.6	0.6	-	-	<0.6	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	1310	<100	1930	19	18	1420	1420	660	<100	2080	<0.2	<0.5	<0.5	0.6	<0.5	0.6	0.6	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						TRH										MAH									PAH																	
						C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	TRH C6-C10 less BTEX (F1)	C10-C16	TRH>C10-C16 less Naphthalene (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	BTEX (Sum)	Styrene	Total MAH (1828.2)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						50	50	50	10	10	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.5	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.05	0.1	0.2	0.1	0.1	0.2	0.1	0.5	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit								40000								16	12800	4800		0.2	9600		480						160												
EPA Vic 1828.2 Category C upper limit								10000								4	3200	1200			2400		120						40												
EPA Vic 1828.2 Category D / Industrial Waste upper limit								5000								4	3200	1200			2400		120						20												
EPA Vic 1828.2 Fill material upper limit								1000								1								7					1												
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																					
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	3540	210	**5350**	36	35	3580	3580	1960	160	5700	<0.2	<0.5	<0.5	1.4	<0.5	1.4	1.4	-	-	<0.6	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	<50	62	62	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<1	<0.5	-	-	<0.5	<0.5
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	110	<100	110	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	110	<100	110	<10	<10	<50	<50	180	<100	180	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	1.5	1.7	3.6	**3.1**	4.4	4.6	4.1	-	-	1.8	3.6	1.3	2.8	<0.5
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	0.7	1	1.9	**1.5**	2.3	2.5	2	-	-	0.9	1.8	0.7	1.5	<0.5
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	220	240	460	<10	<10	<50	<50	420	140	560	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.2	<0.5	<0.5	<0.5	0.7	0.9	1.4	1.7	1.2	-	1.4	0.7	-	0.7	<0.5
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	0.8	1.2	1.5	0.9	-	1.1	<0.5	-	-	<0.5	<0.5
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas Partners Data																																									
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<1	<0.5	<1	<1	<0.5	-	<0.1	<0.1	<0.1	<0.1	0.1	0.2	0.2	0.1	<0.1	-	<0.1	-	<0.1	0.1	<0.1
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	0.1	0.6	0.5	0.7	0.8	0.7	0.4	-	0.3	-	0.4	0.4	<0.1
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	100	89	-	<20	<20	<20	<20	190	<50	190	-	-	-	-	-	-	-	-	-	<0.2	0.6	0.9	3.8	**3.3**	4.7	4.7	4.7	2.2	-	2	-	2.2	2.3	0.4
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	73	<50	-	<20	<20	<20	<20	120	<50	120	-	-	-	-	-	-	-	-	-	<0.1	<0.1	0.7	1.9	**1.4**	2.1	2.1	2.1	1	-	0.7	-	1	1.1	0.2
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	0.2	0.2	0.3	0.4	0.2	0.1	-	0.1	-	0.1	0.1	<0.1
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	180	220	-	<20	<20	<20	<20	380	64	440	-	-	-	-	-	-	-	-	-	<0.1	<0.1	0.1	0.5	0.3	0.5	0.5	0.4	0.2	-	0.2	-	0.2	0.3	<0.1
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	50	<50	-	<20	<20	<20	<20	80	<50	80	<0.5	<0.5	<0.5	<1	<0.5	<1	<1	<0.5	-	<0.1	0.4	0.5	1.3	**1.4**	2	2	2	0.9	-	0.8	-	1.1	1.2	0.2
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	200	84	-	<20	<20	<20	<20	270	<50	270	-	-	-	-	-	-	-	-	-	<0.1	1.7	1.7	7.7	**6.3**	9.5	9.5	9.5	4.5	-	3.4	-	4.5	4.8	1.1
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	<50	<50	-	<20	<20	<20	<20	<50	<50	<50	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	0.4	<0.1	0.2	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	1400	700	**2200**	<25	<25	320	320	1700	260	2300	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	9600	3800	**15,000**	<250	<250	3300	3300	9100	1600	14,000	<1	<1	<1	<2	<1	<10	<10	<1	**<70**	18	<1	7.4	<1	<0.5	<5	<5	<5	-	<2	<1	-	-	<1	<1
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	6500	1000	**9200**	36	36	3600	3200	4600	380	8600	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	52	<10	20	<10	**<5**	<50	<50	<50	-	<20	<10	-	-	<10	<10
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	7100	1300	**10,000**	58	57	4000	3400	5300	470	9800	<0.2	<0.5	<1	<2	1	1	1	-	-	65	<10	26	<10	**<5**	<50	<50	<50	-	<20	<10	-	-	<10	<10
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	600	120	850	<25	<25	280	240	530	<100	810	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						TRH										MAH									PAH														
						C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	TRH C6-C10 less BTEX (F1)	C10-C16	TRH>C10-C16 less Naphthalene (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	BTEX (Sum)	Styrene	Total MAH (1828.2)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						50	50	50	10	10	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.5	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.05	0.1	0.2	0.1	0.1	0.2	0.1	0.5	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit								40000								16	12800	4800		0.2	9600		480						160										
EPA Vic 1828.2 Category C upper limit								10000								4	3200	1200			2400		120						40										
EPA Vic 1828.2 Category D / Industrial Waste upper limit								5000								4	3200	1200			2400		120						20										
EPA Vic 1828.2 Fill material upper limit								1000								1								7					1										
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																		
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	5500	410	**7600**	29	29	3700	3700	3400	330	7500	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	1.6	<0.1	<2	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	3600	290	**5000**	<25	<25	2500	2500	2200	240	4900	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<2	<1	<2	<1	<0.5	<5	<5	<5	-	<2	<1	-	-	<1	<1
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	1500	110	**2200**	<25	<25	1200	1100	920	<100	2100	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	0.1	0.1	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	0.1	<0.1
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	-	<0.2	<0.1	-	-	<0.1	<0.1
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	0.2	0.4	1.2	**1.1**	1.6	1.6	1.6	-	1.6	0.6	-	-	0.8	0.1
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<1	<1	-	-	<0.1	0.2	0.1	0.6	0.71	1	1	0.9	-	1	0.4	-	-	0.5	<0.1

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

								PAH							Phenols Halogenated																		Phenols Non-Halogenated																		HVOLs		
								Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,3,4,5-tetrachlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,3,5,6-Tetrachlorophenol	2,4-dichlorophenol	2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	4-methylphenol	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1-trichloroethane	1,1-dichloroethene	1,1-dichloropropene
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL								0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.1	0.1	0.03	0.03	0.1	0.05	0.2	0.5	0.4	0.2	1	1	2	5	4	0.2	0.2	0.2	0.5	1	0.01	0.01	0.5
EPA Vic 1828.2 Category B upper limit														400	64000		320			3200	4800									32000								2200	4800	480	
EPA Vic 1828.2 Category C upper limit														100	16000		80			800	1200									8000								560	1200	120	
EPA Vic 1828.2 Category D / Industrial Waste upper limit														50	16000		80			800	1200									8000								560	1200	120	
EPA Vic 1828.2 Fill material upper limit														20											1												60			
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																															
Compass Environmental Data																																																		
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	<0.5	1.1	<0.5	<1 - 0.8	0.8	<0.5	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	1.2	4.7	<0.5	1 - 4.3	7.2	1.1	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	2.8	5.8	<0.5	20.5 - 42	12.1	2.5	**52.8**	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	4.5	9.6	<0.5	12 - 46.5	19.7	4.2	**100**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	3.5	6.4	<0.5	7.3 - 26	14	3.5	**64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	5.1	7.8	<0.5	61 - 68	17.9	4.2	**111**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		1.8	3.4	<0.5	42 - 51.7	7.1	1.6	**71.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		0.9	1.4	<0.5	9 - 10.6	3.4	0.8	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	0.8	5.2	<0.5	4 - 4.1	8.4	<0.5	**21.1**	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1	<5	<1	<0.01	<0.01	-
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	<0.5	2.6	<0.5	1 - 1.8	4.3	0.5	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	<0.5	2.5	<0.5	<0.5 - 2.3	4.4	<0.5	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	<0.5	2.3	<0.5	2 - 2.8	3.1	<0.5	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	<0.5	1.1	<0.5	1 - 1.3	1.3	<0.5	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

									PAH							Phenols Halogenated										Phenols Non-Halogenated												HVOLs		
									Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,3,4,5-tetrachlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,3,5,6-Tetrachlorophenol	2,4-dichlorophenol	2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	4-methylphenol	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1-trichloroethane	1,1-dichloroethene	1,1-dichloropropene
									mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL									0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.1	0.1	0.03	0.03	0.1	0.05	0.2	0.5	0.4	0.2	1	1	2	5	4	0.2	0.2	0.2	0.5	1	0.01	0.01	0.5
EPA Vic 1828.2 Category B upper limit															400	64000		320			3200	4800								32000								2200	4800	480	
EPA Vic 1828.2 Category C upper limit															100	16000		80			800	1200								8000								560	1200	120	
EPA Vic 1828.2 Category D / Industrial Waste upper limit															50	16000		80			800	1200								8000								560	1200	120	
EPA Vic 1828.2 Fill material upper limit															20											1												60			
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																					
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	<0.5	2.9	<0.5	3 - 3.4	3.5	<0.5	9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<1	<5	<5	<5	<1	<1	<1	<5	<1	<0.01	<0.01	-
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<5	<1	<0.01	<0.01	-
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	8	0.6	1.5	<0.5	5.3	7.8	**42.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	4.2	<0.5	0.8	<0.5	3.4	4.1	**22.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	1	<0.5	0.5	<0.5	<0.5	1.1	7	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<5	<1	<0.01	<0.01	-
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	0.6	<0.5	<0.5	<0.5	<0.5	0.8	3.3	<0.05	-	<0.05	-	-	<0.03	<0.03	-	-	-	-	-	<1	<1	<1	<5	<5	<5	<1	<1	<1	<5	<1	<0.01	<0.01	-
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas Partners Data																																								
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	0.2	<0.1	<0.1	<0.1	0.1	0.2	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<1	<10	<30	<30	<0.5	<0.5	<0.5	<0.5	<30	<0.5	<0.5	<0.5
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	0.9	<0.1	0.3	<0.1	0.5	0.8	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	5.3	<0.2	1.8	<0.2	3.4	5.6	**34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	2.9	0.2	0.7	0.2	2.2	2.5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	0.2	<0.1	<0.1	<0.1	<0.1	0.2	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	0.7	<0.1	0.1	<0.1	0.6	0.6	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	2.6	<0.1	1	<0.5 - 0.1	1.5	2.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<1	<10	<30	<30	<0.5	<0.5	<0.5	<0.5	<30	<0.5	<0.5	<0.5
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	11	0.3	3.2	0.6	5.7	11	**68**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	0.2	0.3	<0.1	1 - 1.3	0.7	0.2	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	0.1	<0.1	<0.1	<1 - 0.2	0.2	0.2	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	8.2	10	<1	51 - 64	25	7.7	**130**	<0.5	<1	<0.5	<1	<1	<0.5	<2	<1	<0.5	<2	**<10**	<4	<2	-	-	<20	<200	<40	<2	<2	<2	<40	**<600**	<1	<1	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	15	32	<10	290 - 400	64	12	**490**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	19	43	<10	450 - 660	84	16	**710**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

									PAH							Phenols Halogenated										Phenols Non-Halogenated											HVOLs		
									Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,3,4,5-tetrachlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,3,5,6-Tetrachlorophenol	2,4-dichlorophenol	2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	Phenols (Total Halogenated)	4-methylphenol	2-methylphenol	3/4-Methylphenol (m/p-cresol)	Cresol Total	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	Phenols (Total Non Halogenated)	1,1,1-trichloroethane	1,1-dichloroethene	1,1-dichloropropene
									mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL									0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.1	0.05	0.1	0.1	0.03	0.03	0.1	0.05	0.2	0.5	0.4	0.2	1	1	2	5	4	0.2	0.2	0.2	0.5	1	0.01	0.01	0.5
EPA Vic 1828.2 Category B upper limit															400	64000		320			3200	4800								32000							2200	4800	480	
EPA Vic 1828.2 Category C upper limit															100	16000		80			800	1200								8000							560	1200	120	
EPA Vic 1828.2 Category D / Industrial Waste upper limit															50	16000		80			800	1200								8000							560	1200	120	
EPA Vic 1828.2 Fill material upper limit															20											1											60			
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																			
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	0.4	2.6	<0.1	3.9 - 5	4.9	0.2	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	<1	<3	<1	2.6 - 7	3.7	<1	6.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	2.2	<0.1	0.6	<0.1	1.2	2.2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	1	<0.1	0.4	<0.1	0.2	1.1	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						Halogenated Vol. Organics																												CHCs		
						1,1,1,2-tetrachloroethane	1,2-dibromoethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane	1,2-dichloropropane	1,1,2-trichloroethane	4-chlorotoluene	1,1-dichloroethane	2,2-dichloropropane	Bromodichloromethane	Bromoform	2-chlorotoluene	1,2-dibromo-3-chloropropane	Carbon tetrachloride	1,2,3-trichloropropane	Bromobenzene	1,3-dichloropropane	Bromochloromethane	Chlorobenzene	Chlorodibromomethane	Chloroform	cis-1,2-dichloroethene	trans-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	trans-1,3-dichloropropene	Dichloromethane	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	1,2,3,4-tetrachlorobenzene	1,3-dichlorobenzene	Hexachlorocyclopentadiene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.01	0.5	0.02	0.02	0.5	0.04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.5	0.5	0.5	0.5	0.02	0.5	0.02	0.01	0.02	0.5	0.5	0.5	0.2	0.02	0.02	2	0.02	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit						1600		48	210		190								48					4800		960						64	800	80		4.8			
EPA Vic 1828.2 Category C upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Category D / Industrial Waste upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Fill material upper limit																																							
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																		
Compass Environmental Data																																							
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						Halogenated Vol. Organics																												CHCs		
						1,1,1,2-tetrachloroethane	1,2-dibromoethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane	1,2-dichloropropane	1,1,2-trichloroethane	4-chlorotoluene	1,1-dichloroethane	2,2-dichloropropane	Bromodichloromethane	Bromoform	2-chlorotoluene	1,2-dibromo-3-chloropropane	Carbon tetrachloride	1,2,3-trichloropropane	Bromobenzene	1,3-dichloropropane	Bromochloromethane	Chlorobenzene	Chlorodibromomethane	Chloroform	cis-1,2-dichloroethene	trans-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	trans-1,3-dichloropropene	Dichloromethane	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	1,2,3,4-tetrachlorobenzene	1,3-dichlorobenzene	Hexachlorocyclopentadiene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.01	0.5	0.02	0.02	0.5	0.04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.5	0.5	0.5	0.5	0.02	0.5	0.02	0.01	0.02	0.5	0.5	0.5	0.2	0.02	0.02	2	0.02	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit						1600		48	210		190								48					4800		960						64	800	80		4.8			
EPA Vic 1828.2 Category C upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Category D / Industrial Waste upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Fill material upper limit																																							
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																		
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	<0.01	-	<0.02	<0.02	-	<0.04	-	-	-	-	-	-	-	<0.01	-	-	-	-	<0.02	-	<0.02	<0.01	<0.02	-	-	-	<0.4	<0.02	<0.02	-	<0.02	-	-	-
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas Partners Data																																							
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<1	<0.1	<0.1	<0.1
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<1	<0.1	<0.1	<0.1
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	<1	-	<1	<1	-	<1	-	-	-	-	-	-	-	<1	-	-	-	-	<1	-	<1	<1	<1	-	-	-	<2	<1	<1	-	<1	-	-	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						Halogenated Vol. Organics																																	CHCs				
						1,1,1,2-tetrachloroethane	1,2-dibromoethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane	1,2-dichloropropane	1,1,2-trichloroethane	4-chlorotoluene	1,1-dichloroethane	2,2-dichloropropane	Bromodichloromethane	Bromoform	2-chlorotoluene	1,2-dibromo-3-chloropropane	Carbon tetrachloride	1,2,3-trichloropropane	Bromobenzene	1,3-dichloropropane	Bromochloromethane	Chlorobenzene	Chlorodibromomethane	Chloroform	cis-1,2-dichloroethene	trans-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	trans-1,3-dichloropropene	Dichloromethane	Tetrachloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	1,2,3,4-tetrachlorobenzene	1,3-dichlorobenzene	Hexachlorocyclopentadiene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.01	0.5	0.02	0.02	0.5	0.04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.5	0.5	0.5	0.5	0.02	0.5	0.02	0.01	0.02	0.5	0.5	0.5	0.2	0.02	0.02	2	0.02	0.1	0.1	0.1
EPA Vic 1828.2 Category B upper limit						1600		48	210		190								48					4800		960						64	800	80		4.8			
EPA Vic 1828.2 Category C upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Category D / Industrial Waste upper limit						400		12	52		48								12					1200		240						16	200	20		1.2			
EPA Vic 1828.2 Fill material upper limit																																								
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																			
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

| | | |

compassenvironmental

Project: 21135
Client: Time Place
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Table 1 - Soil Off-site Disposal Results

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| | | |

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Project: 21135
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Table 1 - Soil Off-site Disposal Results

								Organochlorine Pesticides								Herbicides		Polychlorinated Biphenyls								Solvents	Explosives		Phthalates	Organic	Organo Metals	Asbestos
								Oxychlordane	Endosulfan I	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	EPA Vic 1828.2 OCP (Total)*	EPA Vic 1828.2 Other OCP (Total)*	Hedonal	Dinoseb	Arochlor 1221	Arochlor 1232	Arochlor 1016	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Methyl Ethyl Ketone	2,4-Dinitrotoluene	Nitrobenzene	Bis(2-ethylhexyl) phthalate	Formaldehyde	Tributyltin oxide (TBTO)	Asbestos Detected
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL								0.05	0.03	0.03	0.03	0.03	0.05	0.03	0.03	0.03	0.03	0.1	0.03	0.001	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	2	0.01	0.1
EPA Vic 1828.2 Category B upper limit															4.8				50	480										32000	21	320	160	8000	10	
EPA Vic 1828.2 Category C upper limit															1.2				10	120								50	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Category D / Industrial Waste upper limit															1.2				10	120								2	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Fill material upper limit																		1										2								
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																															
Compass Environmental Data																																				
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.2	<1	<1	<0.5	<0.5	<2	<0.01	-
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

								Organochlorine Pesticides																								Herbicides		Polychlorinated Biphenyls								Solvents	Explosives		Phthalates	Organic	Organo Metals	Asbestos
								Oxychlordane	Endosulfan I	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	EPA Vic 1828.2 OCP (Total)*	EPA Vic 1828.2 Other OCP (Total)*	Hedonal	Dinoseb	Arochlor 1221	Arochlor 1232	Arochlor 1016	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Methyl Ethyl Ketone	2,4-Dinitrotoluene	Nitrobenzene	Bis(2-ethylhexyl) phthalate	Formaldehyde	Tributyltin oxide (TBTO)	Asbestos Detected
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL								0.05	0.03	0.03	0.03	0.03	0.05	0.03	0.03	0.03	0.03	0.1	0.03	0.001	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	2	0.01	0.1
EPA Vic 1828.2 Category B upper limit															4.8				50	480										32000	21	320	160	8000	10	
EPA Vic 1828.2 Category C upper limit															1.2				10	120									50	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Category D / Industrial Waste upper limit															1.2				10	120									2	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Fill material upper limit																		1											2							
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																																	
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.001	<5	-	-	-	-	-	-	-	<0.1	<1	<1	<0.5	<0.5	<2	<0.01	-
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Douglas Partners Data																																						
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	-	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	<50	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

								Organochlorine Pesticides											Herbicides		Polychlorinated Biphenyls								Solvents	Explosives		Phthalates	Organic	Organo Metals	Asbestos
								Oxychlordane	Endosulfan I	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	EPA Vic 1828.2 OCP (Total)*	EPA Vic 1828.2 Other OCP (Total)*	Hedonal	Dinoseb	Arochlor 1221	Arochlor 1232	Arochlor 1016	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Methyl Ethyl Ketone	2,4-Dinitrotoluene	Nitrobenzene	Bis(2-ethylhexyl) phthalate	Formaldehyde	Tributyltin oxide (TBTO)	Asbestos Detected
								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL								0.05	0.03	0.03	0.03	0.03	0.05	0.03	0.03	0.03	0.03	0.1	0.03	0.001	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	2	0.01	0.1
EPA Vic 1828.2 Category B upper limit															4.8				50	480									32000	21	320	160	8000	10	
EPA Vic 1828.2 Category C upper limit															1.2				10	120								50	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Category D / Industrial Waste upper limit															1.2				10	120								2	8000	5.2	80	40	2000	2.5	
EPA Vic 1828.2 Fill material upper limit																		1										2							
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																														
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

		Other	PFAS																											
		Tot +ve report Chlordane	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit																														
EPA Vic 1828.2 Category C upper limit																														
EPA Vic 1828.2 Category D / Industrial Waste upper limit																														
EPA Vic 1828.2 Fill material upper limit																					0.001[#3]				0.002[#3]	0.001[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																									
Compass Environmental Data																														
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.001**	<0.0002	<0.0002	<0.0002	0.0005	0.0004	<0.0002	<0.0002
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.0002	<0.0002
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0009	0.0005	<0.0002	<0.0002
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0021	<0.001	<0.0002	<0.0002	<0.0002	0.0003	0.0003	**0.014**	0.0028	<0.0002	<0.0002	**0.007**	0.0004	0.003	0.0007
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						Other	PFAS																							
						Tot +ve report Chlordane	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.1	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit																														
EPA Vic 1828.2 Category C upper limit																														
EPA Vic 1828.2 Category D / Industrial Waste upper limit																														
EPA Vic 1828.2 Fill material upper limit																								0.001[#3]				0.002[#3]	0.001[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																										
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	0.0003
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.0002	<0.0002
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.0002	<0.0002
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas Partners Data																														
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project: 21135
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Table 1 - Soil Off-site Disposal Results

		Other	PFAS																										
		Tot +ve report Chlordane	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit																													
EPA Vic 1828.2 Category C upper limit																													
EPA Vic 1828.2 Category D / Industrial Waste upper limit																													
EPA Vic 1828.2 Fill material upper limit																				0.001[#3]				0.002[#3]	0.001[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																								
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						PFAS					
						Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.0005	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit											
EPA Vic 1828.2 Category C upper limit											
EPA Vic 1828.2 Category D / Industrial Waste upper limit											
EPA Vic 1828.2 Fill material upper limit									0.004[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**						
Compass Environmental Data											
TP1	TP1 / 0.3	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-
TP1	TP110322A	11/03/2022	EM2204517	Field_D	Fill	-	-	-	-	-	-
TP1	TP201/0.3	11/03/2022	871386	Interlab_D	Fill	-	-	-	-	-	-
TP1	TP1 / 2.0 PFAS	11/03/2022	EM2204517	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0019	0.0015	0.0019
TP1	TP1 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-
TP2	TP2 / 0.5 PFAS	11/03/2022	EM2204517	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0015	0.0015	0.0015
TP2	TP2 / 1.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-
TP2	TP2 / 3.0	11/03/2022	EM2204517	Normal	Fill	-	-	-	-	-	-
TP2	TP2 / 3.0 PFAS	11/03/2022	EM2204517	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0017	0.0012	0.0017
B1	B1/0.2	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-
B1	B1/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
B2	B2/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-
B2	B2/1.0	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-
B2	B2/1.2	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
B3	B3/0.3	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
B3	B3/0.6	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B4	B4/0.5	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B5	B5/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B5	B5/0.7	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B6	B6/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B6	B6/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B6	B6/0.4 PFAS	8/08/2022	EM2215210	Normal	Fill	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
B7	B7/0.35	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B080822A	B080822A	8/08/2022	EM2215210	Field_D	Fill	-	-	-	-	-	-
B207	B207/0.35	8/08/2022	912963	Interlab_D	Fill	-	-	-	-	-	-
B7	B7/0.9	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2215210	Normal	Fill	<0.0005	<0.0002	<0.0002	**0.0306**	0.021	0.0273
B8	B8/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B8	B8/0.2 PFAS	8/08/2022	EM2215210	Normal	Fill	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
B8	B8/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B9	B9/0.3	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B9	B9/0.6	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2215210	Normal	Fill	-	-	-	-	-	-
B10	B10/0.4	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
GW1	GW1/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-
GW1	GW1/0.2 PFAS	3/08/2022	EM2214797	Normal	Fill	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
GW1	GW1/0.6	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW1	GW1/1.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW1	GW1/3.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW1	GW1/7.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW2	GW2/0.2	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-
GW2	GW2/2.0	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW2	GW2/3.5	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
GW3	GW3/0.5	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-
GW050822A	GW050822A	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-
GW203	GW203/0.5	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-
GW3A	GW3A/1.0	8/08/2022	EM2215210	Normal	Natural	-	-	-	-	-	-
GW3A	GW3A/1.0 PFAS	8/08/2022	EM2215210	Normal		<0.0005	<0.0002	<0.0002	0.0012	0.0002	0.0002
GW3A	GW3A/2.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-
GW3A	GW3A/3.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-
GW3A	GW3A/7.0	8/08/2022	EM2215210	Normal		-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2215104	Normal	Fill	-	-	-	-	-	-
GW050822B	GW050822B	5/08/2022	EM2215104	Field_D	Fill	-	-	-	-	-	-
GW204	GW204/0.2	5/08/2022	912560	Interlab_D	Fill	-	-	-	-	-	-
GW4	GW4/1.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
GW4	GW4/1.0 PFAS	5/08/2022	EM2215104	Normal	Natural	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
GW4	GW4/2.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
GW4	GW4/3.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-

Project: 21135
Client: Time Place
Site: Northcote

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						PFAS					
						Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.0005	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit											
EPA Vic 1828.2 Category C upper limit											
EPA Vic 1828.2 Category D / Industrial Waste upper limit											
EPA Vic 1828.2 Fill material upper limit									0.004[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**						
GW4	GW4/7.0	5/08/2022	EM2215104	Normal	Natural	-	-	-	-	-	-
GW5	GW5/0.1	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
GW5	GW310822	31/08/2022	EM2217041	Field_D	Fill	-	-	-	-	-	-
GW5	GW205/0.1	31/08/2022	919763	Interlab_D	Fill	-	-	-	-	-	-
GW5	GW5/0.5 PFAS	31/08/2022	EM2217041	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0002	0.0002	0.0002
GW5	GW5/1.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
GW5	GW5/2.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-
GW5	GW5/3.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-
GW5	GW5/6.0	31/08/2022	EM2217041	Normal	Natural	-	-	-	-	-	-
LFG1	LFG1/0.2	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG1	LFG1/0.85	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG1	LFG1/1.1 PFAS	2/08/2022	EM2214832	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0009	0.0004	0.0009
LFG1	LFG1/1.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG1	LFG1/2.8	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG1	LFG1/5.5	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG2	LFG2/1.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG2	LFG2/3.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2214832	Normal	Fill	-	-	-	-	-	-
LFG3	LFG3/0.1	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2214797	Normal	Fill	-	-	-	-	-	-
LFG3	LFG3/6.8	3/08/2022	EM2214797	Normal	Natural	-	-	-	-	-	-
LFG4	LFG4 / 0.1	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-
LFG4	LFG4 / 2.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-
LFG4	LFG4 / 6.0	4/08/2022	EM2215060	Normal	Natural	-	-	-	-	-	-
LFG6	LFG6 / 0.2	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-
LFG6	LFG6 / 0.5 PFAS	4/08/2022	EM2215060	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0009	0.0009	0.0009
LFG6	LFG6 / 1.0 + % Clay	4/08/2022	EM2215060	Normal	Fill	-	-	-	-	-	-
LFG7	LFG7/0.15 + %CLAY	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
LFG7	LFG7/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	<0.0005	<0.0002	<0.0002	0.0008	0.0008	0.0008
LFG7	LFG7/3.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
LFG8	LFG8/0.15	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
LFG8	LFG8/0.15 PFAS	31/08/2022	EM2217041	Normal	Fill	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
LFG8	LFG8/1.0	31/08/2022	EM2217041	Normal	Fill	-	-	-	-	-	-
PACM1	PACM1	31/08/2022	EM2217041	Normal		-	-	-	-	-	-
Douglas Partners Data											
DP01	DP01-0.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP01	DP01-3.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP02	DP02-0.2	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-
DP02	DP02-3.9	13/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP03	DP03-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-
DP04	DP04-0.5	12/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-
DP05	DP05-0.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-
DP06	DP06-0.4	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP06	DP06-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP06	DP06-2.8	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP07	DP07-1.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP08	DP08-0.5	11/11/2019	19-53958	Normal	Fill	-	-	-	-	-	-
DP09	DP09-1.9	11/11/2019	19-53958	Normal	Natural	-	-	-	-	-	-
DP10	DP10-0.35	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP11	DP11-0.4	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP12	DP12-0.05	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP12	DP12-0.4	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-
DP13	DP13-0.15	22/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP14	DP14-0.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-
DP14	DP14-1.4	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-
DP14	DP14-1.9	24/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-

Project: 21135
Client: Time Place
Site: Northcote

Table 1 - Soil Off-site Disposal Results

						PFAS					
						Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.0005	0.0002	0.0002	0.0002	0.0002	0.0002
EPA Vic 1828.2 Category B upper limit											
EPA Vic 1828.2 Category C upper limit											
EPA Vic 1828.2 Category D / Industrial Waste upper limit											
EPA Vic 1828.2 Fill material upper limit									0.004[#3]		
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**						
DP15	DP15-0.18	25/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP15	DP15-0.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-
DP15	DP15-1.4	25/06/2021	26537-A	Normal	Natural	-	-	-	-	-	-
DP16	DP16-0.13	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP16	DP16-0.4	23/06/2021	26537	Normal	Natural	-	-	-	-	-	-
DP17	DP17-0.15	23/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP18	DP18-0.3	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-
DP19	DP19-0.25	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP20	DP20-0.2	21/06/2021	26537	Normal	Natural	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-
DP21	DP21-1.2	21/06/2021	26537	Normal	Fill	-	-	-	-	-	-

Env Stds Comments
#1:Based on corrosive wastes, as per EPA Victoria Publication 1828.2.
#2:Based on non-corrosive acids and alkaline wastes, as per EPA Victoria Publication 1828.2.
#3:Based on EPA Designation - Classification of PFAS-impacted Soil (EPA 2022).

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil Results Leachability

						Metals																PAH				
						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Benzo(b+k)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL						0.01	0.01	0.1	0.01	0.1	0.002	0.01	0.01	0.01	0.01	0.01	0.00005	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.001	0.001	0.001	0.001
EPA Vic 1828.2 Category B upper limit						1.2	4	800		1600	0.8			800	4		0.4	20	8	4				1200					
EPA Vic 1828.2 Category C upper limit						0.3	1	200		400	0.2			200	1		0.1	5	2	1				300					
EPA Vic 1828.2 Category D / Industrial Waste upper limit						0.15	0.5	100	3	200	0.1			100	0.5		0.05	2.5	1	0.5	5			150					
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																							
B3	B3/0.6	5/08/2022	EM2216071	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0037 - 0.0047	<0.001	<0.001	<0.001
B4	B4/0.2	8/08/2022	EM2216071	Normal	Fill	<0.01	<0.01	<0.1	<0.01	<0.1	<0.005	<0.01	<0.1 - 0.02	<0.1 - 0.02	<0.01	0.44 - 2.8	<0.0001	<0.01	<0.1 - 0.06	<0.01	<0.01	<0.01	<0.01	0.04 - 0.2	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2216071	Normal	Fill	<0.01	<0.01	<0.1	<0.01	<0.1	<0.005	<0.01	<0.1 - 0.02	<0.1 - 0.02	<0.01	0.52 - 1.8	<0.0001	<0.01	<0.1 - 0.06	<0.01	<0.01	<0.01	<0.01	<0.1 - 0.05	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	<0.01	-	-	-	0.004	<0.01	-	<0.01	3.6	-	<0.001	<0.01	0.02	<0.01	<0.01	<0.01	-	0.28	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001
DP14	DP14-0.4	24/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	0.022	<0.001	0.004	<0.001
DP14	DP14-0.11	24/06/2021	26537-A	Normal	Fill	-	<0.05	-	-	-	<0.01	<0.01	-	<0.01	<0.03	-	<0.00005	-	0.1	-	-	-	-	<0.02	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	0.49	<0.001	0.19	<0.001
GW3	GW050822A	5/08/2022	EM2216071	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0101 - 0.0322	<0.001	0.003 - 0.0042	<0.001
GW4	GW4/0.2	5/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0028 - 0.0052	<0.001	<0.001	<0.001
LFG2	LFG2/6.0	2/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001 - 0.0013	0.002 - 0.0024	<0.001
LFG3	LFG3/2.0	3/08/2022	EM2216071	Normal	Fill	<0.01	<0.01	<0.1 - 0.6	<0.01	<0.1	<0.005	<0.01	<0.01	0.01 - 0.2	<0.1 - 0.01	0.16 - 23.9	<0.0001	<0.01	0.01 - 0.1	<0.01	<0.01	<0.01	<0.01	0.02 - 0.6	-	-	-	-	-

Env Stds Comments

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil Results Leachability

						PAH														Phenols Halogenated			
						Benzo(a) pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	Pentachlorophenol	2,4-dichlorophenol
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL						0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0005	0.001	0.001	0.005	0.001
EPA Vic 1828.2 Category B upper limit						0.004															1600	8		80
EPA Vic 1828.2 Category C upper limit						0.001															400	2		20
EPA Vic 1828.2 Category D / Industrial Waste upper limit						0.0005															200	1		10
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																			
B3	B3/0.6	5/08/2022	EM2216071	Normal	Natural	<0.0005	-	<0.0005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0101 - 0.0112	<0.001	0.0409 - 0.0776	0.0091 - 0.0114	<0.001	0.0638 - 0.105	-	-	-	-
B4	B4/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B10	B10/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-56654	Normal	Fill	<0.001	0.002	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.003	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537-A	Normal	Fill	<0.0005	-	-	-	<0.001	-	-	<0.001	<0.001	<0.001	0.012	<0.001	0.28	0.01	<0.001	-	<0.001	<0.001	<0.005	<0.001
DP14	DP14-0.11	24/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537-A	Normal	Fill	<0.0005	-	-	-	<0.001	-	-	<0.001	<0.001	0.09	0.29	<0.001	1.7	0.59	0.09	-	-	-	-	-
GW3	GW050822A	5/08/2022	EM2216071	Field_D	Fill	<0.0005	-	<0.0005	-	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011 - 0.0013	0.0138 - 0.0298	<0.001	0.0361 - 0.351	0.0174 - 0.027	<0.001 - 0.0014	0.0831 - 0.445	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2216071	Normal	Fill	<0.0005	-	<0.0005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0068 - 0.0127	<0.001	0.0337 - 0.0446	0.0069 - 0.0095	<0.001	0.0502 - 0.072	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2216071	Normal	Fill	<0.0005	-	<0.0005	-	<0.001	<0.001	<0.001	<0.001	<0.001	0.0019 - 0.0023	0.0035 - 0.0038	<0.001	0.0033 - 0.0034	0.0105 - 0.0125	0.0018	0.0235 - 0.027	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil Results Leachability

						Phenols Halogenated				Phenols Non-Halogenated								PFAS												
						2-chlorophenol	2,3,4,6-tetrachlorophenol	2,6-dichlorophenol	4-chloro-3-methylphenol	4-methylphenol	2-methylphenol	4,6-Dinitro-2-methylphenol	2,4-dinitrophenol	Phenol	2,4-dimethylphenol	2-nitrophenol	4-nitrophenol	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL						0.001	0.001	0.001	0.005	0.002	0.001	0.02	0.02	0.001	0.001	0.001	0.02	0.00005	0.00005	0.00005	0.00005	0.00005	0.00002	0.00005	0.00005	0.00002	0.00005	0.00002	0.0001	0.00002
EPA Vic 1828.2 Category B upper limit						120																								
EPA Vic 1828.2 Category C upper limit						30																								
EPA Vic 1828.2 Category D / Industrial Waste upper limit						15																								
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																									
B3	B3/0.6	5/08/2022	EM2216071	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4	B4/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B7	B7/0.9 PFAS	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00002	<0.00005	<0.00005	<0.00002	<0.00005	0.00004	<0.0001	<0.00002
B10	B10/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP07	DP07-4.9	11/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.4	24/06/2021	26537-A	Normal	Fill	<0.001	<0.001	<0.001	<0.005	<0.002	<0.001	<0.02	<0.02	<0.001	<0.001	<0.001	<0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
DP14	DP14-0.11	24/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DP21	DP21-0.8	21/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3	GW050822A	5/08/2022	EM2216071	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4	GW4/0.2	5/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG2	LFG2/6.0	2/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LFG3	LFG3/2.0	3/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments

compassenvironmental

Project: 21135
Client: Time Place
Site: Northcote

Table 2 - Soil Results Leachability

						PFAS															
						Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFASs	Sum of PFHxS and PFOS	Sum of WA DWER PFAS (n=10)*	
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
EQL						0.00002	0.00002	0.00002	0.00002	0.00001	0.00002	0.00002	0.00002	0.00001	0.00001	0.00002	0.00002	0.00005	0.00002	0.00002	0.00001	0.00001	0.00001	
EPA Vic 1828.2 Category B upper limit																								
EPA Vic 1828.2 Category C upper limit																								
EPA Vic 1828.2 Category D / Industrial Waste upper limit																								
Location	**Field ID**	**Sampled Date**	**Lab Report No.**	**Sample Type**	**Matrix Description**																			
B3	B3/0.6	5/08/2022	EM2216071	Normal	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B4	B4/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B7	B7/0.9 PFAS	8/08/2022	EM2216071	Normal	Fill	<0.00002	<0.00002	<0.00002	<0.00002	0.00033	0.00008	<0.00002	<0.00002	0.0001	0.00001	0.00007	<0.00002	<0.00005	<0.00002	<0.00002	0.00063	0.00043	0.00056	
B10	B10/0.2	8/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP02	DP02-0.5	13/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP07	DP07-4.9	11/11/2019	19-56654	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP14	DP14-0.4	24/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP14	DP14-0.11	24/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DP21	DP21-0.8	21/06/2021	26537-A	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GW3	GW050822A	5/08/2022	EM2216071	Field_D	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GW4	GW4/0.2	5/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LFG2	LFG2/6.0	2/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LFG3	LFG3/2.0	3/08/2022	EM2216071	Normal	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Env Stds Comments

ATTACHMENT D

Compass Soil Laboratory Reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2204517**	Page	: 1 of 23
Amendment	: **1**		
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 15-Mar-2022 10:50
Order number	: ----	Date Analysis Commenced	: 16-Mar-2022
C-O-C number	: ----	Issue Date	: 28-Mar-2022 18:10
Sampler	: SH		
Site	: NORTHCOTE		
Quote number	: MEBQ/266/21		
No. of samples received	: 22		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP074-UT: Particular sample (EM2204517_015), shows poor matrix spike recovery due to the sample matrix interference. Confirmed by re-analysis.
- EG048G: EM2204276 #12 poor matrix spike recovery for hexavalent chromium due to matrix effects. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EP231X: Poor matrix spike recovery for sample EM2204243-020 due to sample matrix interference.
- (28/03/2022): This report has being amended following the request to remove P-30/3 from samples 001, 009, 019, 020.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	9.2	----	8.0	----	8.0
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	16.5	----	14.6	13.2
Moisture Content	----	1.0	%	20.4	----	16.8	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	300	----	<100	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	6	----	<5	----	<5
Barium	7440-39-3	10	mg/kg	130	----	60	----	80
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	<1
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	<1
Cobalt	7440-48-4	2	mg/kg	7	----	6	----	----
Copper	7440-50-8	5	mg/kg	----	----	----	----	18
Lead	7439-92-1	5	mg/kg	17	----	15	----	26
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg	20	----	18	----	20
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	<5
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	<2
Tin	7440-31-5	5	mg/kg	----	----	----	----	<5
Zinc	7440-66-6	5	mg/kg	34	----	62	----	64
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	----	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	----	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	----	----	310
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	----	----	<2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	----	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	----	<0.02

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	----	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		----	----	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		----	----	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	----	----	<5
Dinoseb	88-85-7	5	mg/kg		----	----	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	----	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	----	<0.5
EP075E: Nitroaromatics and Ketones									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Nitrobenzene	98-95-3	0.5	mg/kg	----	----	----	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	----	----	----	<1.0
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	----	----	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	----	----	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	----	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	----	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	**0.0010**	----	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	**0.0005**	----	**0.0015**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	**0.0004**	----	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0019**	----	**0.0015**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0015**	----	**0.0015**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0019**	----	**0.0015**	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**102**
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	----	**113**
Toluene-D8	2037-26-5	0.1	%		----	----	----	----	**107**
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	----	**121**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**104**	----	**102**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**93.4**	----	**92.3**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**70.4**	----	**70.5**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1 / 0.3	TP1 / 2.0 PFAS	TP1 / 3.0	TP2 / 0.5 PFAS	TP2 / 1.0
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EM2204517-001	EM2204517-008	EM2204517-009	EM2204517-014	EM2204517-015
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		104	----	102	----	----
Anthracene-d10	1719-06-8	0.5	%		113	----	118	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		110	----	107	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	----	86.5
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	----	81.2
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	----	74.1
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	----	83.2
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	----	78.6
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	----	96.8
Anthracene-d10	1719-06-8	0.025	%		----	----	----	----	93.5
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	----	84.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.7	----	91.6	----	----
Toluene-D8	2037-26-5	0.2	%		79.8	----	81.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		83.8	----	85.4	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	83.8	----	102	----
13C8-PFOA	----	0.0002	%		----	102	----	107	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
				Result	Result	Result	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	**9.2**	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	**15.7**	----	----	----
Moisture Content	----	1.0	%	**17.4**	----	**18.8**	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	----
Arsenic	7440-38-2	5	mg/kg	**6**	----	**6**	----	----
Barium	7440-39-3	10	mg/kg	**150**	----	**80**	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Cobalt	7440-48-4	2	mg/kg	**6**	----	**13**	----	----
Lead	7439-92-1	5	mg/kg	**28**	----	**12**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	----
Nickel	7440-02-0	2	mg/kg	**23**	----	**50**	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	----
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	----
Zinc	7440-66-6	5	mg/kg	**54**	----	**43**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	**300**	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	<2	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		----	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		----	----	<0.5	----	----
EP074B: Oxygenated Compounds									
2-Butanone (MEK)	78-93-3	1	mg/kg		----	----	<1	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		----	----	<0.02	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg		----	----	<0.01	----	----
Methylene chloride	75-09-2	0.4	mg/kg		----	----	<0.4	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		----	----	<0.02	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		----	----	<0.01	----	----
Chloroform	67-66-3	0.02	mg/kg		----	----	<0.02	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		----	----	<0.01	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		----	----	<0.01	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg		----	----	<0.02	----	----
Trichloroethene	79-01-6	0.02	mg/kg		----	----	<0.02	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		----	----	<0.04	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		----	----	<0.01	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg		----	----	<0.02	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		----	----	<0.02	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	----	<0.02	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		----	----	<0.02	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	<0.02	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	<0.02	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	<0.01	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP074I: Volatile Halogenated Compounds - Continued									
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	<0.01	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	<0.01	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	<0.03	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	<0.03	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	<0.05	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	<0.05	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	----	<1	----	----
2-Methylphenol	95-48-7	1	mg/kg		----	----	<1	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	----
2-Nitrophenol	88-75-5	1	mg/kg		----	----	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	<1	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	<5	----	----
4-Nitrophenol	100-02-7	5	mg/kg		----	----	<5	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	<5	----	----
Dinoseb	88-85-7	5	mg/kg		----	----	<5	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	<5	----	----
^ Cresols (Total)	----	1	mg/kg		----	----	<1	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	**1.2**	----	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	<0.5	----	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	<0.5	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	<1.0	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
			Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
				Result	Result	Result	----	----
EP075l: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	<0.03	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	<0.03	----	----
beta-BHC	319-85-7	0.03	mg/kg	----	----	<0.03	----	----
gamma-BHC	58-89-9	0.03	mg/kg	----	----	<0.03	----	----
delta-BHC	319-86-8	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor	76-44-8	0.03	mg/kg	----	----	<0.03	----	----
Aldrin	309-00-2	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	<0.03	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	<0.03	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.03	mg/kg	----	----	<0.03	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	<0.03	----	----
Endrin	72-20-8	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
^ Chlordane	57-74-9	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	<50	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	<10	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	**0.0003**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	**0.0009**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	**0.0005**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0017**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0012**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0017**	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	<0.001	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	<0.01	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**97.3**	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	**85.0**	----	----
Toluene-D8	2037-26-5	0.1	%		----	----	**80.4**	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	**82.7**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**104**	----	**104**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**93.5**	----	**93.2**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**72.9**	----	**70.1**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**104**	----	**103**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP2 / 3.0	TP2 / 3.0 PFAS	TP110322A	----	----
				Sampling date / time	11-Mar-2022 00:00	11-Mar-2022 00:00	11-Mar-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2204517-019	EM2204517-020	EM2204517-021	--------	--------
					Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		113	----	115	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		110	----	110	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	86.2	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	81.3	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	76.3	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	84.4	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	80.2	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	97.2	----	----
Anthracene-d10	1719-06-8	0.025	%		----	----	87.9	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	91.9	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.6	----	84.6	----	----
Toluene-D8	2037-26-5	0.2	%		80.0	----	78.6	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		84.3	----	83.4	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	107	----	----	----
13C8-PFOA	----	0.0002	%		----	97.6	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB110322	----	----	----	----
				Sampling date / time	11-Mar-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2204517-022	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**91.9**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**97.3**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

COC received at A. Cos

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135-11165

| | | |

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11165

Project Number: 21135			Laboratory: ALS Springvale			Turnaround Time:		1 day		2 days			3 days			5 days							
Project Location: Northcote			Address: 4 Westall Road, Springvale					Analysis Requested															
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9526																				
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-18																				
	Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS - 28	pH CaCl2	Sulphide	TRH								
17	TP2/2.0		11/03/22		1	ICE	1																
18	TP2/2.0 PFAS		11/03/22		↓	↓	1																
19	TP2/3.0		11/03/22		↓	↓	1			✓	✓												
20	TP2/3.0 PFAS		11/03/22		↓	↓	1					✓											
21	TP110322A		11/03/22		↓	↓	1			✓	✓												
22	TB110322		11/03/22		2	↓	5								✓								

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols, halogenated and non-halogenated
pH as $CaCl_2$

* KEY: Preservative: 1 = NaOH; 2 = HNO_3; 3 = H_2SO_4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil, 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: John Perks	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: COMPASS	Company:	Company:	Company:
Date/time: 15/3/22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

CERTIFICATE OF ANALYSIS

Work Order	: **EM2214797**	Page	: 1 of 21
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: LAB RESULTS	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 03-Aug-2022 16:15
Order number	: ----	Date Analysis Commenced	: 05-Aug-2022
C-O-C number	: 21135-11479	Issue Date	: 11-Aug-2022 18:37
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 25		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2215048 #1 Poor matrix spike recovery for Hexavalent Chromium due to matrix interferences. Confirmed by re-analysis.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EG005-T : EM2215048 #13 Poor duplicate precision for total Lead due to sample matrix. Confirmed by re-digestion and re-analysis.
- EP075(SIM): EM2215048_016 Poor duplicate precision due to sample heterogeneity. Confirmed by visual inspection.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	8.3	8.2	----	----	----
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	----	9.7	----	----	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	71	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	10.3	----	----	----	----
Moisture Content	----	1.0	%	----	11.8	10.7	11.8	12.3
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	27	----	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	2.61	----	----	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	0.7	----	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	----	1.0	----	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	----	0.2	----	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	----	0.7	----	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	----	2.7	----	----	----
ø Exchangeable Calcium Percent	----	0.2	%	----	26.0	----	----	----
ø Exchangeable Magnesium Percent	----	0.2	%	----	38.7	----	----	----
ø Exchangeable Potassium Percent	----	0.2	%	----	8.3	----	----	----
ø Exchangeable Sodium Percent	----	0.2	%	----	27.0	----	----	----
ø Calcium/Magnesium Ratio	----	0.2	-	----	0.7	----	----	----
ø Magnesium/Potassium Ratio	----	0.2	-	----	4.7	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	<100	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	<5	----	<5	7	6
Barium	7440-39-3	10	mg/kg	50	----	20	30	50
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	----	9	22	21

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
					EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
					Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued									
Cobalt	7440-48-4	2	mg/kg		----	----	<2	<2	<2
Copper	7440-50-8	5	mg/kg		**28**	----	<5	**23**	**31**
Iron	7439-89-6	0.005	%		----	**0.023**	----	----	----
Lead	7439-92-1	5	mg/kg		<5	----	**6**	**11**	**14**
Manganese	7439-96-5	5	mg/kg		----	----	<5	**9**	**6**
Molybdenum	7439-98-7	2	mg/kg		<2	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**114**	----	<2	**3**	**4**
Selenium	7782-49-2	5	mg/kg		<5	----	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	----	<2	<2	<2
Tin	7440-31-5	5	mg/kg		<5	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		----	----	<5	**10**	**11**
Zinc	7440-66-6	5	mg/kg		**46**	----	<5	**29**	**33**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	----	----	----	----
EK030: Cyanide Amenable to Chlorination									
Cyanide amenable to chlorination	----	1	mg/kg		<1	----	----	----	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		**250**	----	----	----	----
EP004: Organic Matter									
Organic Matter	----	0.5	%		----	<0.5	----	----	----
Total Organic Carbon	----	0.5	%		----	<0.5	----	----	----
EP010: Formaldehyde									
Formaldehyde	50-00-0	2	mg/kg		<2	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	<1	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	----	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg	<0.01	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg	<0.01	----	----	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg	<0.01	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	**1.2**	**1.2**
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	----	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	<1	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Dinoseb	88-85-7	5	mg/kg		<5	----	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	----	----	----
^ Cresols (Total)	----	1	mg/kg		<1	----	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		<0.5	----	----	----	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		<1.0	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	----	----	----	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EP075l: Organochlorine Pesticides - Continued								
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	----	----	----
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	<10	<10
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	<50	<50
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	<100	<100
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	----	----	<50	<50	<50
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	<100	<100	<100
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	<50	<50	<50
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	<50	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	----	----	<1	<1	<1
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)								
2.4-D	94-75-7	0.001	mg/kg	<0.001	----	----	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg	<0.01	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**95.1**	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**68.1**	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	**72.5**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**70.0**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW1/0.2	GW1/0.6	GW1/1.0	GW1/3.0	GW1/7.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-001	EM2214797-003	EM2214797-004	EM2214797-007	EM2214797-008
				Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	93.3	97.3	92.0
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	81.0	84.3	80.5
2.4.6-Tribromophenol	118-79-6	0.5	%	----	----	73.1	73.6	68.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	92.9	97.7	93.6
Anthracene-d10	1719-06-8	0.5	%	----	----	108	113	110
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	102	106	102
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	78.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%	64.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%	83.4	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	89.3	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	74.0	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%	106	----	----	----	----
Anthracene-d10	1719-06-8	0.025	%	93.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%	87.6	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	82.7	55.4	97.6
Toluene-D8	2037-26-5	0.2	%	----	----	103	61.8	91.6
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	105	93.4	102

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW2/0.2	GW2/2.0	GW2/3.5	LFG3/0.1	LFG3/2.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-010	EM2214797-015	EM2214797-017	EM2214797-019	EM2214797-023
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	7.4	9.1	11.8	2.5	8.2
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	6	5
Barium	7440-39-3	10	mg/kg	40	40	20	160	140
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	5	19	30	52
Cobalt	7440-48-4	2	mg/kg	28	<2	<2	12	9
Copper	7440-50-8	5	mg/kg	34	<5	16	16	105
Lead	7439-92-1	5	mg/kg	<5	8	11	<5	41
Manganese	7439-96-5	5	mg/kg	496	22	30	261	2500
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	4
Nickel	7440-02-0	2	mg/kg	121	2	<2	45	48
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	10	6	14	31	25
Zinc	7440-66-6	5	mg/kg	50	<5	5	48	86
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW2/0.2	GW2/2.0	GW2/3.5	LFG3/0.1	LFG3/2.0
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214797-010	EM2214797-015	EM2214797-017	EM2214797-019	EM2214797-023
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW2/0.2	GW2/2.0	GW2/3.5	LFG3/0.1	LFG3/2.0
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00	03-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214797-010	EM2214797-015	EM2214797-017	EM2214797-019	EM2214797-023
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.6	91.7	92.6	90.4	90.9
2-Chlorophenol-D4	93951-73-6	0.5	%		79.7	82.5	80.8	78.6	79.7
2.4.6-Tribromophenol	118-79-6	0.5	%		68.5	83.2	67.8	69.8	72.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.6	100	95.0	92.3	93.1
Anthracene-d10	1719-06-8	0.5	%		109	99.7	110	105	110
4-Terphenyl-d14	1718-51-0	0.5	%		101	105	103	97.3	96.7
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		106	102	103	93.5	61.4
Toluene-D8	2037-26-5	0.2	%		107	105	92.2	105	69.7
4-Bromofluorobenzene	460-00-4	0.2	%		110	110	109	114	88.7

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG3/6.8	GW1/0.2 PFAS	----	----	----
			Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2214797-025	EM2214797-027	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	8.4	----	----	----
Moisture Content	----	1.0	%	14.9	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Barium	7440-39-3	10	mg/kg	20	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	17	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
Copper	7440-50-8	5	mg/kg	24	----	----	----	----
Lead	7439-92-1	5	mg/kg	11	----	----	----	----
Manganese	7439-96-5	5	mg/kg	29	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	6	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Silver	7440-22-4	2	mg/kg	<2	----	----	----	----
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	11	----	----	----	----
Zinc	7440-66-6	5	mg/kg	35	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG3/6.8	GW1/0.2 PFAS	----	----	----
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2214797-025	EM2214797-027	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG3/6.8	GW1/0.2 PFAS	----	----	----
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2214797-025	EM2214797-027	--------	--------	--------
					Result	Result	----	----	----
EP080: BTEXN - Continued									
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG3/6.8	GW1/0.2 PFAS	----	----	----
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2214797-025	EM2214797-027	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	<0.0002	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.0**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**79.1**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**69.1**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**93.2**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**108**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**100**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG3/6.8	GW1/0.2 PFAS	----	----	----
				Sampling date / time	03-Aug-2022 00:00	03-Aug-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2214797-025	EM2214797-027	--------	--------	--------
					Result	Result	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**94.7**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**66.4**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**88.2**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	**91.3**	----	----	----
13C8-PFOA	----	0.0002	%		----	**92.6**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB030822	----	----	----	----
				Sampling date / time	03-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2214797-026	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**114**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**96.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11479

Project Number: 21135		Laboratory: **ALS Springvale**			Turnaround Time:		1 day			2 days			3 days		5 days							
Project Location: Northcote		Address: 4 Westall Road, Springvale					Analysis Requested															
Project Manager: SH		Phone No: 8549 9600 Fax: 8549 9626																				
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au		Lab Quote Number: MEBQ-266-21																				
	Sample ID	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass soil 6	Sulphate	pH as CaCl2	P-22	PFAS (28)								
1	GW1 / 0.2	03.08.22		1	ICE	1	x															
27	GW1 / 0.2 PFAS	03.08.22		1	ICE	1								x								
3	GW1 / 0.5 + & Clay ~~GW1/0.6~~	03.08.22		1	ICE	2					x	x	x									
4	GW1 / 1.0	03.08.22		1	ICE	1			x	x												
5	GW1 / 1.0 PFAS	03.08.22		1	ICE	1																
6	GW1 / 2.0	03.08.22		1	ICE	1																
7	GW1 / 3.0	03.08.22		1	ICE	1			x	x												
8	GW1 / 7.0	03.08.22		1	ICE	1			x	x												
9	GW1 / 10.5	03.08.22		1	ICE	1																
10	GW2 / 0.2	03.08.22		1	ICE	1			x	x												
11	GW2 / 0.4	03.08.22		1	ICE	1																
12	GW2 / 0.4 PFAS	03.08.22		1	ICE	1																
NR 13	GW2 / 0.8 + % Clay	03.08.22		1	ICE	2																
14	GW2 / 1.0	03.08.22		1	ICE	1			x	x												

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_3$

1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 04.08.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11479

Project Number: 21135		Laboratory: **ALS Springvale**			Turnaround Time:			1 day			2 days			3 days			5 days				
Project Location: Northcote		Address: 4 Westall Road, Springvale			Number of Containers	Analysis Requested																
Project Manager: SH		Phone No: 8549 9600 Fax: 8549 9626				P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass soil 6	TRH/BTEXN											
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au		Lab Quote Number: MEBQ-266-21																			
	Sample ID	Date Sampled	Composites	Sample Type*	Preservative*																	
15	GW2 / 2.0	03.08.22		1	ICE	1																
16	GW2 / 3.0	03.08.22		1	ICE	1																
17	GW2 / 3.5	03.08.22		1	ICE	2			x	x												
18	GW2 / 12.0	03.08.22		1	ICE	1																
19	LFG3 / 0.1	03.08.22		1	ICE	1			x	x												
20	LFG3 / 0.5	03.08.22		1	ICE	1																
21	LFG3 / 0.5 PFAS	03.08.22		1	ICE	1																
22	LFG3 / 1.0 + % Clay	03.08.22		1	ICE	2																
23	LFG3 / 2.0	03.08.22		1	ICE	1			x	x												
24	LFG3 / 3.0	03.08.22		1	ICE	1																
25	LFG3 / 6.8	03.08.22		1	ICE	1			x	x												
26	TB030822	03.08.22		2	ICE	5					x											

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_3$

1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 04.08.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2214832**	Page	: 1 of 18
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: LAB RESULTS	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 03-Aug-2022 11:57
Order number	: ----	Date Analysis Commenced	: 04-Aug-2022
C-O-C number	: 21135-11473	Issue Date	: 10-Aug-2022 22:27
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 21		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
			Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	----	7.8	8.3
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	----	----	----	8.2	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	695	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	11.6	----	13.6
Moisture Content	----	1.0	%	3.7	8.3	----	10.0	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	----	35	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	----	2.52	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	----	----	4.4	----
ø Exchangeable Magnesium	----	0.2	meq/100g	----	----	----	5.4	----
ø Exchangeable Potassium	----	0.2	meq/100g	----	----	----	0.7	----
ø Exchangeable Sodium	----	0.2	meq/100g	----	----	----	0.5	----
ø Cation Exchange Capacity	----	0.2	meq/100g	----	----	----	11.0	----
ø Exchangeable Calcium Percent	----	0.2	%	----	----	----	39.8	----
ø Exchangeable Magnesium Percent	----	0.2	%	----	----	----	49.1	----
ø Exchangeable Potassium Percent	----	0.2	%	----	----	----	6.4	----
ø Exchangeable Sodium Percent	----	0.2	%	----	----	----	4.7	----
ø Calcium/Magnesium Ratio	----	0.2	-	----	----	----	0.8	----
ø Magnesium/Potassium Ratio	----	0.2	-	----	----	----	7.7	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	----	----	860	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	----	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	<5
Barium	7440-39-3	10	mg/kg	30	80	----	----	110
Beryllium	7440-41-7	1	mg/kg	<1	<1	----	----	<1
Boron	7440-42-8	50	mg/kg	<50	<50	----	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	<1
Chromium	7440-47-3	2	mg/kg	20	28	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued									
Cobalt	7440-48-4	2	mg/kg		19	8	----	----	----
Copper	7440-50-8	5	mg/kg		23	24	----	----	22
Iron	7439-89-6	0.005	%		----	----	----	0.711	----
Lead	7439-92-1	5	mg/kg		<5	26	----	----	34
Manganese	7439-96-5	5	mg/kg		337	258	----	----	----
Molybdenum	7439-98-7	2	mg/kg		<2	<2	----	----	<2
Nickel	7440-02-0	2	mg/kg		91	32	----	----	14
Selenium	7782-49-2	5	mg/kg		<5	<5	----	----	<5
Silver	7440-22-4	2	mg/kg		<2	<2	----	----	<2
Tin	7440-31-5	5	mg/kg		<5	<5	----	----	16
Vanadium	7440-62-2	5	mg/kg		14	25	----	----	----
Zinc	7440-66-6	5	mg/kg		41	59	----	----	44
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		----	----	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		----	----	----	----	<1
EK030: Cyanide Amenable to Chlorination									
Cyanide amenable to chlorination	----	1	mg/kg		----	----	----	----	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		----	----	----	----	290
EP004: Organic Matter									
Organic Matter	----	0.5	%		----	----	----	2.3	----
Total Organic Carbon	----	0.5	%		----	----	----	1.3	----
EP010: Formaldehyde									
Formaldehyde	50-00-0	2	mg/kg		----	----	----	----	<2
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
			Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	----	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg	----	----	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg	----	----	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg	----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
			Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	----	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg	----	----	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg	----	----	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg	----	----	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	----	----	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Dinoseb	88-85-7	5	mg/kg		----	----	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	----	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	----	<0.5
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	----	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	----	----	<1.0
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		----	----	----	----	<0.03

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
			Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
				Result	Result	Result	Result	Result
EP075l: Organochlorine Pesticides - Continued								
gamma-BHC	58-89-9	0.03	mg/kg	----	----	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	----	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	----	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	----	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg	----	----	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	----	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	----	----	----	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	----	<0.0002	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	----	**0.0004**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	----	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	----	**0.0003**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	**0.0002**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	----	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	<0.0002	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	<0.0005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	**0.0009**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	**0.0004**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	**0.0009**	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**108**
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	----	**111**
Toluene-D8	2037-26-5	0.1	%		----	----	----	----	**112**
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	----	**110**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.0**	**90.0**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**80.2**	**79.9**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**94.4**	**95.1**	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**87.4**	**84.9**	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**102**	**101**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**88.1**	**85.6**	----	----	----

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	LFG1/0.2	LFG1/0.85	LFG1/1.1 PFAS	LFG1/1.5	LFG1/2.8
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00
					EM2214832-001	EM2214832-004	EM2214832-006	EM2214832-007	EM2214832-009
					Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	----	**102**
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	----	**91.9**
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	----	**87.1**
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	----	**91.2**
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	----	**86.9**
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	----	**110**
Anthracene-d10	1719-06-8	0.025	%		----	----	----	----	**105**
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	----	**95.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**94.5**	**95.1**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**96.2**	**91.2**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**103**	**102**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	**109**	----	----
13C8-PFOA	----	0.0002	%		----	----	**99.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/5.5	LFG2/1.0	LFG2/3.0	LFG2/6.0	----
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2214832-012	EM2214832-016	EM2214832-018	EM2214832-020	--------
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.1	15.1	11.3	12.9	----
EG005(ED093)T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	7	<5	<5	----
Arsenic	7440-38-2	5	mg/kg		6	6	<5	<5	----
Barium	7440-39-3	10	mg/kg		90	110	170	190	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	----
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg		12	43	19	18	----
Cobalt	7440-48-4	2	mg/kg		3	4	4	5	----
Copper	7440-50-8	5	mg/kg		33	10	17	12	----
Lead	7439-92-1	5	mg/kg		18	22	17	19	----
Manganese	7439-96-5	5	mg/kg		160	173	1700	2720	----
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	----
Nickel	7440-02-0	2	mg/kg		8	24	13	13	----
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	----
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	----
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	----
Vanadium	7440-62-2	5	mg/kg		18	42	21	19	----
Zinc	7440-66-6	5	mg/kg		29	83	33	20	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	1.5	0.7	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	0.6	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	5.3	3.4	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	1.7	1.0	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	8.0	4.2	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	7.8	4.1	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	3.6	1.9	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	2.8	1.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	3.6	1.8	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG1/5.5	LFG2/1.0	LFG2/3.0	LFG2/6.0	----
			Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	----
Compound	CAS Number	LOR	Unit	EM2214832-012	EM2214832-016	EM2214832-018	EM2214832-020	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	**1.3**	**0.7**	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	**3.1**	**1.5**	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	**1.5**	**0.8**	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	**1.8**	**0.9**	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	**42.6**	**22.5**	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	**4.1**	**2.0**	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**4.4**	**2.3**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**4.6**	**2.5**	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	**110**	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	**110**	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	**110**	<100	**180**	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**110**	<50	**180**	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG1/5.5	LFG2/1.0	LFG2/3.0	LFG2/6.0	----
				Sampling date / time	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	02-Aug-2022 00:00	----
Compound	CAS Number	LOR	Unit		EM2214832-012	EM2214832-016	EM2214832-018	EM2214832-020	--------
					Result	Result	Result	Result	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.2	84.5	85.5	85.8	----
2-Chlorophenol-D4	93951-73-6	0.5	%		78.5	76.1	74.0	76.9	----
2.4.6-Tribromophenol	118-79-6	0.5	%		93.1	78.5	87.8	88.2	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.4	86.8	79.7	84.9	----
Anthracene-d10	1719-06-8	0.5	%		99.7	97.6	89.3	95.9	----
4-Terphenyl-d14	1718-51-0	0.5	%		87.7	93.4	81.0	89.3	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		90.7	89.8	92.9	88.0	----
Toluene-D8	2037-26-5	0.2	%		84.2	94.5	92.8	84.0	----
4-Bromofluorobenzene	460-00-4	0.2	%		96.0	99.4	105	95.2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB020822	----	----	----	----
				Sampling date / time	02-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2214832-021	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**114**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**92.6**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**95.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

CoC received 13:59

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135-11473

Project Number: 21135			Laboratory: **ALS Springvale**			Turnaround Time:		1 day		2 days		3 days	✓ 5 days																		
Project Location: Northcote			Address: 4 Westall Road, Springvale			Number of Containers	Analysis Requested																								
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9626				P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS (24)	Sulphate as SO_4	pH as CaCl	P-22																
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-21																												
Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*																										
LFG1 / 0.2	1	02.08.22		1	ICE	1			✓	✓																					
LFG1 / 0.5	2	02.08.22		1	ICE	1																									
LFG1 / 0.75	3	02.08.22		1	ICE	1																									
LFG1 / 0.85	4	02.08.22		1	ICE	1			✓	✓																					
LFG1 / 1.1	5	02.08.22		1	ICE	1																									
LFG1 / 1.1 PFAS	6	02.08.22		1	ICE	1					✓																				
LFG1 / 1.5 % Clay	7	02.08.22		1	ICE	2						✓	✓	✓																	
LFG1 / 2.0	8	02.08.22		1	ICE	1																									
LFG1 / 2.8	9	02.08.22		1	ICE	1	✓																								
LFG1 / 4.0	10	02.08.22		1	ICE	1																									
LFG1 / 5.0	11	02.08.22		1	ICE	1																									
LFG1 / 5.5	12	02.08.22		1	ICE	1			✓	✓																					
LFG2 / 2.0 0.2	13	02.08.22		1	ICE	1																									
LFG2 / 0.5	14	02.08.22		1	ICE	1																									

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_2$

Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by: KSF	Relinquished by:	Received by:
Signature:	Signature: KSN	Signature:	Signature:
Company: Compass Environmental	Company: ALS	Company:	Company:
Date/time: 03.08.22	Date/time 3/8/22 11:57	Date/time:	Date/time

Environmental Division
Melbourne
Work Order Reference
EM2214832

Telephone : + 61-3-8549 9600

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 21135-11473

Project Number: 21135			Laboratory: ALS Springvale			Turnaround Time:		1 day			2 days			3 days			[redacted] days									
Project Location: Northcote			Address: 4 Westall Road, Springvale					Analysis Requested																		
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9626																							
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-21																							
Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	Soluble Cr SO4	pH- Cr, Cu	TRH / BTEX													
LFG2 / 0.5 PFAS	15	02.08.22		1	ICE	1																				
LFG2 / 1.0	16	02.08.22		1	ICE	1			✓	✓																
LFG2 / 1.5	17	02.08.22		1	ICE	1																				
LFG2 / 3.0 % Clay	18	02.08.22		1 2	ICE	2			✓	✓																
LFG2 / 4.0	19	02.08.22		1	ICE	1																				
LFG2 / 6.0	20	02.08.22		1	ICE	1			✓	✓																
TB020822	21	02.08.22		2	ICE	5							✓													

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_2$

Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 03.08.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2215060**	Page	: 1 of 10
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: LAB RESULTS	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 05-Aug-2022 14:30
Order number	: ----	Date Analysis Commenced	: 08-Aug-2022
C-O-C number	: 21135-11483	Issue Date	: 12-Aug-2022 17:42
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 23		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Sanjay Parekh	LCMS Coordinator	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	LFG4 / 0.1	LFG4 / 2.0	LFG4 / 6.0	LFG6 / 0.2	LFG6 / 0.5 PFAS
				Sampling date / time	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00
					EM2215060-001	EM2215060-006	EM2215060-008	EM2215060-016	EM2215060-018
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**----**	**----**	**----**	**----**	**15.0**
Moisture Content	----	1.0	%		**11.7**	**11.8**	**12.0**	**6.3**	**----**
EG005(ED093)T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	<5	<5	<5	**----**
Arsenic	7440-38-2	5	mg/kg		**6**	<5	<5	<5	**----**
Barium	7440-39-3	10	mg/kg		**80**	**80**	**60**	**60**	**----**
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	**----**
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	**----**
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	**----**
Chromium	7440-47-3	2	mg/kg		**45**	**9**	**9**	**19**	**----**
Cobalt	7440-48-4	2	mg/kg		**7**	<2	<2	**18**	**----**
Copper	7440-50-8	5	mg/kg		**22**	<5	**6**	**27**	**----**
Lead	7439-92-1	5	mg/kg		**21**	**14**	**10**	**8**	**----**
Manganese	7439-96-5	5	mg/kg		**184**	**14**	**6**	**453**	**----**
Molybdenum	7439-98-7	2	mg/kg		**8**	<2	<2	<2	**----**
Nickel	7440-02-0	2	mg/kg		**22**	<2	<2	**101**	**----**
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	**----**
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	**----**
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	**----**
Vanadium	7440-62-2	5	mg/kg		**28**	**8**	**6**	**16**	**----**
Zinc	7440-66-6	5	mg/kg		**131**	<5	<5	**43**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG4 / 0.1	LFG4 / 2.0	LFG4 / 6.0	LFG6 / 0.2	LFG6 / 0.5 PFAS
			Sampling date / time	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215060-001	EM2215060-006	EM2215060-008	EM2215060-016	EM2215060-018
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG4 / 0.1	LFG4 / 2.0	LFG4 / 6.0	LFG6 / 0.2	LFG6 / 0.5 PFAS
				Sampling date / time	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215060-001	EM2215060-006	EM2215060-008	EM2215060-016	EM2215060-018
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	----	----	----	**0.0009**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	----	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	----	----	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	----	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	----	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	----	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG4 / 0.1	LFG4 / 2.0	LFG4 / 6.0	LFG6 / 0.2	LFG6 / 0.5 PFAS
				Sampling date / time	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215060-001	EM2215060-006	EM2215060-008	EM2215060-016	EM2215060-018
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	----	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	----	----	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	----	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	----	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	----	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	----	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	----	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	----	----	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	----	----	**0.0009**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	----	----	**0.0009**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	----	----	**0.0009**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**77.0**	**82.0**	**82.7**	**79.5**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**74.0**	**77.7**	**80.3**	**77.3**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**70.5**	**67.9**	**68.9**	**67.2**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**93.8**	**94.6**	**99.6**	**93.8**	----
Anthracene-d10	1719-06-8	0.5	%		**99.4**	**102**	**107**	**103**	----
4-Terphenyl-d14	1718-51-0	0.5	%		**98.9**	**100**	**104**	**101**	----
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG4 / 0.1	LFG4 / 2.0	LFG4 / 6.0	LFG6 / 0.2	LFG6 / 0.5 PFAS
				Sampling date / time	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00	04-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215060-001	EM2215060-006	EM2215060-008	EM2215060-016	EM2215060-018
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		98.0	101	97.6	94.5	----
Toluene-D8	2037-26-5	0.2	%		96.2	101	86.4	84.0	----
4-Bromofluorobenzene	460-00-4	0.2	%		99.8	110	96.7	91.7	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	----	----	101
13C8-PFOA	----	0.0002	%		----	----	----	----	102

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG6 / 1.0 + % Clay	----	----	----	----
			Sampling date / time	04-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2215060-019	--------	--------	--------	--------
				Result	----	----	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	8.0	----	----	----	----
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	8.2	----	----	----	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	270	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.3	----	----	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	26	----	----	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.54	----	----	----	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	7.4	----	----	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	3.5	----	----	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	1.0	----	----	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	0.8	----	----	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	12.8	----	----	----	----
ø Exchangeable Calcium Percent	----	0.2	%	58.4	----	----	----	----
ø Exchangeable Magnesium Percent	----	0.2	%	27.3	----	----	----	----
ø Exchangeable Potassium Percent	----	0.2	%	8.3	----	----	----	----
ø Exchangeable Sodium Percent	----	0.2	%	6.0	----	----	----	----
ø Calcium/Magnesium Ratio	----	0.2	-	2.1	----	----	----	----
ø Magnesium/Potassium Ratio	----	0.2	-	3.3	----	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	370	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Iron	7439-89-6	0.005	%	3.31	----	----	----	----
EP004: Organic Matter								
Organic Matter	----	0.5	%	0.8	----	----	----	----
Total Organic Carbon	----	0.5	%	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB040822	----	----	----	----
				Sampling date / time	04-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2215060-023	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**111**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**91.0**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**104**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11483

Project Number: 21135		Laboratory: **ALS Springvale**			Turnaround Time:			1 day		2 days			3 days			5 days							
Project Location: Northcote		Address: 4 Westall Road, Springvale						Analysis Requested																
Project Manager: SH		Phone No: 8549 9600 Fax: 8549 9626																						
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au		Lab Quote Number: MEBQ-266-21																						
Sample ID	Date Sampled	~~Composites~~ Id's	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS (28)														
LFG4 / 0.1	04.08.22	1	1	ICE	1			x	x															
LFG4 / 0.4	04.08.22	2	1	ICE	1																			
LFG4 / 0.9 + % clay *	04.08.22	* BM 8/8. 3	1	ICE	** 1																			
LFG4 / 0.9 PFAS +	04.08.22	4	1	ICE	1																			
LFG4 / 1.5 + % Clay (Bag N.R)*	04.08.22	5	1	ICE	1 2																			
LFG4 / 2.0	04.08.22	6	1	ICE	1			x	x															
LFG4 / 3.0	04.08.22	7	1	ICE	1																			
LFG4 / 6.0	04.08.22	8	1	ICE	1			x	x															
LFG5 / 0.2	04.08.22	9	1	ICE	1																			
LFG5 / 0.5	04.08.22	10	1	ICE	1																			
LFG5 / 0.5 PFAS	04.08.22	11	1	ICE	1																			
LFG5 / 1.0 + % Clay	04.08.22	12	1	ICE	2																			
LFG5 / 1.5	04.08.22	13	1	ICE	1																			
LFG5 / 2.0	04.08.22	14	1	ICE	1																			

Environmental Division
Melbourne
Work Order Reference
EM2215060

Telephone : + 61-3-8549 9600

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_3$

1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by: KSF	Relinquished by:	Received by:
Signature:	Signature: KM	Signature:	Signature:
Company: Compass Environmental	Company: ALS	Company:	Company:
Date/time: 04.08.22	Date/time 5/8/22 14:30	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11483

Project Number: 21135		Laboratory: **ALS Springvale**			Turnaround Time:		1 day		2 days		3 days	5 days											
Project Location: Northcote		Address: 4 Westall Road, Springvale			Number of Containers	Analysis Requested																	
Project Manager: SH		Phone No: 8549 9600 Fax: 8549 9626				P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS (28)	pH as CaCl2	Sulphate	P-22	TRH/BTEXN								
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au		Lab Quote Number: MEBQ-266-21																					
Sample ID	Date Sampled	~~Composites~~ Id's	Sample Type*	Preservative*																			
LFG5 / 3.0	04.08.22	15	1	ICE	1																		
LFG6 / 0.2	04.08.22	16	1	ICE	1			x	x														
LFG6 / 0.5	04.08.22	17	1	ICE	1																		
LFG6 / 0.5 PFAS	04.08.22	18	1	ICE	1					x													
LFG6 / 1.0 + % Clay	04.08.22	19	1	ICE	2						x	x	x										
LFG6 / 1.8	04.08.22	20	1	ICE	1																		
LFG6 / 2.8	04.08.22	21	1	ICE	1	x																	
LFG040822	04.08.22	22	1	ICE	1																		
TB040822	04.08.22	23	2	ICE	5								x										

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_3$

1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company:	Company:	Company:
Date/time: 04.08.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2215104**	Page	: 1 of 27
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 08-Aug-2022 13:15
Order number	: ----	Date Analysis Commenced	: 09-Aug-2022
C-O-C number	: 21135-11488	Issue Date	: 16-Aug-2022 11:00
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 25		
No. of samples analysed	: 17		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Sanjay Parekh	LCMS Coordinator	Melbourne Organics, Springvale, VIC
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EP066-EM: Particular sample EM2215104_12 required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.
- EP075(SIM): Particular samples have LOR raised for acenapthene and anthracene due to matrix interferences.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	9.1	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	4.9	7.7	12.2	6.4	13.2
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	10	30	60	10	40
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	3	25	10	37
Cobalt	7440-48-4	2	mg/kg	----	13	4	<2	2
Copper	7440-50-8	5	mg/kg	14	<5	20	9	34
Lead	7439-92-1	5	mg/kg	<5	<5	13	<5	20
Manganese	7439-96-5	5	mg/kg	----	41	82	32	32
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	27	<2	14	4	13
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	<5	14	12	17
Zinc	7440-66-6	5	mg/kg	18	<5	38	14	44
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	----	----	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	<1	----	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	50	----	----	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	<2	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	<1	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		<0.01	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		<0.01	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	----	----	----	----
2-Methylphenol	95-48-7	1	mg/kg		<1	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	----	----	----
Dinoseb	88-85-7	5	mg/kg	<5	----	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	----	----	----	----
^ Cresols (Total)	----	1	mg/kg	<1	----	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP075C: Phthalate Esters								
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg	<0.5	----	----	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Nitrobenzene	98-95-3	0.5	mg/kg	<0.5	----	----	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	<1.0	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	----	----	----
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	----	----	----
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	<10	<10
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	<50	<50
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	<100	<100	<100	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	<50
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	<50
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	<1
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		<0.001	----	----	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B1/0.2	B1/0.6	B2/0.5	B2/1.0	B2/1.2
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-001	EM2215104-003	EM2215104-005	EM2215104-006	EM2215104-007
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		99.1	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		104	----	----	----	----
Toluene-D8	2037-26-5	0.1	%		100	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		99.4	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	95.2	94.0	91.1	91.1
2-Chlorophenol-D4	93951-73-6	0.5	%		----	84.4	84.9	83.3	83.9
2.4.6-Tribromophenol	118-79-6	0.5	%		----	99.2	99.8	98.7	98.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	83.4	84.4	98.8	79.9
Anthracene-d10	1719-06-8	0.5	%		----	127	127	117	120
4-Terphenyl-d14	1718-51-0	0.5	%		----	97.3	97.6	99.6	98.5
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		95.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		74.1	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		84.1	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		96.6	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		91.9	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		105	----	----	----	----
Anthracene-d10	1719-06-8	0.025	%		95.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		106	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	103	86.0	89.0	84.4
Toluene-D8	2037-26-5	0.2	%		----	101	100	78.0	94.2
4-Bromofluorobenzene	460-00-4	0.2	%		----	112	109	86.4	100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	7.3	8.2	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	14.4	12.4	24.1	13.2	----
Moisture Content	----	1.0	%	----	----	----	----	14.6
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)								
Sulfate as SO4 2-	14808-79-8	50	mg/kg	----	----	<50	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	5	7	8	<5	<5
Barium	7440-39-3	10	mg/kg	40	20	200	120	40
Beryllium	7440-41-7	1	mg/kg	<1	<1	2	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	32	----	----	14
Cobalt	7440-48-4	2	mg/kg	<2	<2	----	----	<2
Copper	7440-50-8	5	mg/kg	25	39	18	21	25
Lead	7439-92-1	5	mg/kg	12	18	18	10	10
Manganese	7439-96-5	5	mg/kg	60	39	----	----	51
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	4	7	23	3	5
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	11	16	----	----	8
Zinc	7440-66-6	5	mg/kg	31	47	13	18	27
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	<1	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	<1	----
EK040T: Fluoride Total								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
				Result	Result	Result	Result	Result
EK040T: Fluoride Total - Continued								
Fluoride	16984-48-8	40	mg/kg	----	----	**250**	**360**	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	<2	<2	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	<0.2	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	**0.7**	----
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	<0.2	**0.7**	----
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	**0.7**	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	<1	<1	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	**42**	**4**	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	<0.02	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	<0.01	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg	----	----	<0.4	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	<0.02	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	<0.01	<0.01	----
Chloroform	67-66-3	0.02	mg/kg	----	----	<0.02	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	<0.01	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	<0.01	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	<0.02	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg	----	----	<0.02	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	<0.04	<0.04	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	<0.01	<0.01	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	<0.02	<0.02	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	<0.02	<0.02	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	----	<0.02	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg		----	----	<0.02	<0.02	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	<0.02	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	<0.02	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	<0.01	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	<0.01	<0.01	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	<0.01	<0.01	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	<0.01	<0.01	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	<0.01	<0.01	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		**0.8**	**4.3**	----	----	**2.8**
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<1.2	----	----	<0.6
Fluorene	86-73-7	0.5	mg/kg		**1.1**	**4.7**	----	----	**2.3**
Phenanthrene	85-01-8	0.5	mg/kg		**0.8**	**7.2**	----	----	**3.1**
Anthracene	120-12-7	0.5	mg/kg		<0.5	<1.0	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	**1.2**	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	**1.1**	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**2.7**	**18.5**	----	----	**8.2**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	----	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	<0.03	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	<0.03	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued								
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	<0.05	<0.05	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	----	<1	<1	----
2-Methylphenol	95-48-7	1	mg/kg	----	----	<1	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	<1	<1	----
2-Nitrophenol	88-75-5	1	mg/kg	----	----	<1	<1	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	<1	<1	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	<5	<5	----
4-Nitrophenol	100-02-7	5	mg/kg	----	----	<5	<5	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	<5	<5	----
Dinoseb	88-85-7	5	mg/kg	----	----	<5	<5	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	----	<5	<5	----
^ Cresols (Total)	----	1	mg/kg	----	----	<1	<1	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	<1	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	**20.5**	**4.1**	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	**5.0**	**2.0**	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	**0.6**	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	**5.8**	**5.2**	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	**12.1**	**8.4**	----
Anthracene	120-12-7	0.5	mg/kg	----	----	**3.5**	**0.6**	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	**2.8**	**0.8**	----
Pyrene	129-00-0	0.5	mg/kg	----	----	**2.5**	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	----	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	**52.8**	**21.1**	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	**1.2**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	<0.5	<0.5	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	<0.5	<0.5	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	<1.0	<1.0	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	<0.03	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	<0.03	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		----	----	<0.03	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		----	----	<0.03	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		----	----	<0.03	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		----	----	<0.03	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		----	----	<0.03	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	----	<0.03	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		----	----	<0.03	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		----	----	<0.03	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		----	----	<0.03	<0.03	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		----	----	<0.03	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	----	<0.03	<0.03	----
Endrin	72-20-8	0.03	mg/kg		----	----	<0.03	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		----	----	<0.03	<0.03	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	----	<0.03	<0.03	----
4.4`-DDT	50-29-3	0.05	mg/kg		----	----	<0.05	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		----	----	<0.03	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	----	<0.03	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		----	----	<0.03	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	----	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	<10
C6 - C9 Fraction	----	10	mg/kg		----	----	<10	14	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		1130	2000	----	----	1180
C10 - C14 Fraction	----	50	mg/kg		----	----	990	3630	----
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	<10	30	----
C15 - C28 Fraction	----	100	mg/kg		3440	4870	----	----	2760
C15 - C28 Fraction	----	100	mg/kg		----	----	2030	7700	----
C29 - C36 Fraction	----	100	mg/kg		320	320	----	----	170
C29 - C36 Fraction	----	100	mg/kg		----	----	150	600	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		4890	7190	----	----	4110
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	3170	11900	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	18	----	----	17
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	17	----	----	16
>C10 - C16 Fraction	----	50	mg/kg		3020	4590	----	----	2840
>C10 - C16 Fraction	----	50	mg/kg		----	----	1710	7100	----
>C16 - C34 Fraction	----	100	mg/kg		2070	2800	----	----	1450
>C16 - C34 Fraction	----	100	mg/kg		----	----	1430	4670	----
>C34 - C40 Fraction	----	100	mg/kg		230	230	----	----	130
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	400	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		5320	7620	----	----	4420
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	3140	12200	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		3020	4590	----	----	2840
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	1670	7100	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	<10	29	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	0.6	----	----	0.6
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	0.6	----	----	0.6
^ Total Xylenes	----	0.5	mg/kg		<0.5	0.6	----	----	0.6

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B3/0.3	B3/0.6	GW3/0.5	GW4/0.2	GW4/1.0
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-008	EM2215104-009	EM2215104-011	EM2215104-012	EM2215104-013
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Naphthalene	91-20-3	1	mg/kg	<1	1	----	----	2
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)								
2.4-D	94-75-7	0.001	mg/kg	----	----	<0.001	<0.001	----
Tributyltin oxide	56-35-9	0.01	mg/kg	----	----	<0.01	<0.01	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	101	93.5	----
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	109	107	----
Toluene-D8	2037-26-5	0.1	%	----	----	97.6	94.4	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	94.4	90.9	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	94.8	98.1	----	----	95.8
2-Chlorophenol-D4	93951-73-6	0.5	%	86.0	87.7	----	----	85.7
2.4.6-Tribromophenol	118-79-6	0.5	%	90.6	90.8	----	----	91.0
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	95.0	109	----	----	97.8
Anthracene-d10	1719-06-8	0.5	%	113	107	----	----	110
4-Terphenyl-d14	1718-51-0	0.5	%	106	105	----	----	104
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	----	----	101	88.3	----
2-Chlorophenol-D4	93951-73-6	0.025	%	----	----	91.1	74.4	----
2.4.6-Tribromophenol	118-79-6	0.025	%	----	----	87.5	75.2	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	----	----	84.6	79.0	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	----	104	84.7	----
2-Fluorobiphenyl	321-60-8	0.025	%	----	----	96.0	82.2	----
Anthracene-d10	1719-06-8	0.025	%	----	----	102	88.6	----
4-Terphenyl-d14	1718-51-0	0.025	%	----	----	100	81.4	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	101	104	----	----	101
Toluene-D8	2037-26-5	0.2	%	101	103	----	----	98.9
4-Bromofluorobenzene	460-00-4	0.2	%	111	112	----	----	110

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW4/1.0 PFAS	GW4/2.0	GW4/3.0	GW4/7.0	GW050822A
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-014	EM2215104-015	EM2215104-017	EM2215104-022	EM2215104-024
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	7.8	----	----	----
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	----	8.6	----	----	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	128	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	14.0	12.7	12.0	12.4	15.5
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	35	----	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	2.55	----	----	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	<0.2	----	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	----	1.1	----	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	----	<0.2	----	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	----	0.6	----	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	----	1.9	----	----	----
ø Exchangeable Calcium Percent	----	0.2	%	----	<0.2	----	----	----
ø Exchangeable Magnesium Percent	----	0.2	%	----	60.1	----	----	----
ø Exchangeable Potassium Percent	----	0.2	%	----	7.1	----	----	----
ø Exchangeable Sodium Percent	----	0.2	%	----	32.7	----	----	----
ø Calcium/Magnesium Ratio	----	0.2	-	----	<0.2	----	----	----
ø Magnesium/Potassium Ratio	----	0.2	-	----	<0.2	----	----	----
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)								
Sulfate as SO4 2-	14808-79-8	50	mg/kg	----	<50	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	----	----	<5	<5	8
Barium	7440-39-3	10	mg/kg	----	----	40	40	180
Beryllium	7440-41-7	1	mg/kg	----	----	<1	<1	1
Boron	7440-42-8	50	mg/kg	----	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	----	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	----	25	27	43
Cobalt	7440-48-4	2	mg/kg	----	----	2	3	8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW4/1.0 PFAS	GW4/2.0	GW4/3.0	GW4/7.0	GW050822A
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-014	EM2215104-015	EM2215104-017	EM2215104-022	EM2215104-024
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Copper	7440-50-8	5	mg/kg	----	----	**36**	**35**	**12**
Iron	7439-89-6	0.005	%	----	**3.91**	----	----	----
Lead	7439-92-1	5	mg/kg	----	----	**18**	**17**	**13**
Manganese	7439-96-5	5	mg/kg	----	----	**15**	**21**	**63**
Molybdenum	7439-98-7	2	mg/kg	----	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	----	----	**12**	**13**	**16**
Selenium	7782-49-2	5	mg/kg	----	----	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	----	<2	<2	<2
Tin	7440-31-5	5	mg/kg	----	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	----	**16**	**15**	**66**
Zinc	7440-66-6	5	mg/kg	----	----	**52**	**58**	**9**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	----	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	<0.5	----	----	----
Total Organic Carbon	----	0.5	%	----	<0.5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	**1.3**	**3.4**	**46.5**
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	<0.6	**8.2**
Fluorene	86-73-7	0.5	mg/kg	----	----	**1.1**	**2.9**	**9.6**
Phenanthrene	85-01-8	0.5	mg/kg	----	----	**1.3**	**3.5**	**19.7**
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	<0.5	**6.0**
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	<0.5	**4.5**
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	<0.5	**4.2**
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	<0.5	**0.8**
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	<0.5	**0.7**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	**3.7**	**9.8**	**100**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW4/1.0 PFAS	GW4/2.0	GW4/3.0	GW4/7.0	GW050822A
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215104-014	EM2215104-015	EM2215104-017	EM2215104-022	EM2215104-024
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	**0.6**	**0.7**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	**10**	**19**	<10
C10 - C14 Fraction	----	50	mg/kg	----	----	**620**	**1600**	**1720**
C15 - C28 Fraction	----	100	mg/kg	----	----	**1310**	**3540**	**3670**
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	**210**	**340**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	**1930**	**5350**	**5730**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	**19**	**36**	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	**18**	**35**	<10
>C10 - C16 Fraction	----	50	mg/kg	----	----	**1420**	**3580**	**3190**
>C16 - C34 Fraction	----	100	mg/kg	----	----	**660**	**1960**	**2560**
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	**160**	**110**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	**2080**	**5700**	**5860**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	**1420**	**3580**	**3180**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	**0.6**	**1.4**	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	----	----	**0.6**	**1.4**	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	**0.6**	**1.4**	<0.5
Naphthalene	91-20-3	1	mg/kg	----	----	**1**	**3**	**12**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW4/1.0 PFAS	GW4/2.0	GW4/3.0	GW4/7.0	GW050822A
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-014	EM2215104-015	EM2215104-017	EM2215104-022	EM2215104-024
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW4/1.0 PFAS	GW4/2.0	GW4/3.0	GW4/7.0	GW050822A
				Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215104-014	EM2215104-015	EM2215104-017	EM2215104-022	EM2215104-024
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	96.5	92.4	93.0
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	86.4	84.4	83.3
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	94.0	91.4	93.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	79.9	96.9	97.3
Anthracene-d10	1719-06-8	0.5	%		----	----	118	104	96.0
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	104	103	96.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	96.1	106	105
Toluene-D8	2037-26-5	0.2	%		----	----	91.4	110	105
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	103	116	116
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		112	----	----	----	----
13C8-PFOA	----	0.0002	%		106	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW050822B	----	----	----	----
				Sampling date / time	05-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2215104-025	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**13.6**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg		**7**	----	----	----	----
Barium	7440-39-3	10	mg/kg		**90**	----	----	----	----
Beryllium	7440-41-7	1	mg/kg		<1	----	----	----	----
Boron	7440-42-8	50	mg/kg		<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**28**	----	----	----	----
Cobalt	7440-48-4	2	mg/kg		**4**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**46**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**15**	----	----	----	----
Manganese	7439-96-5	5	mg/kg		**217**	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg		<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**9**	----	----	----	----
Selenium	7782-49-2	5	mg/kg		<5	----	----	----	----
Silver	7440-22-4	2	mg/kg		<2	----	----	----	----
Tin	7440-31-5	5	mg/kg		<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg		**18**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**34**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		**1.8**	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.8	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		**2.6**	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		**4.3**	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		**0.5**	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW050822B	----	----	----	----
			Sampling date / time	05-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2215104-025	--------	--------	--------	--------
				Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	**9.2**	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	**1210**	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	**3400**	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	**450**	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**5060**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	**17**	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	**17**	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	**3040**	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	**2170**	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	**320**	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**5530**	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	**3040**	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	**1**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW050822B	----	----	----	----
				Sampling date / time	05-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2215104-025	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**93.4**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.5**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**97.0**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**98.6**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**106**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**104**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**101**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**102**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**112**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB050822	----	----	----	----
				Sampling date / time	05-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2215104-026	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**93.6**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**98.4**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**97.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135 - 11488

Project Number: 21135	Laboratory: **ALS Springvale**	Turnaround Time:	1 day / 2 days / 3 days / ✓ 5 days
Project Location: Northcote	Address: 4 Westall Road, Springvale		
Project Manager: SH	Phone No: 8549 9600 Fax: 8549 9626		
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au	Lab Quote Number: MEBQ-266-21		

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	pH as CaCl2	Sulphide	P-22	PFAS (28)
B1 / 0.2	1	05.08.22		1	ICE	1	✓							
B1 / 0.4	2													
B1 / 0.6	3								✓	✓				
B2 / 0.2	4													
B2 / 0.5	5								✓	✓				
B2 / 1.0	6								✓	✓				
B2 / 1.2	7								✓	✓				
B3 / 0.3	8								✓	✓				
B3 / 0.6	9								✓	✓				
GW3 / 0.2	10													
GW3 / 0.5	11						✓				✓	✓		
GW4 / 0.2	12						✓							
GW4 / 1.0	13								✓	✓				
GW4 / 1.0 PFAS	14								~~✓~~	~~✓~~				✓
GW4 / 2.0	15										✓	✓		
GW4 / 2.0 % clay	~~16~~ 15	↓		↓	↓	↓							✓	

Environmental Division
Melbourne
Work Order Reference
EM2215104

Telephone : + 61-3-8549 9600

SH 9/8.

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
pH as $CaCl_3$

* KEY:
Preservative: 1 = NaOH; 2 = HNO_3; 3 = H_2SO_4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company: ALS	Company:	Company:
Date/time: 08.08.22	Date/time 8/8/22 13:15	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135 - 11488

Project Number: 21135			Laboratory: **ALS Springvale**			Turnaround Time:		1 day		2 days		3 days	5 days												
Project Location: Northcote			Address: 4 Westall Road, Springvale			Number of Containers	Analysis Requested																		
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9626				P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Suite 6	pH of CaCl2	Sulphide	P-22	PFAS (28)	TRH/BTEXN									
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-21																						
Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*																				
GW41 3.0	17	05.08.22		1	ICE	1			✓	✓															
GW41 3.0 PFAS	18	↓		↓	↓	↓																			
GW41 4.0	19																								
GW41 5.0	20																								
GW41 6.0	21																								
GW41 7.0	22								✓	✓															
GW41 8.0	23																								
GW050822A	24								✓	✓															
GW050822B	25								✓	✓															
TB050822	26					↓									✓										

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
pH as $CaCl_3$

* KEY:
Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental.	Company:	Company:	Company:
Date/time: 08.08.22	Date/time	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2215210**	Page	: 1 of 35
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 09-Aug-2022 12:40
Order number	: ----	Date Analysis Commenced	: 10-Aug-2022
C-O-C number	: 21135-11490	Issue Date	: 17-Aug-2022 13:47
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 36		
No. of samples analysed	: 24		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Sanjay Parekh	LCMS Coordinator	Melbourne Organics, Springvale, VIC
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2215092 #8 Poor matrix spike recovery for Hexavalent Chromium due to matrix interferences. Confirmed by re-analysis.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	----	----	8.2
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	----	----	7.3
Moisture Content	----	1.0	%	7.3	13.5	7.1	17.8	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	<5	8	<5	11	6
Barium	7440-39-3	10	mg/kg	30	120	30	30	40
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	27	18	37	----
Cobalt	7440-48-4	2	mg/kg	30	7	32	11	----
Copper	7440-50-8	5	mg/kg	33	29	43	19	26
Lead	7439-92-1	5	mg/kg	<5	15	<5	15	<5
Manganese	7439-96-5	5	mg/kg	690	210	736	295	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	107	10	122	9	70
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	18	21	16	30	----
Zinc	7440-66-6	5	mg/kg	55	33	65	14	40
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	----	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	----	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	----	----	140
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	----	----	----	<2
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	----	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	----	<0.02

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Phenol	108-95-2	1	mg/kg		----	----	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	----	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		----	----	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		----	----	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	----	----	<5
Dinoseb	88-85-7	5	mg/kg		----	----	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	----	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
					Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued									
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	----	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	----	----	<1.0
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		----	----	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		----	----	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		----	----	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		----	----	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		----	----	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	----	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		----	----	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		----	----	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		----	----	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	----	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg		----	----	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	----	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	<10
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	B4/0.5	B5/0.2	B5/0.7	B6/0.2
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-001	EM2215210-003	EM2215210-004	EM2215210-006	EM2215210-008
					Result	Result	Result	Result	Result
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO) - Continued									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	91.8
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	----	104
Toluene-D8	2037-26-5	0.1	%		----	----	----	----	102
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	----	101
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		98.2	104	104	96.0	----
2-Chlorophenol-D4	93951-73-6	0.5	%		86.2	90.2	91.2	84.4	----
2.4.6-Tribromophenol	118-79-6	0.5	%		83.3	85.5	86.6	78.2	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		99.2	104	106	99.1	----
Anthracene-d10	1719-06-8	0.5	%		108	112	115	106	----
4-Terphenyl-d14	1718-51-0	0.5	%		106	110	112	104	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	----	88.6
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	----	68.2
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	----	76.4
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	----	86.4
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	----	78.1
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	----	86.8
Anthracene-d10	1719-06-8	0.025	%		----	----	----	----	93.6
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	----	88.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		108	93.8	102	108	----
Toluene-D8	2037-26-5	0.2	%		84.5	78.8	83.1	83.2	----
4-Bromofluorobenzene	460-00-4	0.2	%		89.4	81.8	88.3	89.1	----

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	B6/0.4	B6/0.4 PFAS	B7/0.35	B7/0.9	B7/0.9 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
					EM2215210-009	EM2215210-010	EM2215210-011	EM2215210-012	EM2215210-013
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**----**	**13.5**	**----**	**----**	**11.0**
Moisture Content	----	1.0	%		**13.2**	**----**	**11.1**	**15.2**	**----**
EG005(ED093)T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	**----**	<5	**7**	**----**
Arsenic	7440-38-2	5	mg/kg		**8**	**----**	<5	<5	**----**
Barium	7440-39-3	10	mg/kg		**20**	**----**	**60**	**160**	**----**
Beryllium	7440-41-7	1	mg/kg		**1**	**----**	<1	<1	**----**
Boron	7440-42-8	50	mg/kg		<50	**----**	<50	<50	**----**
Cadmium	7440-43-9	1	mg/kg		<1	**----**	<1	<1	**----**
Chromium	7440-47-3	2	mg/kg		**31**	**----**	**18**	**20**	**----**
Cobalt	7440-48-4	2	mg/kg		**23**	**----**	**7**	**6**	**----**
Copper	7440-50-8	5	mg/kg		**14**	**----**	**17**	**17**	**----**
Lead	7439-92-1	5	mg/kg		**18**	**----**	**16**	**15**	**----**
Manganese	7439-96-5	5	mg/kg		**118**	**----**	**76**	**139**	**----**
Molybdenum	7439-98-7	2	mg/kg		<2	**----**	<2	<2	**----**
Nickel	7440-02-0	2	mg/kg		**11**	**----**	**14**	**16**	**----**
Selenium	7782-49-2	5	mg/kg		<5	**----**	<5	<5	**----**
Silver	7440-22-4	2	mg/kg		<2	**----**	<2	<2	**----**
Tin	7440-31-5	5	mg/kg		<5	**----**	<5	<5	**----**
Vanadium	7440-62-2	5	mg/kg		**31**	**----**	**15**	**29**	**----**
Zinc	7440-66-6	5	mg/kg		**17**	**----**	**43**	**37**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	**----**	<0.1	<0.1	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Fluorene	86-73-7	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Anthracene	120-12-7	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Pyrene	129-00-0	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**
Chrysene	218-01-9	0.5	mg/kg		<0.5	**----**	<0.5	<0.5	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B6/0.4	B6/0.4 PFAS	B7/0.35	B7/0.9	B7/0.9 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-009	EM2215210-010	EM2215210-011	EM2215210-012	EM2215210-013
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B6/0.4	B6/0.4 PFAS	B7/0.35	B7/0.9	B7/0.9 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-009	EM2215210-010	EM2215210-011	EM2215210-012	EM2215210-013
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	**0.0021**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	----	**0.0030**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	----	----	**0.0140**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	----	**0.0003**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	**0.0070**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	**0.0007**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	**0.0028**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	**0.0003**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	<0.0002	----	----	**0.0004**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B6/0.4	B6/0.4 PFAS	B7/0.35	B7/0.9	B7/0.9 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-009	EM2215210-010	EM2215210-011	EM2215210-012	EM2215210-013
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	<0.0002	----	----	**0.0306**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	**0.0210**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	<0.0002	----	----	**0.0273**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**99.5**	----	**97.4**	**96.7**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**87.9**	----	**85.0**	**84.8**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**80.7**	----	**77.7**	**79.7**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**102**	----	**99.4**	**102**	----
Anthracene-d10	1719-06-8	0.5	%		**112**	----	**107**	**110**	----
4-Terphenyl-d14	1718-51-0	0.5	%		**108**	----	**104**	**109**	----
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B6/0.4	B6/0.4 PFAS	B7/0.35	B7/0.9	B7/0.9 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-009	EM2215210-010	EM2215210-011	EM2215210-012	EM2215210-013
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		105	----	96.4	103	----
Toluene-D8	2037-26-5	0.2	%		82.9	----	77.6	85.3	----
4-Bromofluorobenzene	460-00-4	0.2	%		88.0	----	81.8	86.6	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	107	----	----	120
13C8-PFOA	----	0.0002	%		----	104	----	----	96.0

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
					EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		**8.4**	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**6.8**	**6.9**	----	----	----
Moisture Content	----	1.0	%		----	----	**10.1**	**12.7**	**13.7**
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)									
Sulfate as SO4 2-	14808-79-8	50	mg/kg		**210**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		<5	----	<5	<5	<5
Barium	7440-39-3	10	mg/kg		**20**	----	**60**	**10**	**10**
Beryllium	7440-41-7	1	mg/kg		<1	----	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		----	----	**10**	**15**	**15**
Cobalt	7440-48-4	2	mg/kg		----	----	**2**	<2	<2
Copper	7440-50-8	5	mg/kg		**20**	----	<5	<5	**10**
Lead	7439-92-1	5	mg/kg		<5	----	**7**	<5	<5
Manganese	7439-96-5	5	mg/kg		----	----	**58**	**74**	**17**
Molybdenum	7439-98-7	2	mg/kg		<2	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**66**	----	**4**	<2	**3**
Selenium	7782-49-2	5	mg/kg		<5	----	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	----	<2	<2	<2
Tin	7440-31-5	5	mg/kg		<5	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		----	----	**10**	<5	**5**
Zinc	7440-66-6	5	mg/kg		**38**	----	**6**	<5	**10**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	----	----	----	----
EK030: Cyanide Amenable to Chlorination									
Cyanide amenable to chlorination	----	1	mg/kg		<1	----	----	----	----
EK040T: Fluoride Total									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
				Result	Result	Result	Result	Result
EK040T: Fluoride Total - Continued								
Fluoride	16984-48-8	40	mg/kg	110	----	----	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	<2	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	<1	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	----	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		<0.01	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		<0.01	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	**1.2**	**1.2**	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued								
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	----	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	<1	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	----	----	----
Dinoseb	88-85-7	5	mg/kg	<5	----	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	----	----	----	----
^ Cresols (Total)	----	1	mg/kg	<1	----	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		<0.5	----	----	----	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		<1.0	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	----	----	----	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	----	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	----	----	----	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	----	----	----	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	----	----	----	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	----	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	----	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	----	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	----	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	----	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	----	----	----	----
Endrin	72-20-8	0.03	mg/kg		<0.03	----	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	----	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	<10	<10	<10
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	----	<50	<50	<50
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	<100	<100	<100
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	----	<50	<50	<50
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		----	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	<50	<50
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	<100	<100
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	----	<50	<50	<50
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		----	----	<50	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		----	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Naphthalene	91-20-3	1	mg/kg	----	----	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	<0.0002	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		<0.001	----	----	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		<0.01	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**78.1**	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		**103**	----	----	----	----
Toluene-D8	2037-26-5	0.1	%		**104**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		**102**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B8/0.2	B8/0.2 PFAS	B8/0.4	B9/0.3	B9/0.6
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-014	EM2215210-015	EM2215210-016	EM2215210-018	EM2215210-019
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	95.8	96.8	99.2
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	84.1	85.4	87.5
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	76.6	78.5	79.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	99.1	100	103
Anthracene-d10	1719-06-8	0.5	%		----	----	108	110	112
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	104	106	108
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		68.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		60.8	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		69.9	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		66.2	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		61.4	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		72.5	----	----	----	----
Anthracene-d10	1719-06-8	0.025	%		78.1	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		77.8	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	106	115	86.4
Toluene-D8	2037-26-5	0.2	%		----	----	83.4	92.1	77.9
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	86.9	97.2	78.3
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	117	----	----	----
13C8-PFOA	----	0.0002	%		----	97.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	B10/0.2	B10/0.4	B080822A	GW3A/1.0	GW3A/1.0 PFAS
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2215210-020	EM2215210-021	EM2215210-022	EM2215210-026	EM2215210-027
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**----**	**----**	**----**	**----**	**11.4**
Moisture Content	----	1.0	%	**5.4**	**9.2**	**13.5**	**12.1**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	**----**
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	**----**
Barium	7440-39-3	10	mg/kg	**30**	<10	**50**	**260**	**----**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	**----**
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	**----**
Chromium	7440-47-3	2	mg/kg	**17**	**9**	**17**	**18**	**----**
Cobalt	7440-48-4	2	mg/kg	**30**	<2	**6**	<2	**----**
Copper	7440-50-8	5	mg/kg	**37**	**16**	**15**	**24**	**----**
Lead	7439-92-1	5	mg/kg	<5	<5	**18**	**11**	**----**
Manganese	7439-96-5	5	mg/kg	**693**	**62**	**85**	**95**	**----**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	**----**
Nickel	7440-02-0	2	mg/kg	**116**	**3**	**16**	**3**	**----**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	**----**
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	**----**
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	**----**
Vanadium	7440-62-2	5	mg/kg	**15**	**12**	**18**	**10**	**----**
Zinc	7440-66-6	5	mg/kg	**61**	**9**	**55**	**8**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	**61.0**	**----**
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	**9.2**	**----**
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	**7.8**	**----**
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	**17.9**	**----**
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	**4.6**	**----**
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	**5.1**	**----**
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	**4.2**	**----**
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	**0.8**	**----**
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	**0.7**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B10/0.2	B10/0.4	B080822A	GW3A/1.0	GW3A/1.0 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-020	EM2215210-021	EM2215210-022	EM2215210-026	EM2215210-027
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	**111**	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.7**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	**870**	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	**2570**	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	**420**	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	**3860**	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	**14**	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	**14**	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	**1490**	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	**2330**	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	**150**	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	**3970**	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	**1420**	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	**68**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B10/0.2	B10/0.4	B080822A	GW3A/1.0	GW3A/1.0 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-020	EM2215210-021	EM2215210-022	EM2215210-026	EM2215210-027
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	----	----	----	**0.0002**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	----	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	----	----	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	----	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	----	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	----	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B10/0.2	B10/0.4	B080822A	GW3A/1.0	GW3A/1.0 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-020	EM2215210-021	EM2215210-022	EM2215210-026	EM2215210-027
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	----	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	----	----	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	----	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	----	----	**0.0010**
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	----	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	----	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	----	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	----	----	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	----	----	**0.0012**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	----	----	**0.0002**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	----	----	**0.0002**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**96.7**	**99.5**	**93.8**	**98.0**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**86.8**	**87.9**	**83.2**	**85.9**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**79.8**	**81.5**	**76.6**	**92.4**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**102**	**103**	**99.4**	**102**	----
Anthracene-d10	1719-06-8	0.5	%		**110**	**114**	**108**	**106**	----
4-Terphenyl-d14	1718-51-0	0.5	%		**108**	**110**	**106**	**112**	----
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B10/0.2	B10/0.4	B080822A	GW3A/1.0	GW3A/1.0 PFAS
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2215210-020	EM2215210-021	EM2215210-022	EM2215210-026	EM2215210-027
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		97.1	97.0	106	102	----
Toluene-D8	2037-26-5	0.2	%		78.7	81.0	81.6	82.7	----
4-Bromofluorobenzene	460-00-4	0.2	%		84.8	83.8	85.1	86.6	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	----	----	105
13C8-PFOA	----	0.0002	%		----	----	----	----	102

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW3A/2.0	GW3A/3.0	GW3A/7.0	----	----
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2215210-028	EM2215210-029	EM2215210-033	--------	--------
				Result	Result	Result	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	**7.6**	----	**7.5**	----	----
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	**8.3**	----	----	----	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	**93**	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**13.4**	----	----	----	----
Moisture Content	----	1.0	%	----	**12.6**	**15.0**	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	**32**	----	----	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	**2.49**	----	----	----	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	**0.9**	----	----	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	**1.4**	----	----	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	<0.2	----	----	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	<0.2	----	----	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	**2.3**	----	----	----	----
ø Exchangeable Calcium Percent	----	0.2	%	**37.9**	----	----	----	----
ø Exchangeable Magnesium Percent	----	0.2	%	**62.1**	----	----	----	----
ø Exchangeable Potassium Percent	----	0.2	%	<0.2	----	----	----	----
ø Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
ø Calcium/Magnesium Ratio	----	0.2	-	**0.6**	----	----	----	----
ø Magnesium/Potassium Ratio	----	0.2	-	<0.2	----	----	----	----
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)								
Sulfate as SO4 2-	14808-79-8	50	mg/kg	**60**	----	**60**	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	<5	----	----
Arsenic	7440-38-2	5	mg/kg	----	**6**	**6**	----	----
Barium	7440-39-3	10	mg/kg	----	**50**	**50**	----	----
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	----	----
Boron	7440-42-8	50	mg/kg	----	<50	<50	----	----
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	----	**25**	**30**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW3A/2.0	GW3A/3.0	GW3A/7.0	----	----
			Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2215210-028	EM2215210-029	EM2215210-033	--------	--------
				Result	Result	Result	----	----
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Cobalt	7440-48-4	2	mg/kg	----	<2	<2	----	----
Copper	7440-50-8	5	mg/kg	----	**32**	**29**	----	----
Iron	7439-89-6	0.005	%	**1.89**	----	----	----	----
Lead	7439-92-1	5	mg/kg	----	**14**	**17**	----	----
Manganese	7439-96-5	5	mg/kg	----	**88**	**37**	----	----
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	----	----
Nickel	7440-02-0	2	mg/kg	----	**4**	**7**	----	----
Selenium	7782-49-2	5	mg/kg	----	<5	<5	----	----
Silver	7440-22-4	2	mg/kg	----	<2	<2	----	----
Tin	7440-31-5	5	mg/kg	----	<5	<5	----	----
Vanadium	7440-62-2	5	mg/kg	----	**15**	**15**	----	----
Zinc	7440-66-6	5	mg/kg	----	**27**	**28**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	----
EP004: Organic Matter								
Organic Matter	----	0.5	%	**1.2**	----	----	----	----
Total Organic Carbon	----	0.5	%	**0.7**	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	**51.7**	**10.6**	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	**4.5**	**2.0**	----	----
Fluorene	86-73-7	0.5	mg/kg	----	**3.4**	**1.4**	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	**7.1**	**3.4**	----	----
Anthracene	120-12-7	0.5	mg/kg	----	**1.8**	**0.9**	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	**1.8**	**0.9**	----	----
Pyrene	129-00-0	0.5	mg/kg	----	**1.6**	**0.8**	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW3A/2.0	GW3A/3.0	GW3A/7.0	----	----
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2215210-028	EM2215210-029	EM2215210-033	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	**71.9**	**20.0**	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	<0.5	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	**0.6**	**0.6**	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	**1.2**	**1.2**	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	----	----	
C10 - C14 Fraction	----	50	mg/kg	----	**600**	**120**	----	----	
C15 - C28 Fraction	----	100	mg/kg	----	**2060**	**480**	----	----	
C29 - C36 Fraction	----	100	mg/kg	----	**620**	**120**	----	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	**3280**	**720**	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	----	**19**	<10	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	**18**	<10	----	----	
>C10 - C16 Fraction	----	50	mg/kg	----	**1040**	**230**	----	----	
>C16 - C34 Fraction	----	100	mg/kg	----	**2150**	**480**	----	----	
>C34 - C40 Fraction	----	100	mg/kg	----	**260**	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	**3450**	**710**	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	**1000**	**220**	----	----	
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	----	<0.2	<0.2	----	----	
Toluene	108-88-3	0.5	mg/kg	----	<0.5	<0.5	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	<0.5	----	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	**0.7**	<0.5	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	<0.5	----	----	
^ Sum of BTEX	----	0.2	mg/kg	----	**0.7**	<0.2	----	----	
^ Total Xylenes	----	0.5	mg/kg	----	**0.7**	<0.5	----	----	
Naphthalene	91-20-3	1	mg/kg	----	**42**	**9**	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	----	**97.0**	**95.9**	----	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	----	**86.5**	**87.0**	----	----	
2.4.6-Tribromophenol	118-79-6	0.5	%	----	**94.4**	**92.8**	----	----	
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW3A/2.0	GW3A/3.0	GW3A/7.0	----	----
				Sampling date / time	08-Aug-2022 00:00	08-Aug-2022 00:00	08-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2215210-028	EM2215210-029	EM2215210-033	--------	--------
					Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	**102**	**102**	----	----
Anthracene-d10	1719-06-8	0.5	%		----	**108**	**110**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	**112**	**111**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	**98.6**	**104**	----	----
Toluene-D8	2037-26-5	0.2	%		----	**83.2**	**84.1**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	**87.4**	**86.2**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB080822	----	----	----	----
				Sampling date / time	08-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2215210-023	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**113**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**92.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**99.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11490

Project Number: 21135	Laboratory: **ALS Springvale**
Project Location: Northcote	Address: 4 Westall Road, Springvale
Project Manager: SH	Phone No: 8549 9600 Fax: 8549 9626
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au	Lab Quote Number: MEBQ-266-21

Turnaround Time: 1 day | 2 days | 3 days | ✓ 5 days

	Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS (28)	pH as CaCl2	Sulphate	P-22
1	B4 / 0.2		08.08.22		1	ICE	1			✓	✓				
2	B4 / 0.2 PFAS		08.08.22		1	ICE	1								
3	B4 / 0.5		08.08.22		1	ICE	1			✓	✓				
4	B5 / 0.2		08.08.22		1	ICE	1			✓	✓				
5	B5 / 0.2 PFAS		08.08.22		1	ICE	2								
6	B5 / 0.7		08.08.22		1	ICE	1			✓	✓				
7	B5 / 0.7 PFAS		08.08.22		1	ICE	1								
8	B6 / 0.2		08.08.22		1	ICE	1	✓							
9	B6 / 0.4		08.08.22		1	ICE	1			✓	✓				
10	B6 / 0.4 PFAS		08.08.22		1	ICE	1					✓			
11	B7 / 0.35		08.08.22		1	ICE	1			✓	✓				
12	B7 / 0.9		08.08.22		1	ICE	2			✓	✓				
13	B7 / 0.9 PFAS		08.08.22		1	ICE	1					✓			
14	B8 / 0.2		08.08.22		1	ICE	1	✓				✓	✓	✓	
15	B8 / 0.2 PFAS		08.08.22		1	ICE	1					✓			

Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.

Phenols: halogenated and non-halogenated

pH as $CaCl_2$

Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by: Shaine	Relinquished by:	Received by:
Signature:	Signature: Shaine	Signature:	Signature:
Company: Compass Environmental	Company: ALS	Company:	Company:
Date/time: 09.08.22	Date/time 9/8/22 12:40	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Environmental Division
Melbourne
Work Order Reference
EM2215210

Telephone : + 61-3-8549 9600

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11490

| | | |

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2216071**	Page	: 1 of 13
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: Stephen Harvey	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +613 9819 4704	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 03-Aug-2022 11:57
Order number	: ----	Date Analysis Commenced	: 23-Aug-2022
C-O-C number	: ----	Issue Date	: 25-Aug-2022 19:22
Sampler	: ----		
Site	: ----		
Quote number	: MEBQ/266/21		
No. of samples received	: 15		
No. of samples analysed	: 15		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP075(SIM): Particular samples required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly.
- EP075(SIM): EM2216071_001 has LOR raised for Acenaphthylene due to sample matrix interferences.
- EN60a-G: EM2216071-6 Due to limited sample for leach analysis, a scaled down amount of 50g into 1000mL was used.
- EN60-DIa-G: EM2216071-14 Due to limited sample for leach analysis, a scaled down amount of 50g into 1000mL was used.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EN60: Where leachable PFAS analysis is requested, centrifugation rather than pressure filtration is used as the default approach for removal of particulates, in line with AS 4439.3.

Analytical Results

Sub-Matrix: **ASLP LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B7/0.9 PFAS
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
					EM2216071-001	EM2216071-002	EM2216071-003	EM2216071-004	EM2216071-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		**77.6**	**3.4**	**351**	**44.6**	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.3	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		**4.7**	<1.0	**32.2**	**5.2**	----
Fluorene	86-73-7	1.0	µg/L		**11.2**	**3.5**	**29.8**	**12.7**	----
Phenanthrene	85-01-8	1.0	µg/L		**11.4**	**10.5**	**27.0**	**9.5**	----
Anthracene	120-12-7	1.0	µg/L		<1.0	**2.0**	**4.2**	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	**2.3**	**1.1**	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	**1.8**	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		**105**	**23.5**	**445**	**72.0**	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.6	<0.5	<0.5	<0.5	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	----	----	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	----	----	**0.07**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	----	----	**0.33**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	----	----	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	----	----	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	----	----	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	----	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	----	----	**0.08**

Analytical Results

Sub-Matrix: ASLP LEACHATE (Matrix: WATER)				Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B7/0.9 PFAS
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2216071-001	EM2216071-002	EM2216071-003	EM2216071-004	EM2216071-005
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	----	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	----	----	**0.01**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	----	----	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	----	----	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	----	----	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	----	----	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	----	----	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	----	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	----	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	----	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	----	----	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	----	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	----	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: ASLP LEACHATE (Matrix: WATER)				Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B7/0.9 PFAS
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2216071-001	EM2216071-002	EM2216071-003	EM2216071-004	EM2216071-005
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	----	----	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	----	----	**0.63**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	----	----	**0.43**
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	----	----	**0.56**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**102**	**101**	**106**	**96.9**	----
Anthracene-d10	1719-06-8	1.0	%		**102**	**104**	**98.2**	**102**	----
4-Terphenyl-d14	1718-51-0	1.0	%		**121**	**115**	**109**	**107**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	----	----	----	**97.3**
13C8-PFOA	----	0.02	%		----	----	----	----	**102**

Analytical Results

Sub-Matrix: ASLP LEACHATE (Matrix: WATER)				Sample ID	B4/0.2	LFG3/2.0	B10/0.2	----	----
				Sampling date / time	08-Aug-2022 00:00	03-Aug-2022 00:00	08-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2216071-006	EM2216071-007	EM2216071-008	--------	--------
					Result	Result	Result	----	----
EG005(ED093)C: Leachable Metals by ICPAES									
Antimony	7440-36-0	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Arsenic	7440-38-2	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Barium	7440-39-3	0.1	mg/L		<0.1	**0.6**	<0.1	----	----
Beryllium	7440-41-7	0.05	mg/L		<0.05	<0.05	<0.05	----	----
Boron	7440-42-8	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Cadmium	7440-43-9	0.05	mg/L		<0.05	<0.05	<0.05	----	----
Chromium	7440-47-3	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Cobalt	7440-48-4	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Copper	7440-50-8	0.1	mg/L		<0.1	**0.2**	<0.1	----	----
Lead	7439-92-1	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Manganese	7439-96-5	0.1	mg/L		**2.8**	**23.9**	**1.8**	----	----
Nickel	7440-02-0	0.1	mg/L		<0.1	**0.1**	<0.1	----	----
Selenium	7782-49-2	0.05	mg/L		<0.05	<0.05	<0.05	----	----
Silver	7440-22-4	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Tin	7440-31-5	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Vanadium	7440-62-2	0.1	mg/L		<0.1	<0.1	<0.1	----	----
Zinc	7440-66-6	0.1	mg/L		**0.2**	**0.6**	<0.1	----	----
Molybdenum	7439-98-7	0.1	mg/L		<0.1	<0.1	<0.1	----	----
EG035C: Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B4/0.2
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
					EM2216071-010	EM2216071-011	EM2216071-012	EM2216071-013	EM2216071-014
					Result	Result	Result	Result	Result
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	----	----	----	<0.0001
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		**40.9**	**3.3**	**36.1**	**33.7**	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	**1.3**	<1.2	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		**3.7**	<1.0	**10.1**	**2.8**	----
Fluorene	86-73-7	1.0	µg/L		**10.1**	**3.8**	**13.8**	**6.8**	----
Phenanthrene	85-01-8	1.0	µg/L		**9.1**	**12.5**	**17.4**	**6.9**	----
Anthracene	120-12-7	1.0	µg/L		<1.1	**2.4**	**3.0**	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	**1.9**	**1.3**	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	**1.8**	**1.4**	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.2	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		**63.8**	**27.0**	**83.1**	**50.2**	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<1.0	<1.2	<0.5	----
EG005(ED093)W: Water Leachable Metals by ICPAES									
Antimony	7440-36-0	0.01	mg/L		----	----	----	----	<0.01
Arsenic	7440-38-2	0.01	mg/L		----	----	----	----	<0.01
Barium	7440-39-3	0.1	mg/L		----	----	----	----	<0.1
Beryllium	7440-41-7	0.01	mg/L		----	----	----	----	<0.01
Boron	7440-42-8	0.1	mg/L		----	----	----	----	<0.1
Cadmium	7440-43-9	0.005	mg/L		----	----	----	----	<0.005
Chromium	7440-47-3	0.01	mg/L		----	----	----	----	<0.01
Cobalt	7440-48-4	0.01	mg/L		----	----	----	----	**0.02**
Copper	7440-50-8	0.01	mg/L		----	----	----	----	**0.02**
Lead	7439-92-1	0.01	mg/L		----	----	----	----	<0.01
Manganese	7439-96-5	0.01	mg/L		----	----	----	----	**0.44**
Nickel	7440-02-0	0.01	mg/L		----	----	----	----	**0.06**
Selenium	7782-49-2	0.01	mg/L		----	----	----	----	<0.01

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B4/0.2
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2216071-010	EM2216071-011	EM2216071-012	EM2216071-013	EM2216071-014
					Result	Result	Result	Result	Result
EG005(ED093)W: Water Leachable Metals by ICPAES - Continued									
Silver	7440-22-4	0.01	mg/L		----	----	----	----	<0.01
Tin	7440-31-5	0.01	mg/L		----	----	----	----	<0.01
Vanadium	7440-62-2	0.01	mg/L		----	----	----	----	<0.01
Zinc	7440-66-6	0.01	mg/L		----	----	----	----	**0.04**
Molybdenum	7439-98-7	0.01	mg/L		----	----	----	----	<0.01
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**104**	**95.4**	**97.8**	**111**	----
Anthracene-d10	1719-06-8	1.0	%		**106**	**114**	**104**	**104**	----
4-Terphenyl-d14	1718-51-0	1.0	%		**124**	**107**	**103**	**122**	----

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	LFG3/2.0	B10/0.2	----	----	----
				Sampling date / time	03-Aug-2022 00:00	08-Aug-2022 00:00	----	----	----
					EM2216071-015	EM2216071-016	--------	--------	--------
					Result	Result	----	----	----
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG005(ED093)W: Water Leachable Metals by ICPAES									
Antimony	7440-36-0	0.01	mg/L		<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.01	mg/L		<0.01	<0.01	----	----	----
Barium	7440-39-3	0.1	mg/L		<0.1	<0.1	----	----	----
Beryllium	7440-41-7	0.01	mg/L		<0.01	<0.01	----	----	----
Boron	7440-42-8	0.1	mg/L		<0.1	<0.1	----	----	----
Cadmium	7440-43-9	0.005	mg/L		<0.005	<0.005	----	----	----
Chromium	7440-47-3	0.01	mg/L		<0.01	<0.01	----	----	----
Cobalt	7440-48-4	0.01	mg/L		<0.01	**0.02**	----	----	----
Copper	7440-50-8	0.01	mg/L		**0.01**	**0.02**	----	----	----
Lead	7439-92-1	0.01	mg/L		**0.01**	<0.01	----	----	----
Manganese	7439-96-5	0.01	mg/L		**0.16**	**0.52**	----	----	----
Nickel	7440-02-0	0.01	mg/L		**0.01**	**0.06**	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Silver	7440-22-4	0.01	mg/L		<0.01	<0.01	----	----	----
Tin	7440-31-5	0.01	mg/L		<0.01	<0.01	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.01	mg/L		**0.02**	**0.05**	----	----	----
Molybdenum	7439-98-7	0.01	mg/L		<0.01	<0.01	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B3/0.6	LFG2/6.0	GW050822A	GW4/0.2	B7/0.9 PFAS
				Sampling date / time	05-Aug-2022 00:00	02-Aug-2022 00:00	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2216071-001	EM2216071-002	EM2216071-003	EM2216071-004	EM2216071-005
					Result	Result	Result	Result	Result
EN60: ASLP Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)									
Initial pH	----	0.1	pH Unit		**9.3**	**8.9**	**8.5**	**9.1**	**----**
After HCl pH	----	0.1	pH Unit		**1.5**	**1.5**	**1.5**	**1.5**	**----**
Extraction Fluid pH	----	0.1	pH Unit		**5.0**	**5.0**	**5.0**	**5.0**	**----**
Final pH	----	0.1	pH Unit		**5.1**	**5.3**	**5.1**	**5.1**	**----**
EN60: ASLP Leaching Procedure - Inorganics/PFAS (Plastic Vessel)									
Initial pH	----	0.1	pH Unit		**----**	**----**	**----**	**----**	**9.4**
After HCl pH	----	0.1	pH Unit		**----**	**----**	**----**	**----**	**1.5**
Extraction Fluid pH	----	0.1	pH Unit		**----**	**----**	**----**	**----**	**5.0**
Final pH	----	0.1	pH Unit		**----**	**----**	**----**	**----**	**5.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	B4/0.2	LFG3/2.0	B10/0.2	B3/0.6	LFG2/6.0
				Sampling date / time	08-Aug-2022 00:00	03-Aug-2022 00:00	08-Aug-2022 00:00	05-Aug-2022 00:00	02-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2216071-006	EM2216071-007	EM2216071-008	EM2216071-010	EM2216071-011
					Result	Result	Result	Result	Result
EN60: ASLP Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)									
Initial pH	----	0.1	pH Unit		**9.5**	**8.8**	**9.5**	**----**	**----**
After HCl pH	----	0.1	pH Unit		**1.5**	**1.5**	**1.5**	**----**	**----**
Extraction Fluid pH	----	0.1	pH Unit		**5.0**	**5.0**	**5.0**	**----**	**----**
Final pH	----	0.1	pH Unit		**5.2**	**5.2**	**5.3**	**----**	**----**
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)									
Final pH	----	0.1	pH Unit		**----**	**----**	**----**	**6.2**	**9.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW050822A	GW4/0.2	B4/0.2	LFG3/2.0	B10/0.2
			Sampling date / time	05-Aug-2022 00:00	05-Aug-2022 00:00	08-Aug-2022 00:00	03-Aug-2022 00:00	08-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2216071-012	EM2216071-013	EM2216071-014	EM2216071-015	EM2216071-016
				Result	Result	Result	Result	Result
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)								
Final pH	----	0.1	pH Unit	**7.9**	**9.0**	**9.6**	**9.2**	**9.6**

Surrogate Control Limits

Sub-Matrix: ASLP LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	127
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	44	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: DI WATER LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	127
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	44	124

Rebatch

Client / Client code: COMPENV
Project: 21135
Project Manager: STEPHEN HARVEY
Date /time sample rec: 3/08/2022 11:57
Date/time Instructions rec: Thu 18/08/2022 4:02 PM
Due date: Thursday, 25 August 2022
Due date surcharge: **STANDARD**
Client aware of any holding time issues

CS Contact: KATIE DAVIS
Additional Information:
*****Metals screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn**
Please include all report recipients as per original workorder

MS: 5251 MPS: 1344

	Sample information							Analysis									
													Leach				
New Lab ID	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container	Number of Containers				ASLP ACETATE BUFFER - METALS***	ASLP DI WATER - METALS***	ASLP ACETATE BUFFER - PAH	ASLP DI WATER - PAH	ASLP - PFAS		Shortest Holding time expiry
1	B3/0.6	5/08/2022 0:00	EM2215104	9	MS:4810-4812	SOIL	1						X	X			19-Aug-22
2	LFG2/6.0	2/08/2022 0:00	EM2214832	20	MS:4706-4707	SOIL	1						X	X			16-Aug-22
3	GW050822A	5/08/2022 0:00	EM2215104	24	MS:4810-4812	SOIL	1						X	X			19-Aug-22
4	GW4/0.2	5/08/2022 0:00	EM2215104	12	MS:4810-4812	SOIL	1						X	X			19-Aug-22
5	B7/0.9 PFAS	8/08/2022 0:00	EM2215210	13	MPS:1266	SOIL	1								X		22-Aug-22
6	B4/0.2	8/08/2022 0:00	EM2215210	1	MS:4878-79	SOIL	1				X	X					22-Aug-22
7	LFG3/2.0	3/08/2022 0:00	EM2214797	23	MS:4735-4736	SOIL	1				X	X					17-Aug-22
8	B10/0.2	8/08/2022 0:00	EM2215210	20	MS:4878-79	SOIL	1				X	X					22-Aug-22
9	LFG2/6.0	2/08/2022 0:00	EM2214832	20	MS:4706-4707	SOIL	1				X	X					16-Aug-22
						TOTAL	9										

Environmental Division
Melbourne
Work Order Reference
EM2216071

Telephone : +61-3-8549 9600

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2217041**	Page	: 1 of 34
Client	: **COMPASS ENVIRONMENTAL**	Laboratory	: Environmental Division Melbourne
Contact	: LAB RESULTS	Contact	: Katie Davis
Address	: SUITE 6 5 ROSE STREET HAWTHORN EAST 3123	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 21135	Date Samples Received	: 02-Sep-2022 15:04
Order number	: ----	Date Analysis Commenced	: 02-Sep-2022
C-O-C number	: 21135-11525	Issue Date	: 08-Sep-2022 18:55
Sampler	: ----		
Site	: Northcote		
Quote number	: MEBQ/266/21		
No. of samples received	: 28		
No. of samples analysed	: 15		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Celeste Tong	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC
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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EG005-T : EM2217041 #21 Poor duplicate precision for total Copper, Tin and Zinc due to sample matrix. Confirmed by re-digestion and re-analysis.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Analysis of asbestos from swabs and tapes is not covered under the current scope of NATA accreditation.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EA200: N/A - Not Applicable
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	7.4	7.8	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	17.4	16.8	13.3	----
Moisture Content	----	1.0	%	13.1	----	----	----	15.8
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	----	----	120	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	6	----	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	----	7	----	<5
Barium	7440-39-3	10	mg/kg	20	----	220	----	50
Beryllium	7440-41-7	1	mg/kg	<1	----	1	----	<1
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	<1
Chromium	7440-47-3	2	mg/kg	8	----	----	----	18
Cobalt	7440-48-4	2	mg/kg	2	----	----	----	4
Copper	7440-50-8	5	mg/kg	10	----	15	----	8
Lead	7439-92-1	5	mg/kg	10	----	16	----	9
Manganese	7439-96-5	5	mg/kg	61	----	----	----	114
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg	8	----	12	----	6
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	<5
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	<2
Tin	7440-31-5	5	mg/kg	<5	----	<5	----	<5
Vanadium	7440-62-2	5	mg/kg	12	----	----	----	8
Zinc	7440-66-6	5	mg/kg	32	----	44	----	13
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	----	----
EK040T: Fluoride Total								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EK040T: Fluoride Total - Continued								
Fluoride	16984-48-8	40	mg/kg	----	----	**480**	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	<2	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	----	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	<1	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	<1	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	<0.02	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	<0.01	----	----
Methylene chloride	75-09-2	0.4	mg/kg	----	----	<0.4	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	<0.02	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	<0.01	----	----
Chloroform	67-66-3	0.02	mg/kg	----	----	<0.02	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	<0.01	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	<0.01	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	<0.02	----	----
Trichloroethene	79-01-6	0.02	mg/kg	----	----	<0.02	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	<0.04	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	<0.01	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	<0.02	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	<0.02	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	----	<0.02	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		----	----	<0.02	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	<0.02	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	<0.02	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	<0.01	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	<0.01	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	<0.01	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	<0.01	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	<0.03	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	<0.03	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued								
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	<0.05	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	----	<1	----	----
2-Methylphenol	95-48-7	1	mg/kg	----	----	<1	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	<1	----	----
2-Nitrophenol	88-75-5	1	mg/kg	----	----	<1	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	<1	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	<5	----	----
4-Nitrophenol	100-02-7	5	mg/kg	----	----	<5	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	<5	----	----
Dinoseb	88-85-7	5	mg/kg	----	----	<5	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	----	<5	----	----
^ Cresols (Total)	----	1	mg/kg	----	----	<1	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	----	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
EP075C: Phthalate Esters								
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg	----	----	<0.5	----	----
EP075E: Nitroaromatics and Ketones								
Nitrobenzene	98-95-3	0.5	mg/kg	----	----	<0.5	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	----	<1.0	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	<0.03	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	<0.03	----	----
beta-BHC	319-85-7	0.03	mg/kg	----	----	<0.03	----	----
gamma-BHC	58-89-9	0.03	mg/kg	----	----	<0.03	----	----
delta-BHC	319-86-8	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor	76-44-8	0.03	mg/kg	----	----	<0.03	----	----
Aldrin	309-00-2	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	<0.03	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	<0.03	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.03	mg/kg	----	----	<0.03	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	<0.03	----	----
Endrin	72-20-8	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
^ Chlordane	57-74-9	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	<10
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	<50
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	<100
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	<50
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	<50
>C10 - C16 Fraction	----	50	mg/kg	----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	<100
>C16 - C34 Fraction	----	100	mg/kg	----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	<50
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	<50	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	<10	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	**0.0002**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0002**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0002**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0002**	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	<0.001	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	<0.01	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**111**	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	**97.8**	----	----
Toluene-D8	2037-26-5	0.1	%		----	----	**102**	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	**114**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/0.1	GW5/0.5 PFAS	GW5/1.0	GW5/2.0	GW5/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-001	EM2217041-003	EM2217041-004	EM2217041-005	EM2217041-006
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		96.5	----	----	----	104
2-Chlorophenol-D4	93951-73-6	0.5	%		85.9	----	----	----	90.4
2.4.6-Tribromophenol	118-79-6	0.5	%		82.3	----	----	----	76.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		99.4	----	----	----	104
Anthracene-d10	1719-06-8	0.5	%		126	----	----	----	128
4-Terphenyl-d14	1718-51-0	0.5	%		109	----	----	----	113
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	94.8	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	90.2	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	100	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	106	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	97.6	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	104	----	----
Anthracene-d10	1719-06-8	0.025	%		----	----	107	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	109	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		77.4	----	----	----	101
Toluene-D8	2037-26-5	0.2	%		69.7	----	----	----	99.3
4-Bromofluorobenzene	460-00-4	0.2	%		86.8	----	----	----	97.0
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	93.2	----	----	----
13C8-PFOA	----	0.0002	%		----	107	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	8.2	----	7.6
EA002-AD: pH (Soils) dried at 40°C								
pH Value	----	0.1	pH Unit	----	----	9.9	----	----
EA010-AD: Conductivity (Soils) dried at 40°C								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	253	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	----	11.9	22.5
Moisture Content	----	1.0	%	11.0	12.4	11.6	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	4	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	2.66	----	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	----	6.5	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	----	----	2.0	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	----	----	0.9	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	----	----	1.5	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	----	----	11.0	----	----
ø Exchangeable Calcium Percent	----	0.2	%	----	----	59.4	----	----
ø Exchangeable Magnesium Percent	----	0.2	%	----	----	18.3	----	----
ø Exchangeable Potassium Percent	----	0.2	%	----	----	8.6	----	----
ø Exchangeable Sodium Percent	----	0.2	%	----	----	13.6	----	----
ø Calcium/Magnesium Ratio	----	0.2	-	----	----	3.2	----	----
ø Magnesium/Potassium Ratio	----	0.2	-	----	----	2.1	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	----	----	----	3650
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	----	34
Arsenic	7440-38-2	5	mg/kg	6	<5	<5	----	20
Barium	7440-39-3	10	mg/kg	210	20	50	----	320
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	----	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	2
Chromium	7440-47-3	2	mg/kg	29	10	18	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued									
Cobalt	7440-48-4	2	mg/kg		8	2	24	----	----
Copper	7440-50-8	5	mg/kg		32	10	27	----	1240
Iron	7439-89-6	0.005	%		----	----	2.81	----	----
Lead	7439-92-1	5	mg/kg		16	10	<5	----	794
Manganese	7439-96-5	5	mg/kg		40	59	486	----	----
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	----	5
Nickel	7440-02-0	2	mg/kg		27	8	81	----	45
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	----	<5
Silver	7440-22-4	2	mg/kg		<2	<2	<2	----	<2
Tin	7440-31-5	5	mg/kg		<5	<5	<5	----	247
Vanadium	7440-62-2	5	mg/kg		18	15	14	----	----
Zinc	7440-66-6	5	mg/kg		118	37	47	----	1510
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	----	1.6
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		----	----	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		----	----	----	----	<1
EK030: Cyanide Amenable to Chlorination									
Cyanide amenable to chlorination	----	1	mg/kg		----	----	----	----	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		----	----	----	----	250
EP004: Organic Matter									
Organic Matter	----	0.5	%		----	----	<0.5	----	----
Total Organic Carbon	----	0.5	%		----	----	<0.5	----	----
EP010: Formaldehyde									
Formaldehyde	50-00-0	2	mg/kg		----	----	----	----	<2
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	----	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg	----	----	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg	----	----	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg	----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit	EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	----	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg	----	----	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg	----	----	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg	----	----	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	----	----	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Dinoseb	88-85-7	5	mg/kg		----	----	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	----	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	1.0
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	1.1
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	0.7
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	0.7
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	----	1.4
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	0.9
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	0.7
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	7.0
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	1.2
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	1.4
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	1.7
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	----	<0.5
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	----	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	----	----	<1.0
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		----	----	----	----	<0.03

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP075(I): Organochlorine Pesticides - Continued									
gamma-BHC	58-89-9	0.03	mg/kg		----	----	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		----	----	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		----	----	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		----	----	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	----	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		----	----	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		----	----	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		----	----	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	----	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg		----	----	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	----	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		----	----	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	----	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	<10
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	**220**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	**240**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	**460**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	**420**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	**140**
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	----	----	----	**560**
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	----	----	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	----	----	**0.0008**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	----	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	----	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	----	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	----	**0.0008**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	----	**0.0008**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	----	**0.0008**	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**109**
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	----	**97.5**
Toluene-D8	2037-26-5	0.1	%		----	----	----	----	**99.8**
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	----	**110**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**95.9**	**100**	**105**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.0**	**87.2**	**91.4**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**67.7**	**81.4**	**78.7**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**94.8**	**101**	**106**	----	----
Anthracene-d10	1719-06-8	0.5	%		**121**	**129**	**119**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**105**	**110**	**113**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	GW5/6.0	GW310822	LFG7/0.15 + %CLAY	LFG7/0.15 PFAS	LFG7/3.0
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		EM2217041-009	EM2217041-014	EM2217041-016	EM2217041-017	EM2217041-021
					Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	----	108
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	----	95.7
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	----	104
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	----	99.1
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	----	97.4
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	----	104
Anthracene-d10	1719-06-8	0.025	%		----	----	----	----	109
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	----	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		77.0	82.2	87.5	----	----
Toluene-D8	2037-26-5	0.2	%		70.0	79.3	91.7	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		88.1	93.0	100	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	----	95.7	----
13C8-PFOA	----	0.0002	%		----	----	----	105	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
				Result	Result	Result	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	7.7	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	9.9	19.5	----	----
Moisture Content	----	1.0	%	7.9	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	----
Arsenic	7440-38-2	5	mg/kg	<5	----	10	----	----
Barium	7440-39-3	10	mg/kg	50	----	130	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	1	----	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Chromium	7440-47-3	2	mg/kg	16	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	24	----	----	----	----
Copper	7440-50-8	5	mg/kg	31	----	16	----	----
Lead	7439-92-1	5	mg/kg	<5	----	28	----	----
Manganese	7439-96-5	5	mg/kg	334	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	----
Nickel	7440-02-0	2	mg/kg	74	----	28	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	----
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	----
Tin	7440-31-5	5	mg/kg	<5	----	<5	----	----
Vanadium	7440-62-2	5	mg/kg	12	----	----	----	----
Zinc	7440-66-6	5	mg/kg	45	----	51	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	0.1	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	220	----	----
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
				Result	Result	Result	----	----
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	----	<2	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	----	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	<1	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	<1	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	<0.02	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	<0.01	----	----
Methylene chloride	75-09-2	0.4	mg/kg	----	----	<0.4	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	<0.02	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	<0.01	----	----
Chloroform	67-66-3	0.02	mg/kg	----	----	<0.02	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	<0.01	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	<0.01	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	<0.02	----	----
Trichloroethene	79-01-6	0.02	mg/kg	----	----	<0.02	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	<0.04	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	<0.01	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	<0.02	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	<0.02	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	<0.02	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	<0.02	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
				Result	Result	Result	----	----
EP074I: Volatile Halogenated Compounds - Continued								
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	<0.02	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	<0.02	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	<0.01	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	<0.01	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg	----	----	<0.01	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg	----	----	<0.01	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg	----	----	<0.01	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	<0.03	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	<0.03	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	<0.05	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	<0.05	----	----
EP075A: Phenolic Compounds (Non-halogenated)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
					Result	Result	Result	----	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Phenol	108-95-2	1	mg/kg		----	----	<1	----	----
2-Methylphenol	95-48-7	1	mg/kg		----	----	<1	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	----
2-Nitrophenol	88-75-5	1	mg/kg		----	----	<1	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	<1	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	<5	----	----
4-Nitrophenol	100-02-7	5	mg/kg		----	----	<5	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	<5	----	----
Dinoseb	88-85-7	5	mg/kg		----	----	<5	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	<5	----	----
^ Cresols (Total)	----	1	mg/kg		----	----	<1	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	**0.6**	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	**0.8**	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	**1.1**	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	**0.8**	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	**3.3**	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	**0.9**	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	**1.2**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	**1.5**	----	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
			Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
				Result	Result	Result	----	----
EP075C: Phthalate Esters - Continued								
EP075E: Nitroaromatics and Ketones								
Nitrobenzene	98-95-3	0.5	mg/kg	----	----	<0.5	----	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	----	<1.0	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	<0.03	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	<0.03	----	----
beta-BHC	319-85-7	0.03	mg/kg	----	----	<0.03	----	----
gamma-BHC	58-89-9	0.03	mg/kg	----	----	<0.03	----	----
delta-BHC	319-86-8	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor	76-44-8	0.03	mg/kg	----	----	<0.03	----	----
Aldrin	309-00-2	0.03	mg/kg	----	----	<0.03	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	<0.03	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	<0.03	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.03	mg/kg	----	----	<0.03	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	<0.03	----	----
Endrin	72-20-8	0.03	mg/kg	----	----	<0.03	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	<0.03	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
^ Chlordane	57-74-9	0.03	mg/kg	----	----	<0.03	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	<10	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	<50	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	<10	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	<0.0002	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	<0.001	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	<0.01	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**117**	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	**96.8**	----	----
Toluene-D8	2037-26-5	0.1	%		----	----	**99.6**	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	**111**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**96.4**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	LFG8/0.15	LFG8/0.15 PFAS	LFG8/1.0	----	----
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2217041-023	EM2217041-024	EM2217041-026	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.5	%		84.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		69.8	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.0	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		118	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		105	----	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	107	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	98.1	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	112	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	115	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	104	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	110	----	----
Anthracene-d10	1719-06-8	0.025	%		----	----	117	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	116	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		78.8	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		75.3	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		87.4	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	98.6	----	----	----
13C8-PFOA	----	0.0002	%		----	103	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)			Sample ID	PACM1	----	----	----	----
			Sampling date / time	31-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2217041-027	--------	--------	--------	--------
				Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--	**-**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	----	----	----	----
Sample weight (dry)	----	0.01	g	**106**	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	----	----	----	----
Organic Fibre	----	0.1	g/kg	**No**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	**C. TONG**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB310822	----	----	----	----
				Sampling date / time	31-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2217041-015	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**89.5**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**85.8**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**107**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	PACM1 - 31-Aug-2022 00:00	Beige fragment approx 80 x 60 x 10mm.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
21135-11525

| | | |

compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
21135-11525

Project Number: 21135			Laboratory: **ALS Springvale**			Turnaround Time:		1 day			2 days			3 days		5 days								
Project Location: Northcote			Address: 4 Westall Road, Springvale					Analysis Requested																
Project Manager: SH			Phone No: 8549 9600 Fax: 8549 9626																					
Contact: Laboratory@compassenviro.com.au Compassenviro@esdat.com.au			Lab Quote Number: MEBQ-266-21																					
Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	P-30/3 EPA 1828.2 Table 2 Limited Suite	EPA Screen P-16	Metal screen (Compass 19 metals, as below)	Compass Soil 6	PFAS (21)	Soluble SO_4	pH as $CaCl_2$	P-22	Asbestos									
LFG7 / 0.15 + % Clay	16	31.08.22		1	ICE	2			✓	✓				✓										
LFG7 / 0.15 PFAS	17	31.08.22		1	ICE	1					✓													
LFG7 / 0.5	18	31.08.22		1	ICE	1																		
LFG7 / 1.0	19	31.08.22		1	ICE	1																		
LFG7 / 2.0	20	31.08.22		1	ICE	1																		
LFG7 / 3.0	21	31.08.22		1	ICE	1	✓					✓	✓											
LFG7 / 4.0	22	31.08.22		1	ICE	1																		
LFG8 / 0.15	23	31.08.22		1	ICE	1			✓	✓														
LFG8 / 0.15 PFAS	24	31.08.22		1	ICE	1					✓													
LFG8 / 0.5	25	31.08.22		1	ICE	1																		
LFG8 / 1.0	26	31.08.22		1	ICE	1	✓																	
PACM1	27	31.08.22		1	ICE	1									✓									
GWS/3.0 PFAS	28	31.8.22		1		1																		

Phenols: halogenated and non-halogenated

pH as $CaCl_3$

Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other

Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: CG	Received by: Scott (ALS)	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: Compass Environmental	Company: ALS	Company:	Company:
Date/time: 01.09.22	Date/time 1/9/22, 1424.	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL RESULTS, SRA & COC**

Report **871386-S**
Project name NORTHCOTE
Project ID 21135
Received Date Mar 15, 2022

Client Sample ID			**TP201/0.3**
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Ma30008**
Date Sampled			**Mar 11, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			TP201/0.3
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Ma30008**
Date Sampled			**Mar 11, 2022**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	142
p-Terphenyl-d14 (surr.)	1	%	65
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	6.7
Barium	10	mg/kg	170
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 10
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	27
Cobalt	5	mg/kg	17
Copper	5	mg/kg	28
Lead	5	mg/kg	25
Manganese	5	mg/kg	300
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	63
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Vanadium	10	mg/kg	40
Zinc	5	mg/kg	62
% Moisture	1	%	16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 18, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Melbourne	Mar 18, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Mar 15, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Compass Environmental P/L
Address: Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

Project Name: NORTHCOTE
Project ID: 21135

Order No.:
Report #: 871386
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Mar 15, 2022 4:25 PM
Due: Mar 22, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																										
Brisbane Laboratory - NATA # 1261 Site # 20794																										
Mayfield Laboratory - NATA # 1261 Site # 25079																										
Perth Laboratory - NATA # 2377 Site # 2370																										
External Laboratory																										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																					
1	TP201/0.3	Mar 11, 2022		Soil	M22-Ma30008	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	120			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	86			70-130	Pass	
Toluene	%	87			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	79			70-130	Pass	
Xylenes - Total*	%	79			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	87			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	88			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	79			70-130	Pass	
Chrysene	%	78			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	75			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	92			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	102			80-120	Pass	
Arsenic	%	100			80-120	Pass	
Barium	%	104			80-120	Pass	
Beryllium	%	109			80-120	Pass	
Boron	%	108			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	102			80-120	Pass	
Cobalt	%	104			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	111			80-120	Pass	
Manganese	%	101			80-120	Pass	
Mercury	%	104			80-120	Pass	
Molybdenum	%	101			80-120	Pass	
Nickel	%	99			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	102			80-120	Pass	
Silver			%	104			80-120	Pass	
Tin			%	102			80-120	Pass	
Vanadium			%	100			80-120	Pass	
Zinc			%	102			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-Ma24855	NCP	%	93			70-130	Pass	
TRH C10-C14	M22-Ma23540	NCP	%	129			70-130	Pass	
Naphthalene	M22-Ma24855	NCP	%	112			70-130	Pass	
TRH C6-C10	M22-Ma24855	NCP	%	89			70-130	Pass	
TRH >C10-C16	M22-Ma23540	NCP	%	124			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-Ma24855	NCP	%	94			70-130	Pass	
Toluene	M22-Ma24855	NCP	%	93			70-130	Pass	
Ethylbenzene	M22-Ma24855	NCP	%	88			70-130	Pass	
m&p-Xylenes	M22-Ma24855	NCP	%	83			70-130	Pass	
o-Xylene	M22-Ma24855	NCP	%	84			70-130	Pass	
Xylenes - Total*	M22-Ma24855	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Ma23540	NCP	%	79			70-130	Pass	
Acenaphthylene	M22-Ma23540	NCP	%	79			70-130	Pass	
Anthracene	M22-Ma23540	NCP	%	71			70-130	Pass	
Benz(a)anthracene	M22-Ma23540	NCP	%	87			70-130	Pass	
Benzo(a)pyrene	M22-Ma23540	NCP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Ma23540	NCP	%	76			70-130	Pass	
Benzo(g.h.i)perylene	M22-Ma23540	NCP	%	71			70-130	Pass	
Benzo(k)fluoranthene	M22-Ma23540	NCP	%	103			70-130	Pass	
Chrysene	M22-Ma23540	NCP	%	73			70-130	Pass	
Dibenz(a.h)anthracene	M22-Ma23540	NCP	%	103			70-130	Pass	
Fluoranthene	M22-Ma23540	NCP	%	93			70-130	Pass	
Fluorene	M22-Ma23540	NCP	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ma23540	NCP	%	106			70-130	Pass	
Naphthalene	M22-Ma23540	NCP	%	71			70-130	Pass	
Phenanthrene	M22-Ma23540	NCP	%	96			70-130	Pass	
Pyrene	M22-Ma23540	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	M22-Ma32315	NCP	%	106			75-125	Pass	
Arsenic	M22-Ma32315	NCP	%	102			75-125	Pass	
Barium	M22-Ma38742	NCP	%	121			75-125	Pass	
Beryllium	M22-Ma32315	NCP	%	93			75-125	Pass	
Boron	M22-Ma32315	NCP	%	96			75-125	Pass	
Cadmium	M22-Ma32315	NCP	%	109			75-125	Pass	
Chromium	M22-Ma32315	NCP	%	105			75-125	Pass	
Cobalt	M22-Ma32315	NCP	%	106			75-125	Pass	
Copper	M22-Ma32315	NCP	%	107			75-125	Pass	
Lead	M22-Ma32315	NCP	%	121			75-125	Pass	
Manganese	M22-Ma38742	NCP	%	101			75-125	Pass	
Mercury	M22-Ma32315	NCP	%	114			75-125	Pass	
Molybdenum	M22-Ma32315	NCP	%	110			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	M22-Ma32315	NCP	%	105			75-125	Pass	
Selenium	M22-Ma32315	NCP	%	101			75-125	Pass	
Silver	M22-Ma32315	NCP	%	114			75-125	Pass	
Tin	M22-Ma32315	NCP	%	110			75-125	Pass	
Vanadium	M22-Ma32315	NCP	%	115			75-125	Pass	
Zinc	M22-Ma32315	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Ma31673	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M22-Ma23539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	M22-Ma31673	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M22-Ma31673	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M22-Ma23539	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Ma23539	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M22-Ma23539	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M22-Ma31673	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M22-Ma31673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M22-Ma31673	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Ma38601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	M22-Ma32315	NCP	mg/kg	6.1	6.3	3.0	30%	Pass	
Barium	M22-Ma32315	NCP	mg/kg	130	140	3.0	30%	Pass	
Beryllium	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	M22-Ma32315	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M22-Ma32315	NCP	mg/kg	37	38	1.0	30%	Pass	
Cobalt	M22-Ma32315	NCP	mg/kg	19	19	3.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Copper	M22-Ma32315	NCP	mg/kg	28	28	1.0	30%	Pass	
Lead	M22-Ma32315	NCP	mg/kg	16	17	2.0	30%	Pass	
Manganese	M22-Ma32315	NCP	mg/kg	510	520	1.0	30%	Pass	
Mercury	M22-Ma32315	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M22-Ma32315	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M22-Ma32315	NCP	mg/kg	47	48	3.0	30%	Pass	
Selenium	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M22-Ma32315	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M22-Ma32315	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	M22-Ma32315	NCP	mg/kg	36	36	<1	30%	Pass	
Zinc	M22-Ma32315	NCP	mg/kg	85	87	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Ma29932	NCP	%	11	11	4.0	30%	Pass	

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Catherine Wilson	Analytical Services Manager
Vivian Wang	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135-11166

Project Number: 21135	Eurofins
Project Location: Northcote	Address: 6 Monterey Road, Dandenong So
Project Manager: SH	Phone No: 8564 5000 Fax: 9564 7190
Contact: laboratory@compassenviro.com.au	Lab Quote Number:

Turnaround Time: ☐ 1 day ☐ 2 days ☐ 3 days ☑ 5 days

Sample ID	Laboratory No.	Date Sampled	Composites	Sample Type*	Preservative*	Number of Containers	Analysis Requested: EPA Screen Table 2	Metal screen (see below)	13+	Comments
TP201 0.3		11/03/22		1	ICE	1		✓	✓	

Cooler: Yes / No

Analysis comments: Metal screen: Sb, B, Ba, Be, As, Cd, Cr, Co, Cu, Hg, Mo, Mn, Pb, Ni, Sn, Se, Ag, V, Zn.
Phenols: halogenated and non-halogenated
Report Sulphate as SO4

* KEY: Preservative: 1 = NaOH; 2 = HNO3; 3 = H2SO4; 4 = NaOH + ZnOAC; 5 = None; 6 = Other
Sample type: 1 = Soil; 2 = Water; 3 = Product; 4 = Waste Water; 5 = Other

Relinquished by: John Perks	Received by: CANH	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Company: COMPASS	Company: Eurofins	Company:	Company:
Date/time: 15/3/22	Date/time 15/3/22-4.25pm	Date/time:	Date/time

PLEASE SIGN AND FAX/EMAIL TO COMPASS ENVIRONMENTAL UPON RECEIPT

Page 1 of 1

COCform Rev.5 11 August 2009

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Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Stephen Harvey**

Report **912560-S**
Project name Northcote
Project ID 21135
Received Date Aug 08, 2022

Client Sample ID			R16GW203/0.5	GW204/0.2
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M22-Au0018422**	**M22-Au0018423**
Date Sampled			**Aug 05, 2022**	**Aug 05, 2022**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 80	< 20
TRH C10-C14	20	mg/kg	1000	1400
TRH C15-C28	50	mg/kg	3000	4100
TRH C29-C36	50	mg/kg	220	370
TRH C10-C36 (Total)	50	mg/kg	4220	5870
Naphthalene[N02]	0.5	mg/kg	7.3	< 0.5
TRH C6-C10	20	mg/kg	< 80	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 80	< 20
TRH >C10-C16	50	mg/kg	1500	2300
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	1492.7	2300
TRH >C16-C34	100	mg/kg	2200	2900
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	3700	5200
BTEX				
Benzene	0.1	mg/kg	< 0.4	< 0.1
Toluene	0.1	mg/kg	< 0.4	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.4	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.8	< 0.2
o-Xylene	0.1	mg/kg	< 0.4	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.48	< 0.3
4-Bromofluorobenzene (surr.)	1	%	113	73
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	5.8	2.4
Acenaphthylene	0.5	mg/kg	0.7	< 0.5
Anthracene	0.5	mg/kg	3.0	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	0.6	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			[R16]GW203/0.5	GW204/0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			M22-Au0018422	M22-Au0018423
Date Sampled			Aug 05, 2022	Aug 05, 2022
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Fluoranthene	0.5	mg/kg	3.5	< 0.5
Fluorene	0.5	mg/kg	6.4	2.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	26	2.3
Phenanthrene	0.5	mg/kg	14	4.4
Pyrene	0.5	mg/kg	3.5	< 0.5
Total PAH*	0.5	mg/kg	64	12
2-Fluorobiphenyl (surr.)	1	%	59	61
p-Terphenyl-d14 (surr.)	1	%	65	67
Heavy Metals				
Antimony	10	mg/kg	< 10	< 10
Arsenic	2	mg/kg	9.8	5.6
Barium	10	mg/kg	320	230
Beryllium	2	mg/kg	2.7	< 2
Boron	10	mg/kg	< 25	< 20
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	72	30
Cobalt	5	mg/kg	15	6.8
Copper	5	mg/kg	17	27
Lead	5	mg/kg	20	17
Manganese	5	mg/kg	130	120
Mercury	0.1	mg/kg	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5
Nickel	5	mg/kg	24	9.3
Selenium	2	mg/kg	2.1	< 2
Silver	2	mg/kg	< 2	< 2
Tin	10	mg/kg	< 10	< 10
Vanadium	10	mg/kg	100	27
Zinc	5	mg/kg	17	25
% Moisture	1	%	21	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Melbourne	Aug 09, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

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Christchurch 7675
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IANZ# 1290

Company Name: Compass Environmental P/L
Address: Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

Project Name: Northcote
Project ID: 21135

Order No.:
Report #: 912560
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Aug 8, 2022 6:05 PM
Due: Aug 16, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	HOLD	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																						
1	GW203/0.5	Aug 05, 2022		Soil	M22-Au0018422	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
2	GW204/0.2	Aug 05, 2022		Soil	M22-Au0018423	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
3	LFG204/0.4	Aug 04, 2022		Soil	M22-Au0018424										X												
Test Counts						2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Total Recoverable Hydrocarbons									
TRH C6-C9			mg/kg	< 20			20	Pass	
Naphthalene			mg/kg	< 0.5			0.5	Pass	
TRH C6-C10			mg/kg	< 20			20	Pass	
Method Blank									
BTEX									
Benzene			mg/kg	< 0.1			0.1	Pass	
Toluene			mg/kg	< 0.1			0.1	Pass	
Ethylbenzene			mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes			mg/kg	< 0.2			0.2	Pass	
o-Xylene			mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*			mg/kg	< 0.3			0.3	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Au0023262	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M22-Au0017837	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Au0017837	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M22-Au0017837	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	M22-Au0017837	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Au0017837	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Au0023262	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M22-Au0023262	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M22-Au0023262	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M22-Au0023262	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M22-Au0023262	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M22-Au0023262	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M22-Au0023350	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	M22-Au0023350	NCP	mg/kg	4.9	8.8	56	30%	Fail	Q15
Barium	M22-Au0023350	NCP	mg/kg	200	170	21	30%	Pass	
Beryllium	M22-Au0023350	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M22-Au0023350	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Cadmium	M22-Au0023350	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M22-Au0023350	NCP	mg/kg	56	55	1.8	30%	Pass	
Cobalt	M22-Au0023350	NCP	mg/kg	19	19	<1	30%	Pass	
Copper	M22-Au0023350	NCP	mg/kg	36	35	1.8	30%	Pass	
Lead	M22-Au0023350	NCP	mg/kg	6.8	5.9	14	30%	Pass	
Manganese	M22-Au0023350	NCP	mg/kg	540	520	2.8	30%	Pass	
Mercury	M22-Au0023350	NCP	mg/kg	0.2	0.1	54	30%	Fail	Q15
Nickel	M22-Au0023350	NCP	mg/kg	68	66	3.4	30%	Pass	
Selenium	M22-Au0023350	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M22-Au0023350	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M22-Au0023350	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	M22-Au0023350	NCP	mg/kg	44	41	6.1	30%	Pass	
Zinc	M22-Au0023350	NCP	mg/kg	110	99	11	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Au0018448	NCP	%	16	17	4.2	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised by:

Savini Suduweli	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal
Harry Bacalis	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Linda Chouman	Senior Analyst-Sample Properties
Mele Singh	Senior Analyst-Volatile



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD
Reference: 2135 - 11489

| | | |

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Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL RESULTS, SRA & COC**

Report **912963-S**
Project name NORTHCOTE
Project ID 21135
Received Date Aug 09, 2022

Client Sample ID			**B207/0.35**
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Au0021028**
Date Sampled			**Aug 08, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	76
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			B207/0.35
Sample Matrix			Soil
Eurofins Sample No.			M22-Au0021028
Date Sampled			Aug 08, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	65
p-Terphenyl-d14 (surr.)	1	%	81
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	3.9
Barium	10	mg/kg	85
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 20
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	26
Cobalt	5	mg/kg	11
Copper	5	mg/kg	26
Lead	5	mg/kg	19
Manganese	5	mg/kg	94
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	28
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Vanadium	10	mg/kg	21
Zinc	5	mg/kg	79
% Moisture	1	%	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Melbourne	Aug 09, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
VIC EPA Metals : Metals M17	Melbourne	Aug 09, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Aug 09, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

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VIC 3123

Project Name: NORTHCOTE
Project ID: 21135

Order No.:
Report #: 912963
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Aug 9, 2022 5:29 PM
Due: Aug 16, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Antimony	HOLD	Vanadium	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	B207/0.35	Aug 08, 2022		Soil	M22-Au0021028	X		X	X	X	X
2	GW203A/4.0	Aug 08, 2022		Soil	M22-Au0021029		X				
Test Counts						1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	88			70-130	Pass	
TRH C10-C14	%	114			70-130	Pass	
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	80			70-130	Pass	
Toluene	%	83			70-130	Pass	
Ethylbenzene	%	77			70-130	Pass	
m&p-Xylenes	%	80			70-130	Pass	
Xylenes - Total*	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	121			70-130	Pass	
Acenaphthylene	%	115			70-130	Pass	
Anthracene	%	104			70-130	Pass	
Benz(a)anthracene	%	97			70-130	Pass	
Benzo(a)pyrene	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	%	87			70-130	Pass	
Benzo(g.h.i)perylene	%	103			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	93			70-130	Pass	
Dibenz(a.h)anthracene	%	112			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	118			70-130	Pass	
Naphthalene	%	118			70-130	Pass	
Phenanthrene	%	102			70-130	Pass	
Pyrene	%	117			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	110			80-120	Pass	
Arsenic	%	115			80-120	Pass	
Barium	%	111			80-120	Pass	
Beryllium	%	118			80-120	Pass	
Boron	%	117			80-120	Pass	
Cadmium	%	110			80-120	Pass	
Chromium	%	112			80-120	Pass	
Cobalt	%	112			80-120	Pass	
Copper	%	119			80-120	Pass	
Lead	%	111			80-120	Pass	
Manganese	%	118			80-120	Pass	
Mercury	%	113			80-120	Pass	
Molybdenum	%	110			80-120	Pass	
Nickel	%	116			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	116			80-120	Pass	
Silver			%	108			80-120	Pass	
Tin			%	120			80-120	Pass	
Vanadium			%	111			80-120	Pass	
Zinc			%	114			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-Au0020952	NCP	%	90			70-130	Pass	
TRH C10-C14	M22-Au0026047	NCP	%	111			70-130	Pass	
Naphthalene	M22-Au0020952	NCP	%	91			70-130	Pass	
TRH C6-C10	M22-Au0020952	NCP	%	87			70-130	Pass	
TRH >C10-C16	M22-Au0026047	NCP	%	106			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-Au0020952	NCP	%	78			70-130	Pass	
Toluene	M22-Au0020952	NCP	%	85			70-130	Pass	
Ethylbenzene	M22-Au0020952	NCP	%	83			70-130	Pass	
m&p-Xylenes	M22-Au0020952	NCP	%	86			70-130	Pass	
o-Xylene	M22-Au0020952	NCP	%	88			70-130	Pass	
Xylenes - Total*	M22-Au0020952	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Au0023261	NCP	%	79			70-130	Pass	
Acenaphthylene	M22-Au0023261	NCP	%	75			70-130	Pass	
Anthracene	M22-Au0023261	NCP	%	77			70-130	Pass	
Benz(a)anthracene	M22-Au0023261	NCP	%	76			70-130	Pass	
Benzo(a)pyrene	M22-Au0023261	NCP	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Au0023261	NCP	%	72			70-130	Pass	
Benzo(g.h.i)perylene	M22-Au0023261	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	M22-Au0023261	NCP	%	80			70-130	Pass	
Chrysene	M22-Au0023261	NCP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	M22-Au0023261	NCP	%	89			70-130	Pass	
Fluoranthene	M22-Au0023261	NCP	%	96			70-130	Pass	
Fluorene	M22-Au0023261	NCP	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0023261	NCP	%	96			70-130	Pass	
Naphthalene	M22-Au0023261	NCP	%	76			70-130	Pass	
Phenanthrene	M22-Au0023261	NCP	%	78			70-130	Pass	
Pyrene	M22-Au0023261	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	M22-Au0016775	NCP	%	108			75-125	Pass	
Arsenic	M22-Au0019842	NCP	%	88			75-125	Pass	
Barium	M22-Au0016775	NCP	%	104			75-125	Pass	
Beryllium	M22-Au0016775	NCP	%	111			75-125	Pass	
Boron	M22-Au0016775	NCP	%	106			75-125	Pass	
Cadmium	M22-Au0016775	NCP	%	90			75-125	Pass	
Chromium	M22-Au0023351	NCP	%	115			75-125	Pass	
Cobalt	M22-Au0016775	NCP	%	102			75-125	Pass	
Copper	M22-Au0016775	NCP	%	103			75-125	Pass	
Lead	M22-Au0016775	NCP	%	111			75-125	Pass	
Manganese	M22-Au0023351	NCP	%	129			75-125	Fail	Q08
Mercury	M22-Au0024057	NCP	%	99			75-125	Pass	
Molybdenum	M22-Au0016775	NCP	%	114			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	M22-Au0016775	NCP	%	93			75-125	Pass	
Selenium	M22-Au0016775	NCP	%	100			75-125	Pass	
Silver	M22-Au0016775	NCP	%	89			75-125	Pass	
Tin	M22-Au0016775	NCP	%	108			75-125	Pass	
Vanadium	M22-Au0023351	NCP	%	108			75-125	Pass	
Zinc	M22-Au0016775	NCP	%	100			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Au0027957	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M22-Au0020777	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Au0020777	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M22-Au0020777	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	M22-Au0027957	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M22-Au0027957	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M22-Au0020777	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Au0020777	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M22-Au0020777	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Au0027957	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M22-Au0027957	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M22-Au0027957	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M22-Au0027957	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M22-Au0027957	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M22-Au0027957	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Au0016723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M22-Au0016775	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	M22-Au0016775	NCP	mg/kg	810	810	<1	30%	Pass	
Barium	M22-Au0016775	NCP	mg/kg	77	79	2.8	30%	Pass	
Beryllium	M22-Au0016775	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M22-Au0016775	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Cadmium	M22-Au0016775	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M22-Au0016775	NCP	mg/kg	51	51	<1	30%	Pass	
Cobalt	M22-Au0016775	NCP	mg/kg	24	24	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Copper	M22-Au0016775	NCP	mg/kg	49	49	<1	30%	Pass	
Lead	M22-Au0016775	NCP	mg/kg	16	16	<1	30%	Pass	
Manganese	M22-Au0016775	NCP	mg/kg	470	470	1.4	30%	Pass	
Mercury	M22-Au0024057	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M22-Au0016775	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M22-Au0016775	NCP	mg/kg	93	93	<1	30%	Pass	
Selenium	M22-Au0016775	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M22-Au0016775	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M22-Au0016775	NCP	mg/kg	15	16	1.6	30%	Pass	
Vanadium	M22-Au0016775	NCP	mg/kg	47	47	<1	30%	Pass	
Zinc	M22-Au0016775	NCP	mg/kg	46	46	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Au0021028	CP	%	13	13	1.00	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

Catherine Wilson	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal
Harry Bacalis	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Linda Chouman	Senior Analyst-Sample Properties
Scott Beddoes	Senior Analyst-Metal



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135 - 1149

| | | |

Compass Environmental P/L
Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL RESULTS, SRA & COC**

Report **919763-S**
Project name NORTHCOTE
Project ID 21135
Received Date Sep 01, 2022

Client Sample ID			**GW205/0.1**
Sample Matrix			**Soil**
Eurofins Sample No.			**M22-Se0001686**
Date Sampled			**Aug 31, 2022**
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	94
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	62
TRH C10-C36 (Total)	50	mg/kg	62
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			GW205/0.1
Sample Matrix			Soil
Eurofins Sample No.			M22-Se0001686
Date Sampled			Aug 31, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	66
p-Terphenyl-d14 (surr.)	1	%	67
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	< 2
Barium	10	mg/kg	25
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 10
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	11
Cobalt	5	mg/kg	< 5
Copper	5	mg/kg	14
Lead	5	mg/kg	11
Manganese	5	mg/kg	84
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	9.6
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Vanadium	10	mg/kg	16
Zinc	5	mg/kg	42
% Moisture	1	%	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
BTEX	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Melbourne	Sep 01, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mercury	Melbourne	Sep 01, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 01, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

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Address: Suite 6/ 5 Rose St
Hawthorn East
VIC 3123

Project Name: NORTHCOTE
Project ID: 21135

Order No.:
Report #: 919763
Phone: 03 9819 4704
Fax: 03 9819 4724

Received: Sep 1, 2022 2:00 PM
Due: Sep 8, 2022
Priority: 5 Day
Contact Name: - ALL RESULTS, SRA & COC

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																					
1	GW205/0.1	Aug 31, 2022		Soil	M22-Se0001686	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	83			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	88			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
Xylenes - Total*	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	87			70-130	Pass	
TRH C10-C14	%	126			70-130	Pass	
Naphthalene	%	79			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
TRH >C10-C16	%	130			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	94			70-130	Pass	
Anthracene	%	113			70-130	Pass	
Benz(a)anthracene	%	110			70-130	Pass	
Benzo(a)pyrene	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	%	96			70-130	Pass	
Benzo(g.h.i)perylene	%	117			70-130	Pass	
Benzo(k)fluoranthene	%	88			70-130	Pass	
Chrysene	%	106			70-130	Pass	
Dibenz(a.h)anthracene	%	87			70-130	Pass	
Fluoranthene	%	80			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	74			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	108			80-120	Pass	
Arsenic	%	107			80-120	Pass	
Barium	%	108			80-120	Pass	
Beryllium	%	110			80-120	Pass	
Boron	%	100			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	112			80-120	Pass	
Cobalt	%	113			80-120	Pass	
Copper	%	109			80-120	Pass	
Lead	%	110			80-120	Pass	
Manganese	%	108			80-120	Pass	
Mercury	%	112			80-120	Pass	
Molybdenum	%	106			80-120	Pass	
Nickel	%	107			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	106			80-120	Pass	
Silver			%	106			80-120	Pass	
Tin			%	105			80-120	Pass	
Vanadium			%	109			80-120	Pass	
Zinc			%	109			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-Se0003168	NCP	%	74			70-130	Pass	
Toluene	M22-Se0003168	NCP	%	74			70-130	Pass	
Ethylbenzene	M22-Se0003168	NCP	%	78			70-130	Pass	
m&p-Xylenes	M22-Se0003168	NCP	%	78			70-130	Pass	
o-Xylene	M22-Se0003168	NCP	%	79			70-130	Pass	
Xylenes - Total*	M22-Se0003168	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-Se0003168	NCP	%	77			70-130	Pass	
TRH C10-C14	M22-Se0004012	NCP	%	126			70-130	Pass	
Naphthalene	M22-Se0003168	NCP	%	74			70-130	Pass	
TRH C6-C10	M22-Se0003168	NCP	%	75			70-130	Pass	
TRH >C10-C16	M22-Se0004012	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Au0066443	NCP	%	79			70-130	Pass	
Acenaphthylene	M22-Au0066443	NCP	%	72			70-130	Pass	
Benz(a)anthracene	M22-Au0066443	NCP	%	79			70-130	Pass	
Benzo(a)pyrene	M22-Au0066443	NCP	%	71			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Au0066443	NCP	%	91			70-130	Pass	
Benzo(g.h.i)perylene	M22-Au0066443	NCP	%	111			70-130	Pass	
Benzo(k)fluoranthene	M22-Au0066443	NCP	%	96			70-130	Pass	
Chrysene	M22-Au0066443	NCP	%	81			70-130	Pass	
Dibenz(a.h)anthracene	M22-Au0066443	NCP	%	84			70-130	Pass	
Fluorene	M22-Au0066443	NCP	%	73			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0066443	NCP	%	96			70-130	Pass	
Naphthalene	M22-Au0066443	NCP	%	73			70-130	Pass	
Pyrene	M22-Au0066443	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	M22-Se0002468	NCP	%	99			75-125	Pass	
Arsenic	M22-Se0002468	NCP	%	97			75-125	Pass	
Barium	M22-Se0002468	NCP	%	98			75-125	Pass	
Beryllium	M22-Se0002468	NCP	%	102			75-125	Pass	
Boron	M22-Se0002468	NCP	%	110			75-125	Pass	
Cadmium	M22-Se0002468	NCP	%	81			75-125	Pass	
Chromium	M22-Se0002468	NCP	%	105			75-125	Pass	
Cobalt	M22-Se0002468	NCP	%	106			75-125	Pass	
Copper	M22-Se0002468	NCP	%	101			75-125	Pass	
Lead	M22-Se0002468	NCP	%	103			75-125	Pass	
Manganese	M22-Se0002468	NCP	%	102			75-125	Pass	
Mercury	M22-Se0002468	NCP	%	111			75-125	Pass	
Molybdenum	M22-Se0002468	NCP	%	100			75-125	Pass	
Nickel	M22-Se0002468	NCP	%	100			75-125	Pass	
Selenium	M22-Se0002468	NCP	%	97			75-125	Pass	
Silver	M22-Se0002468	NCP	%	82			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Tin	M22-Se0002468	NCP	%	100			75-125	Pass	
Vanadium	M22-Se0002468	NCP	%	102			75-125	Pass	
Zinc	M22-Se0002468	NCP	%	104			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-Se0003296	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M22-Se0003296	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M22-Se0003296	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M22-Se0003296	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M22-Se0003296	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M22-Se0003296	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Se0003296	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M22-Se0001713	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Se0001713	NCP	mg/kg	87	65	29	30%	Pass	
TRH C29-C36	M22-Se0001713	NCP	mg/kg	190	130	38	30%	Fail	Q15
Naphthalene	M22-Se0003296	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M22-Se0003296	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M22-Se0001713	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Se0001713	NCP	mg/kg	210	150	36	30%	Fail	Q15
TRH >C34-C40	M22-Se0001713	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M22-Au0069843	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M22-Se0001994	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	M22-Se0001994	NCP	mg/kg	6.5	6.3	2.8	30%	Pass	
Barium	M22-Se0001994	NCP	mg/kg	74	74	<1	30%	Pass	
Beryllium	M22-Se0001994	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M22-Se0001994	NCP	mg/kg	< 15	< 15	<1	30%	Pass	
Cadmium	M22-Se0001994	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M22-Se0001994	NCP	mg/kg	22	22	<1	30%	Pass	
Cobalt	M22-Se0001994	NCP	mg/kg	10	10	<1	30%	Pass	
Copper	M22-Se0001994	NCP	mg/kg	25	25	<1	30%	Pass	
Lead	M22-Se0001994	NCP	mg/kg	29	29	<1	30%	Pass	
Manganese	M22-Se0001994	NCP	mg/kg	280	280	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	M22-Se0001994	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M22-Se0001994	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M22-Se0001994	NCP	mg/kg	31	31	<1	30%	Pass	
Selenium	M22-Se0001994	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M22-Se0001994	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M22-Se0001994	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	M22-Se0001994	NCP	mg/kg	22	21	<1	30%	Pass	
Zinc	M22-Se0001994	NCP	mg/kg	83	83	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Se0001610	NCP	%	29	26	11	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Linda Chouman	Senior Analyst-Sample Properties
Joseph Edouard	Senior Analyst-Organic
Edward Lee	Senior Analyst-Organic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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compassenvironmental

Compass Environmental Pty Ltd
Suite 6, 5 Rose Street Hawthorn East VIC 3123
Tel: 03 9819 4704 Fax: 03 9819 4724

CHAIN OF CUSTODY RECORD

Reference: 21135 - 11826

| | | |

Please quote our reference in your reply
Our Ref: A5844903
Contact: Angelo Luczek

2 February 2021

Mr John Haysey
Contour Consultants
PO Box 1040
Carlton, VIC 3053

Dear Mr Haysey,

FREEDOM OF INFORMATION REQUEST

I refer to your application, dated 17 December 2020, in which you sought access to documents under the *Freedom of Information Act* 1982 (FOI Act). I also acknowledge receiving $100.00 being for the fees and charges pertaining to your request on 1 February 2021.

Specifically, you advised that you are seeking access to:

- *We hereby request documents relating to the potential contamination of the site as referred to by Council in its meeting with our Office dated 16 December 2020, in order to respond to Council's request for further information letters for Planning Permit Application No: D/474/2020 (most recently dated 4 December 2020, refer to Points 1(a), 1(b) and 1(d).*

Decision

In response to your request three hundred and eighty-nine pages were discovered and processed.

Document released in full.

Thirteen pages have been released in full.

Document's access denied.

Access has been denied to sixteen pages in full under Section 35 (1) (a).

Darebin City Council
ABN 75 815 980 522

Postal Address
PO Box 91
Preston VIC 3072
T 03 8470 8888
F 03 8470 8877
darebin.vic.gov.au

National Relay Service
relayservice.gov.au

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ਪੰਜਾਬੀ
Soomalii
Español
اردو
Tiếng Việt

Section 35 (1) (a) – Documents containing material obtained in confidence.

(1) A document is an exempt document if its disclosure under this Act would divulge any information or matter communicated in confidence by or on behalf of a person or a government to an agency or a Minister, and –

(a) the information would be exempt matter if it were generated by an agency or a Minister.

The documents that access has been denied are Pollution Abatement Notices that were issued to Council by the Environment Protection Authority (EPA).

Document released in part.

Three hundred and sixty pages have been exempted in part under Section 33(1) and Section 33(9) (a) (b) of the FOI Act.

Section 33 (1) and Section 33 (9) (a) (b) – Documents affecting personal privacy.

Section 33 (1) states that a document is an exempt document if its disclosure under this Act would involve the unreasonable disclosure of

information relating to personal affairs of any person (including a deceased person).

Section 33 (9) (a) (b) states information relating to personal affairs of any person includes information.

(a) that identifies any person or discloses their address or location.

(b) from which any person's identity, address, or location can reasonably be determined.

As you indicated in your application form that you are not seeking access to personal affairs information as it is irrelevant, Therefore, all personal information has been redacted.

The personal affairs information consists of names, addresses, and email addresses of third parties.

City of DAREBIN
the place to live

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ABN 75 815 980 522

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Your review rights

If you are not satisfied with my decision you have the right to apply for a review of my decision by the Information Commissioner under section 49A(1)(a) of the FOI Act.

A review application must be in writing, identify the decision to be reviewed and the agency who made it.

An application must be made to the Information Commissioner within 28 days from the day you receive this letter.

The Office of the Victorian Information Commissioner's (**OVIC**) website has a review form you may download, which contains more information about the review process and what you can expect. OVIC's contact details are:

Office of the Victorian Information Commissioner

PO Box 24274

Melbourne VIC 3001
Email: enquiries@ovic.vic.gov.au
Phone: 1300 00 6842 (1300 00 OVIC)

www.ovic.vic.gov.au

If you wish to discuss any aspect of this letter, then please do not hesitate to contact me on (03) 8470-8888.

Yours sincerely,

ANGELO LUCZEK
FREEDOM OF INFORMATION OFFICER

City of DAREBIN
the place to live

Darebin City Council
ABN 75 815 980 522

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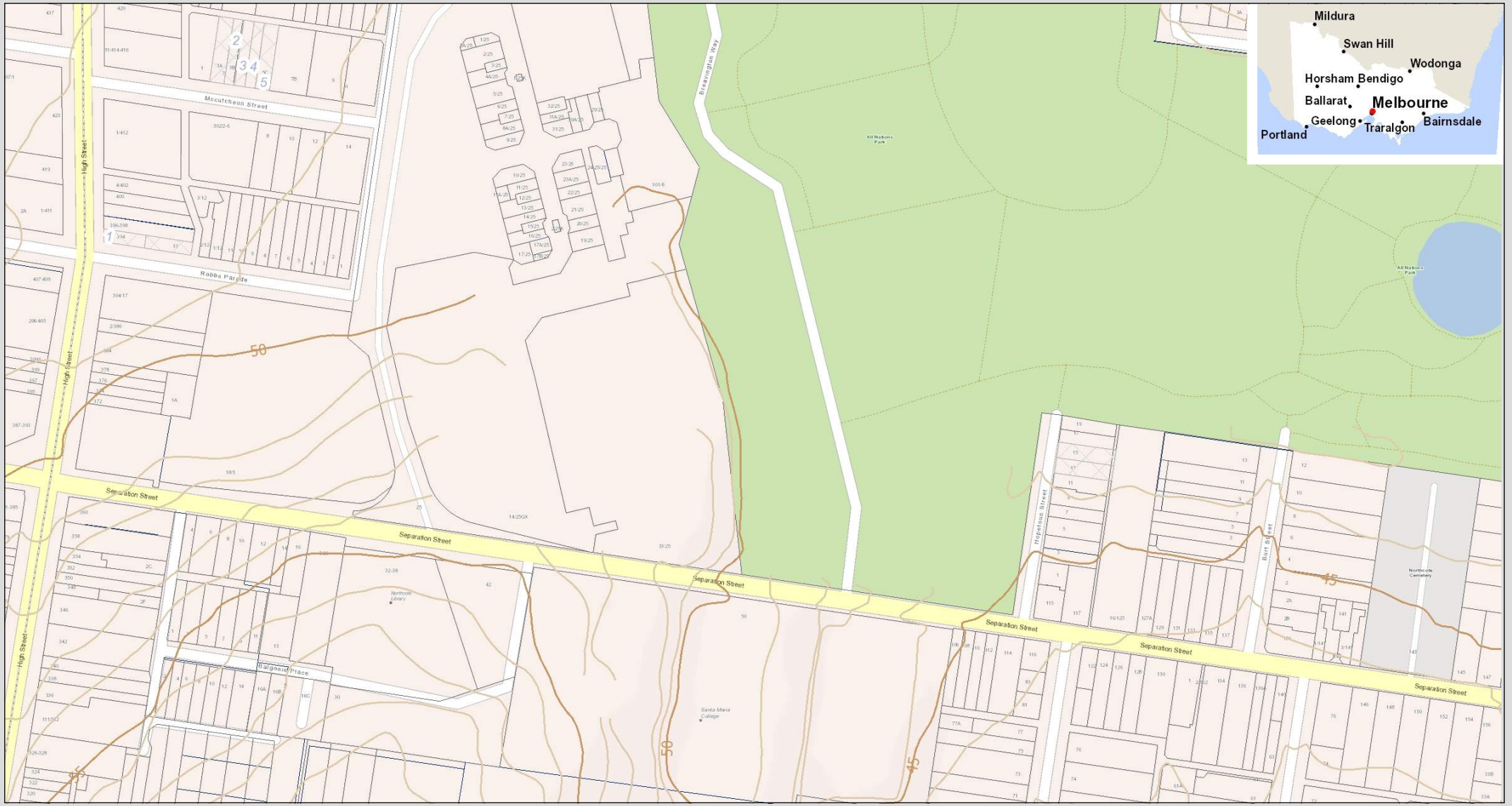
APPENDIX C – ENVIRONMENTAL SETTING

Regional Topography

25 Separation Street, Northcote



127 0 64 127 Meters

GDA_1994_VICGRID94

© The State of Victoria, Department of Energy, Environment and Climate Action 2023

Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Map Created on	**11-Sep-2023**
Scale	**1:2,500**

Regional Topography

25 Separation Street, Northcote

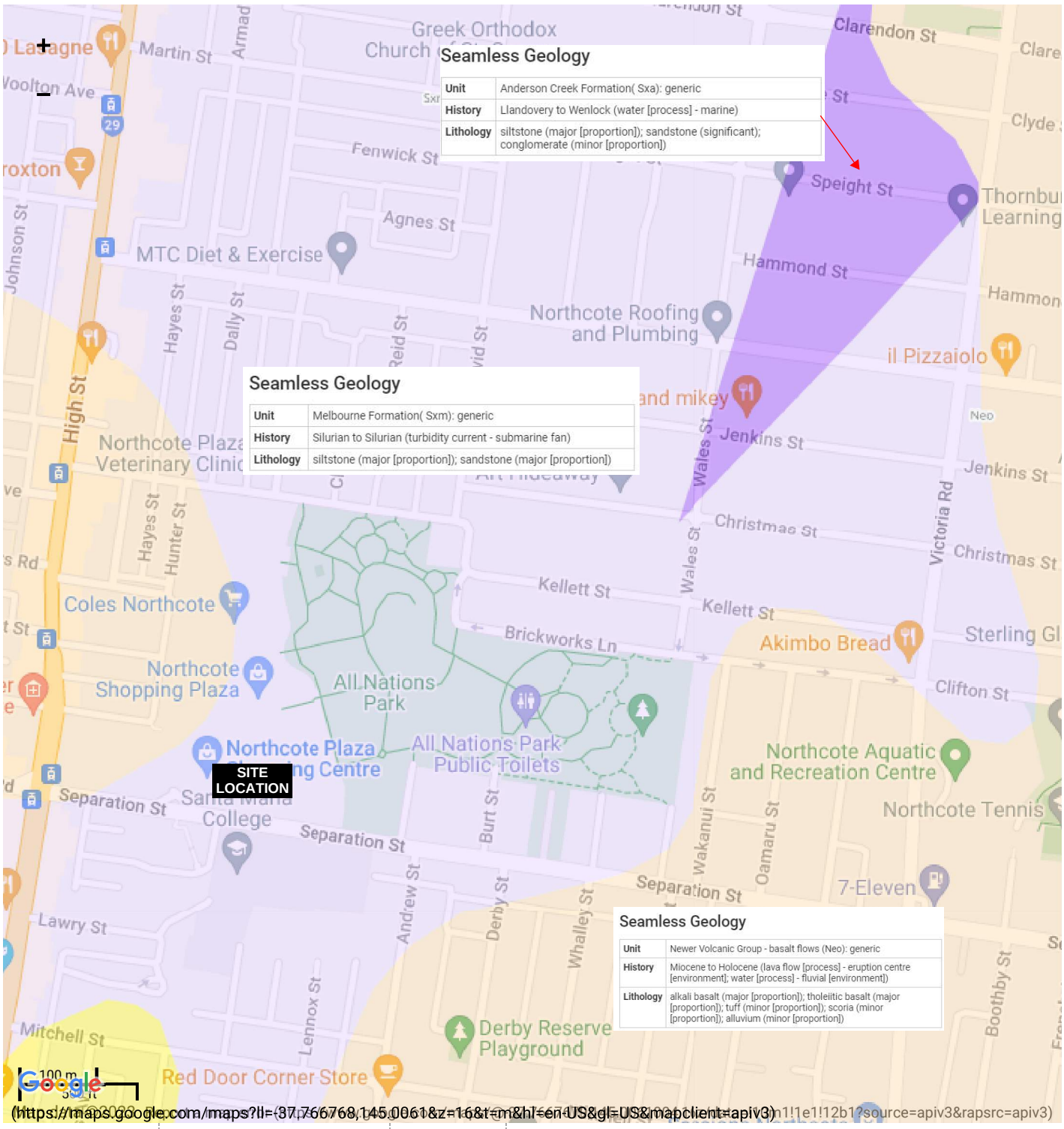
Legend

Contour Metro 1-5M

- 1m
- 5m

- Property Proposed
- Property
- Parcel Proposed
- Parcel

Regional Geology - 25 Separation Street, Northcote

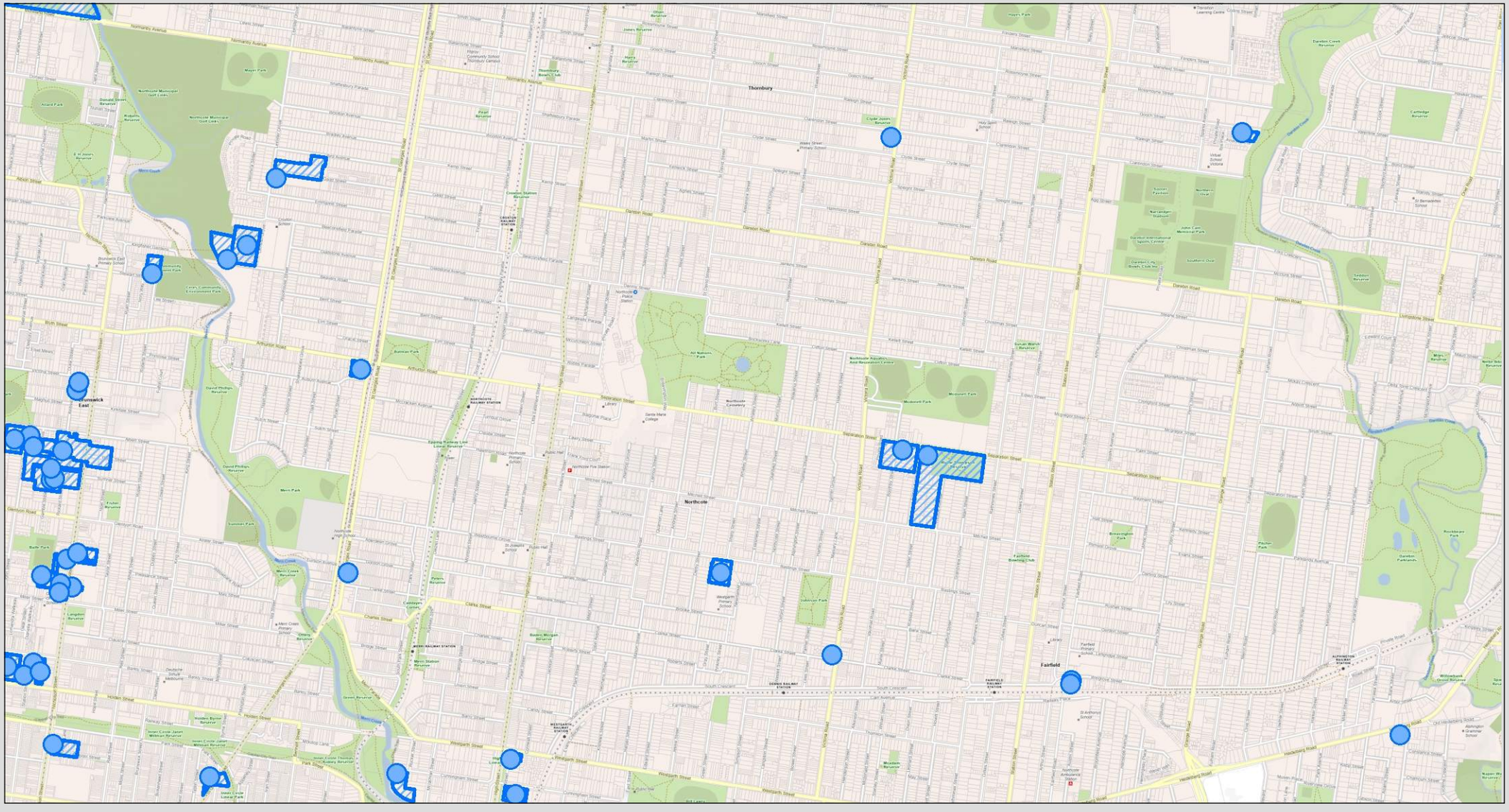


(https://maps.google.com/maps?ll=-37.76768,145.0061&z=16&t=m&hl=en-US&gl=US&mapclient=apiv3)

Scale = 1 : 6771 | EPSG:3857 | Developed by CeRDI (https://www.cerdi.edu.au)

Victoria Unearthed

Nearby CYG Sites



982 0 491 982 Meters

GDA2020_Vicgrid

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Map Created on	**16-Jul-2026 12:16 PM**
Scale	**1:19,334**

Victoria Unearthed

Nearby CYG Sites

Legend

- Groundwater Restricted Use Point
- Groundwater Restricted Use Areas

APPENDIX D– HISTORICAL AERIAL PHOTOGRAPHS AND MAPS



DRC ENVIRONMENTAL
DEVELOPMENT REMEDIATION CONSULTANTS

1405 BURKE ROAD,
KEW EAST VIC 3102
WEBSITE:WWW.DRCENVIRO.COM.AU
PHONE: 0402 455 638

LEGEND:

Site Boundary

N

0 65

Scale in Metres

TITLE:

AERIAL PHOTOGRAPH -2026

PROJECT:

25 SEPARATION STREET, NORTHCOTE

CLIENT:

TIME AND PLACE

DATE: July 2026
DESIGNED: REP
DRAWN: REP
SOURCE: NearMap

FIGURE:

A4 size

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DRC ENVIRONMENTAL
DEVELOPMENT REMEDIATION CONSULTANTS

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KEW EAST VIC 3102
WEBSITE:WWW.DRCENVIRO.COM.AU
PHONE: 0402 455 638

LEGEND:

Site Boundary

N

0 55
Scale in Metres

TITLE:

AERIAL PHOTOGRAPH -2015

PROJECT:

25 SEPARATION STREET, NORTHCOTE

CLIENT:

TIME AND PLACE

DATE:	July 2023
DESIGNED:	REP
DRAWN:	REP
SOURCE:	NearMap

FIGURE:

A4 size

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DEVELOPMENT REMEDIATION CONSULTANTS
1405 BURKE ROAD,
KEW EAST VIC 3102
WEBSITE:WWW.DRCENVIRO.COM.AU
PHONE: 0402 455 638

LEGEND:

Site Boundary

N

0 67

Scale in Metres

TITLE:

AERIAL PHOTOGRAPH -2009

PROJECT:

25 SEPARATION STREET, NORTHCOTE

CLIENT:

TIME AND PLACE

DATE: July 2026
DESIGNED: REP
DRAWN: REP
SOURCE: NearMap

FIGURE:

A4 size

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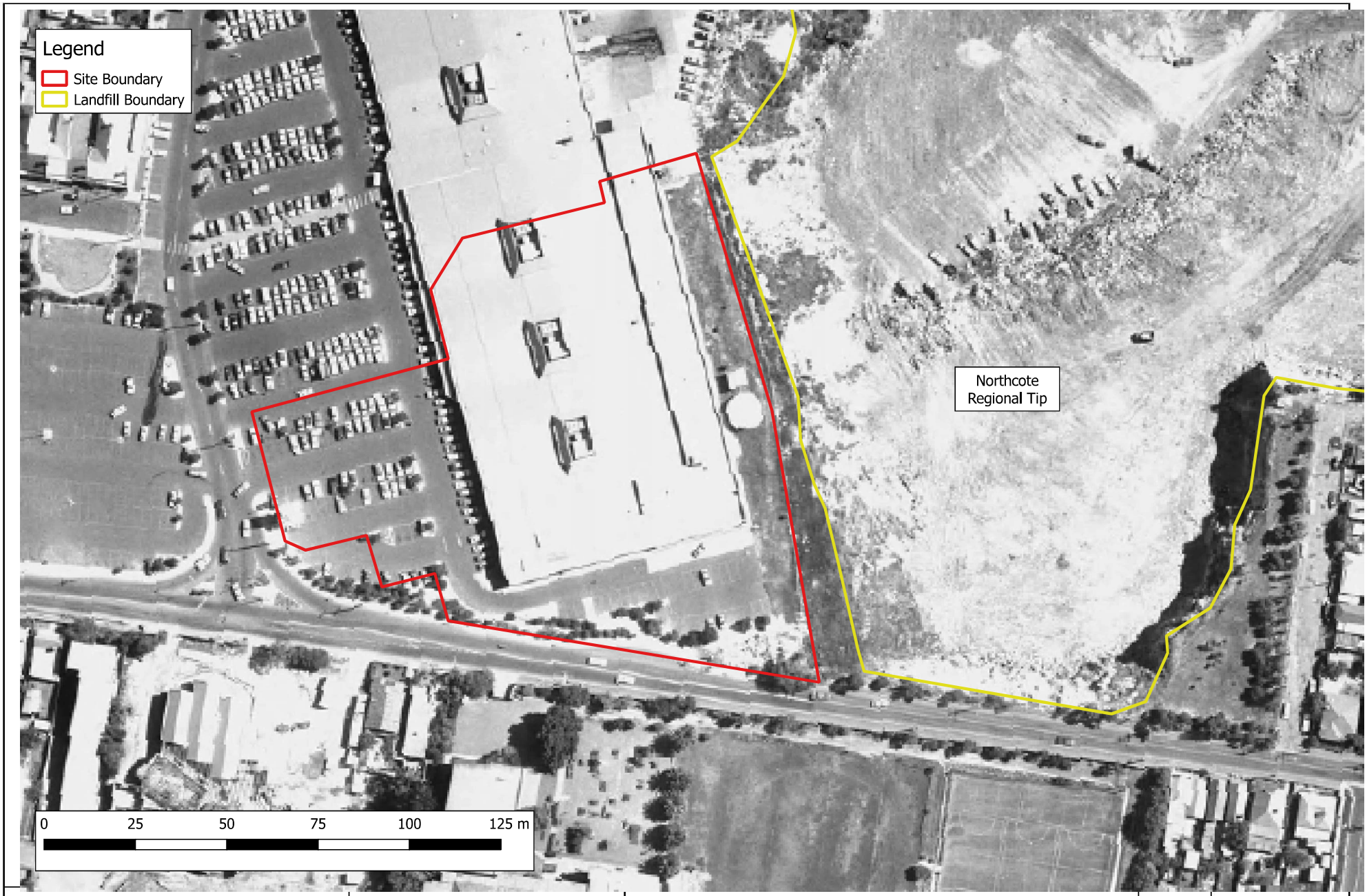


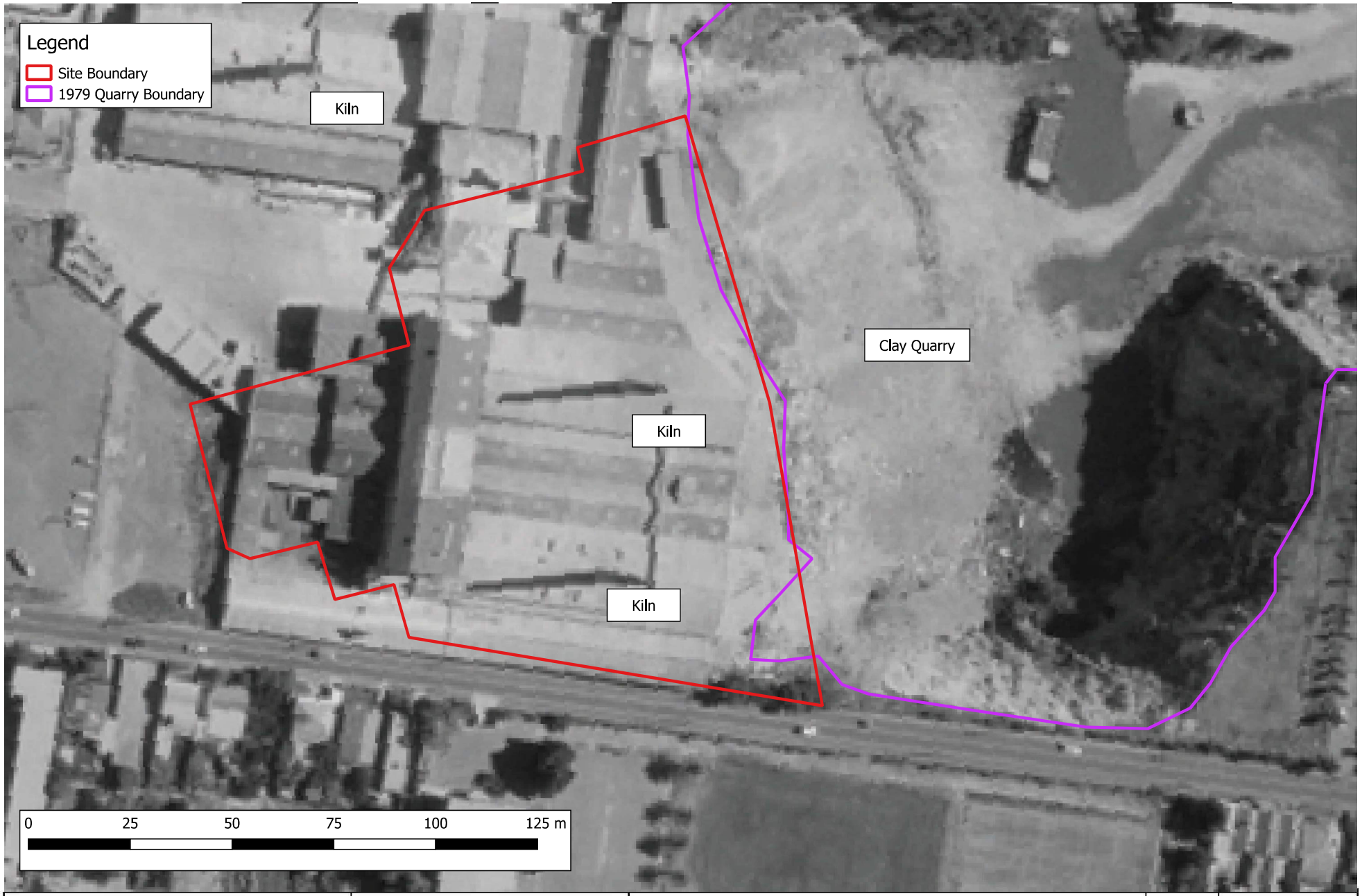
Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne
DRAWN BY: ARP
SCALE: 1:950
DATE: 16 October 2019

TITLE: **1984 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C6
REVISION: 0



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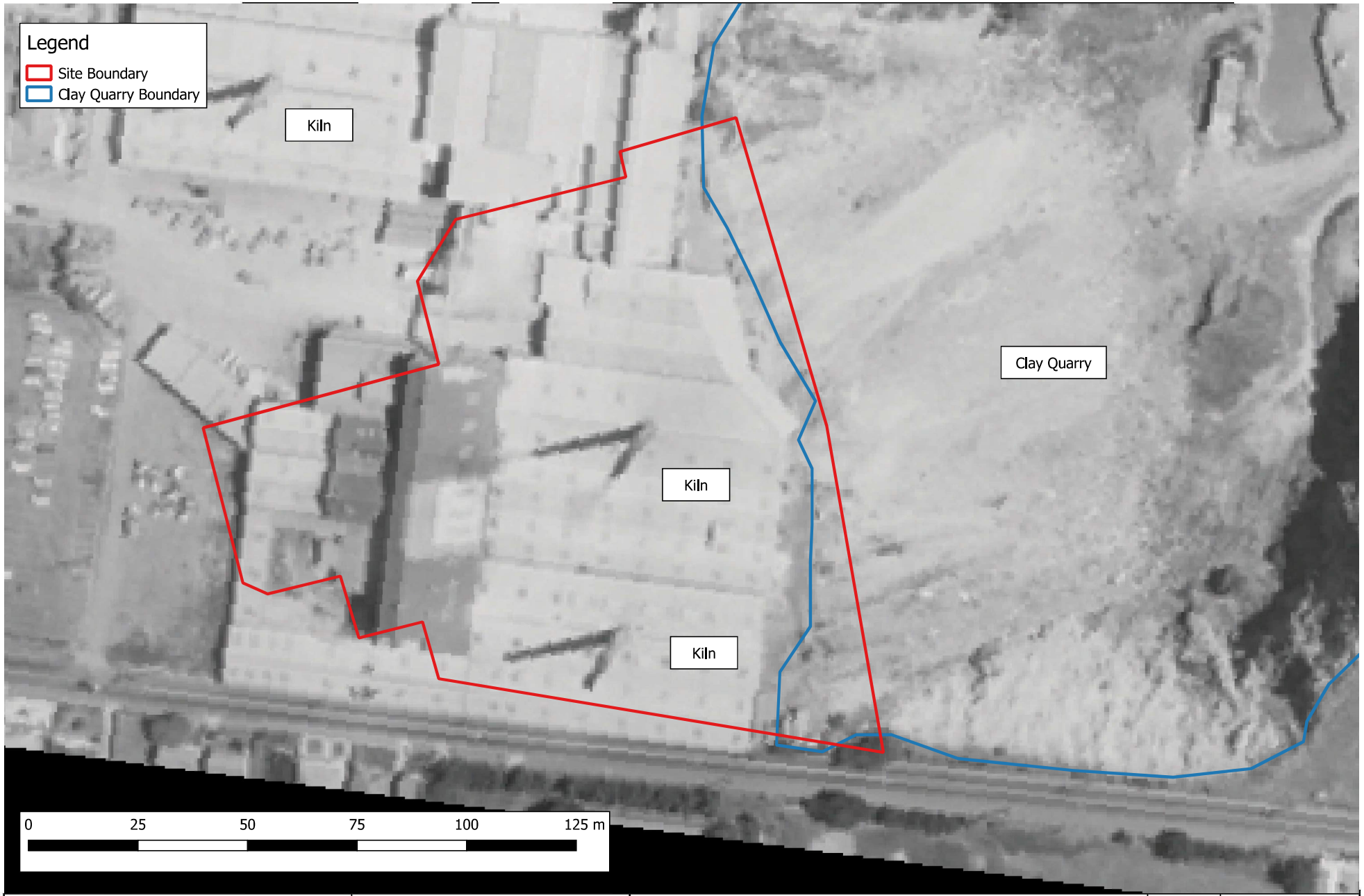
CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:858 | DATE: 16 October 2019

TITLE: **1979 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C5
REVISION: 0



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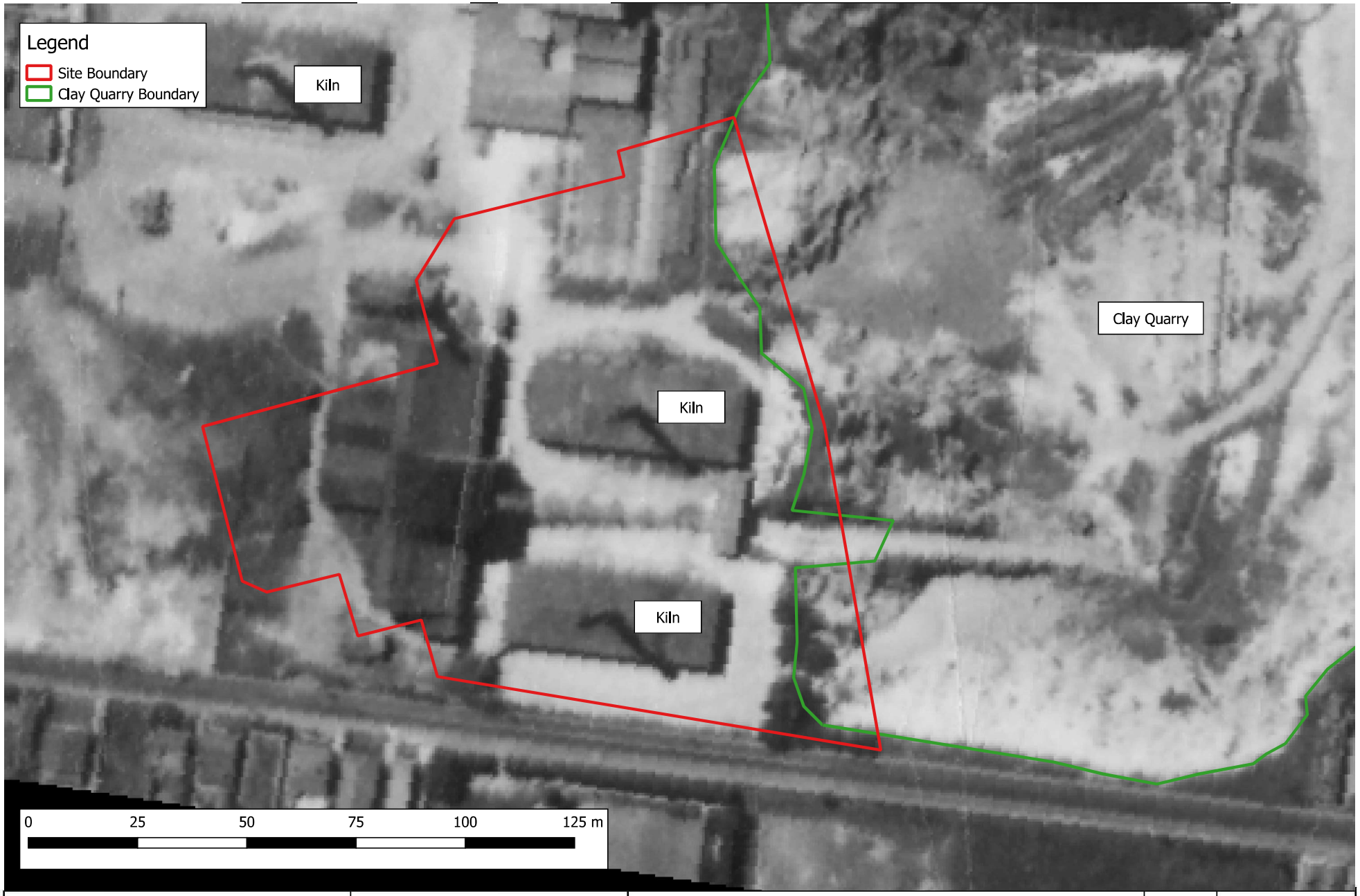
CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:798 | DATE: 16 October 2019

TITLE: **1970 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C4
REVISION: 0



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CLIENT: LAS Project Management Pty Ltd
OFFICE: Melbourne | DRAWN BY: ARP
SCALE: 1:798 | DATE: 16 October 2019

TITLE: **1965 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No: 95409.00
DRAWING No: C3
REVISION: 0

Legend

Site Boundary

Clay Quarry Boundary



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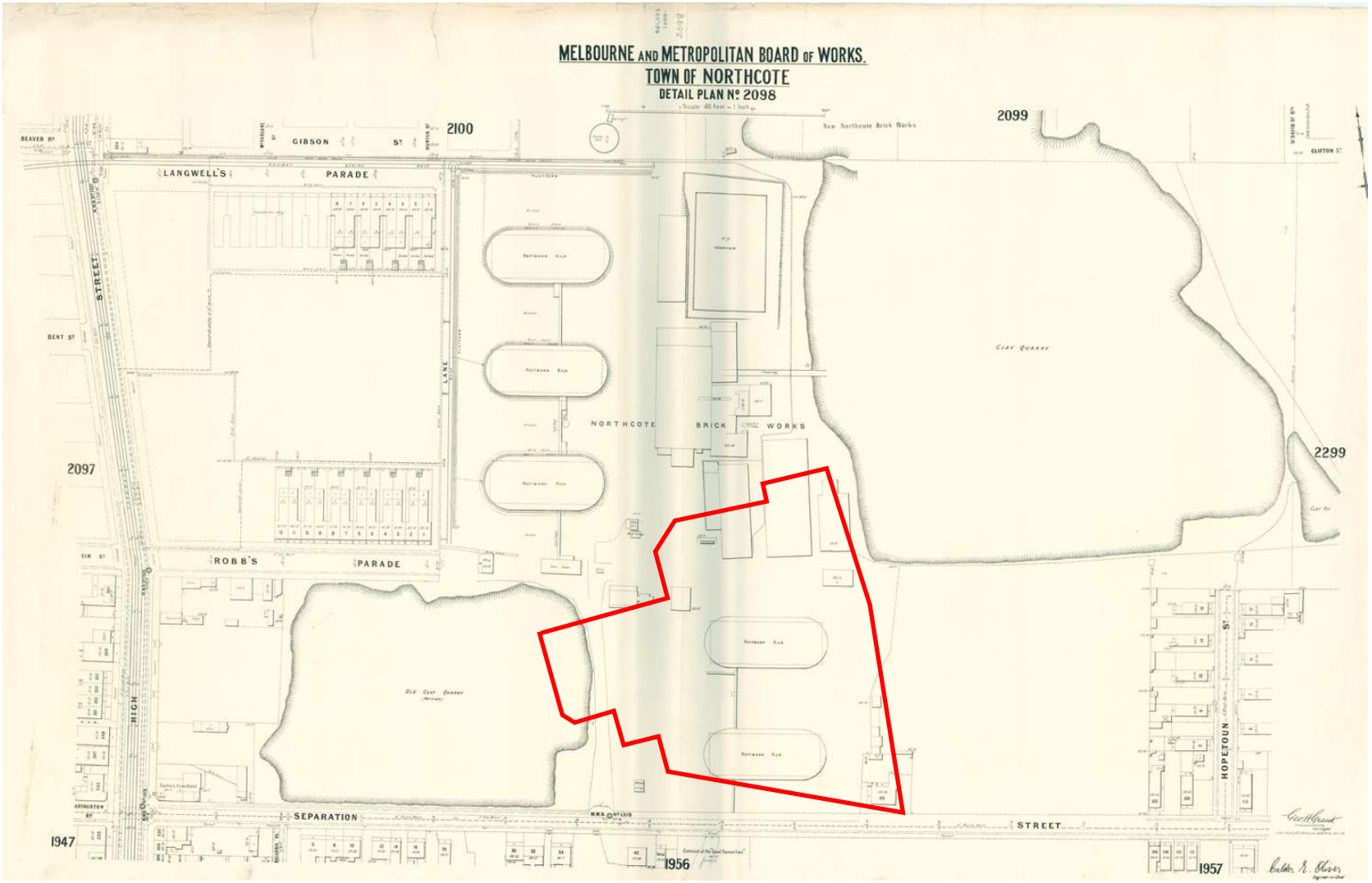
CLIENT: LAS Project Management Pty Ltd	
OFFICE: Melbourne	DRAWN BY: ARP
SCALE: 1:950	DATE: 16 October 2019

TITLE: **1945 Aerial Image**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No:	95409.00
DRAWING No:	C2
REVISION:	0

DRC has updated DP figure with clear aerial photograph



Scale provided on Figure

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KEW EAST VIC 3102
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PHONE: 0402 455 638

LEGEND:

XX
XX

TITLE:

MMBW MAP 1908

PROJECT:

25 SEPARATION STREET, NORTHCOTE

CLIENT:

TIME AND PLACE

DATE:	Nov 2023
DESIGNED:	REP
DRAWN:	REP
SOURCE:	Melway

FIGURE:

A4 size

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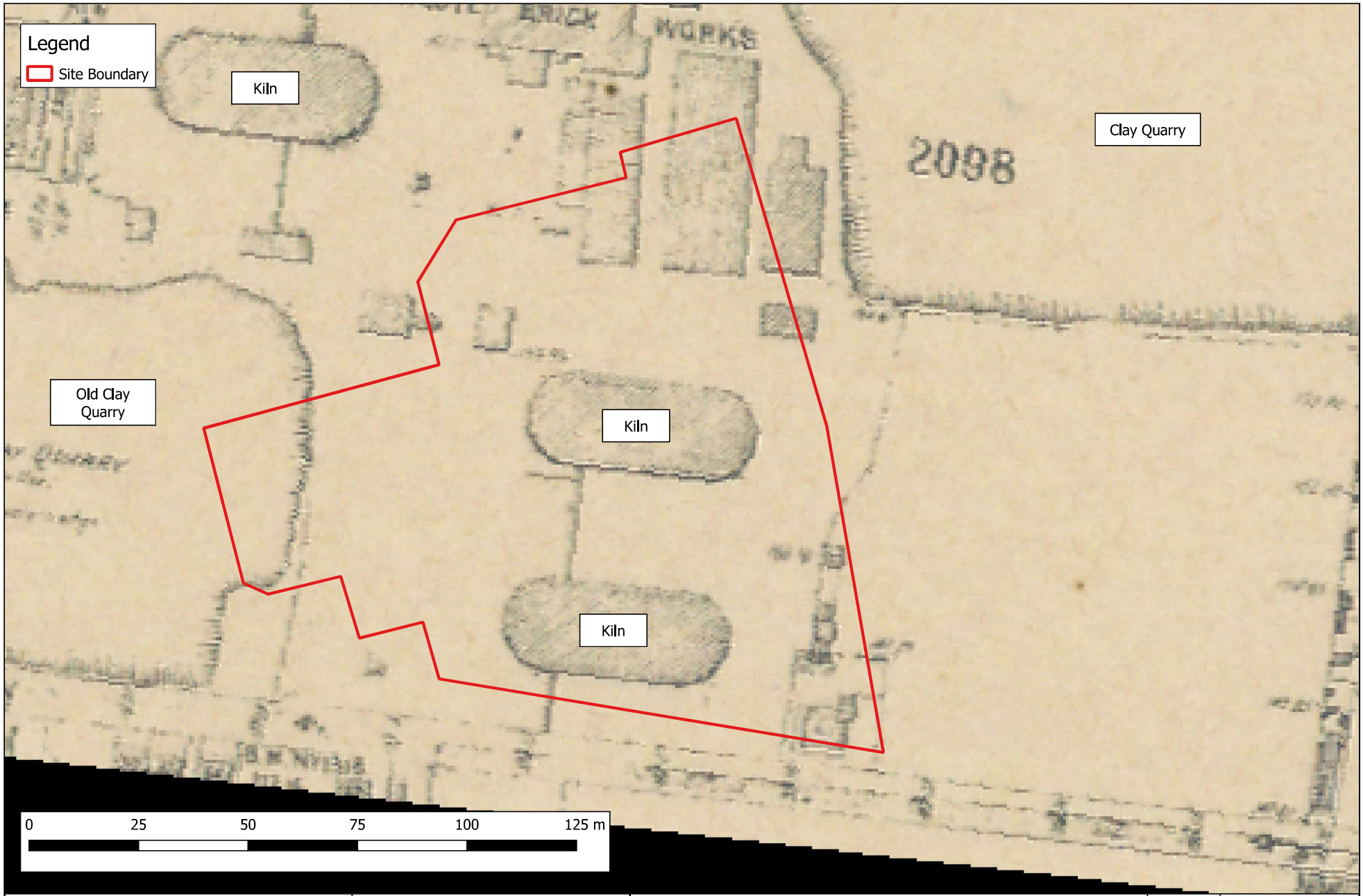

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CLIENT: LAS Project Management Pty Ltd	
OFFICE: Melbourne	DRAWN BY: ARP
SCALE: 1:798	DATE: 16 October 2019

TITLE: **1933 MMBW Map**
Preliminary Site Investigation for Contamination
Lot 50, 51 and 76, 25 Seperation Street, Northcote

N

PROJECT No:	95409.00
DRAWING No:	C1
REVISION:	0

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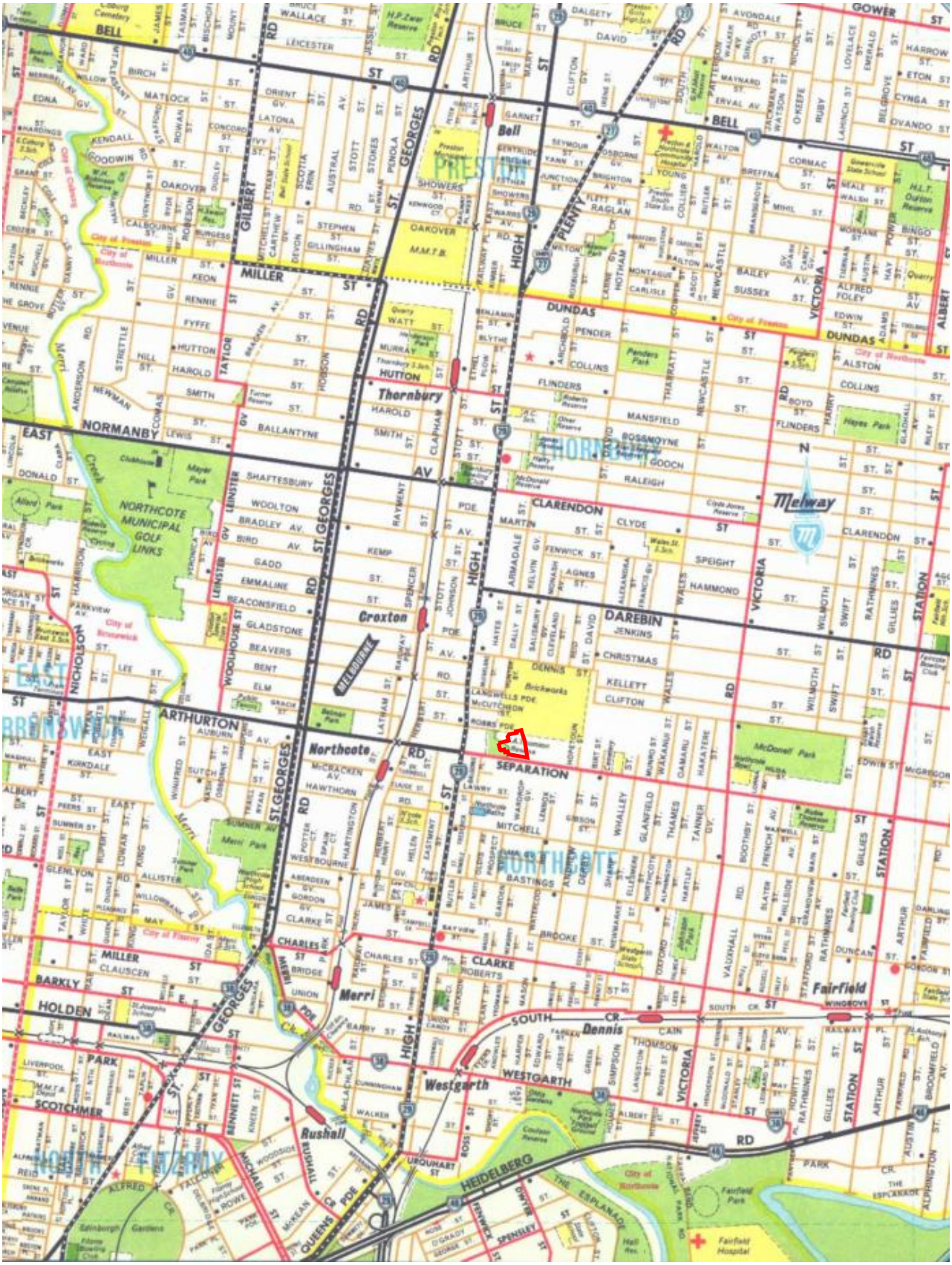

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Scale in Metres

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PROJECT:
25 SEPARATION STREET, NORTHCOTE

CLIENT:
TIME AND PLACE

TITLE:
MELWAY 1966 - EDITION 1

DATE: July 2026
DESIGNED: REP
DRAWN: REP
SOURCE: Melway
FIGURE:

A4 size

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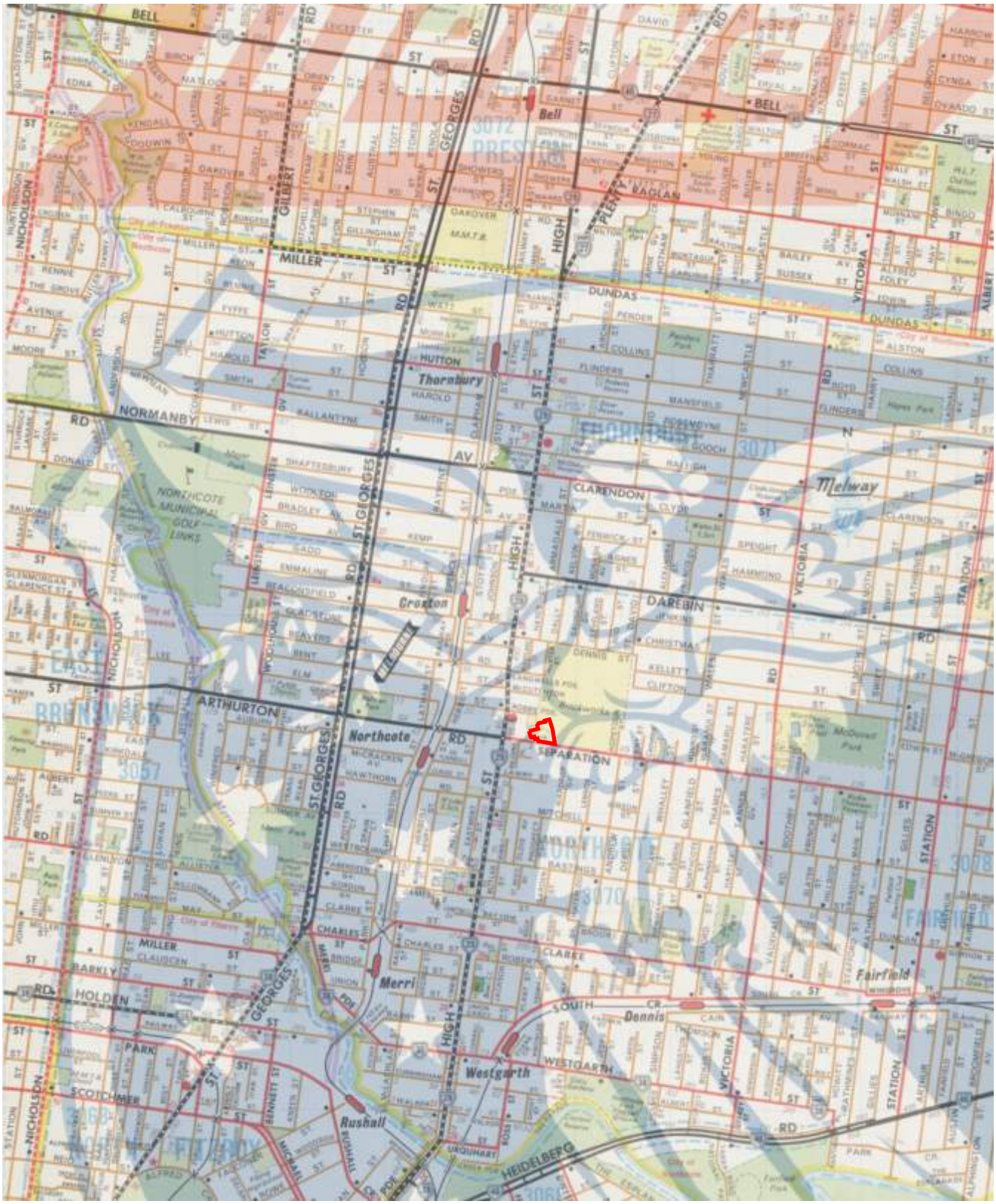

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Scale in Metres

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Phone: 0402 455 638

PROJECT:
25 SEPARATION STREET, NORTHCOTE

CLIENT:
TIME AND PLACE

TITLE:
MELWAY 1970 - EDITION 4

DATE: July 2026
DESIGNED: REP
DRAWN: REP
SOURCE: Melway
FIGURE:

A4 size

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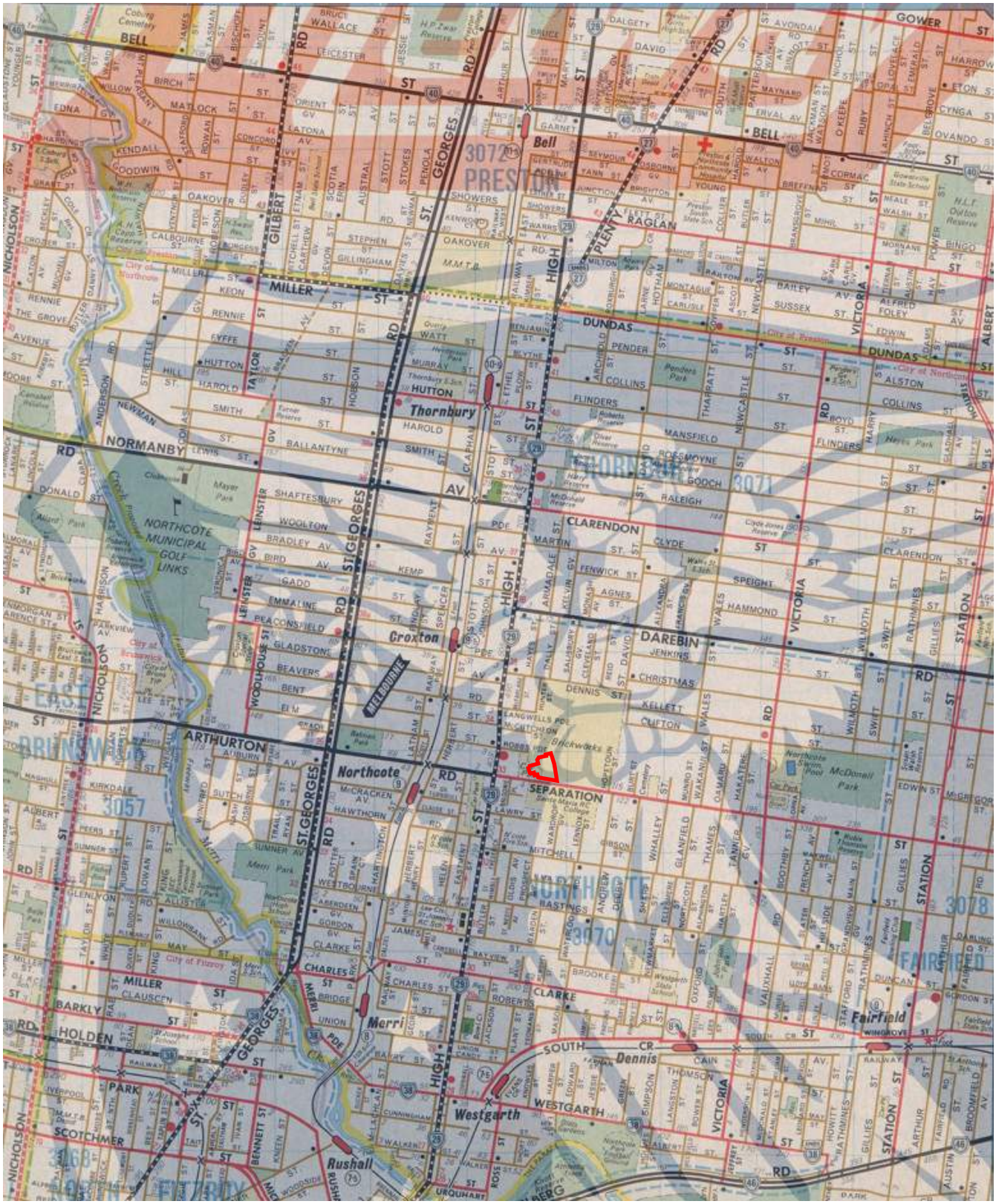

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Scale in Metres

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PROJECT:
25 SEPARATION STREET, NORTHCOTE

CLIENT:
TIME AND PLACE

TITLE:
MELWAY 1975 - EDITION 8

DATE: July 2026
DESIGNED: REP
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FIGURE:

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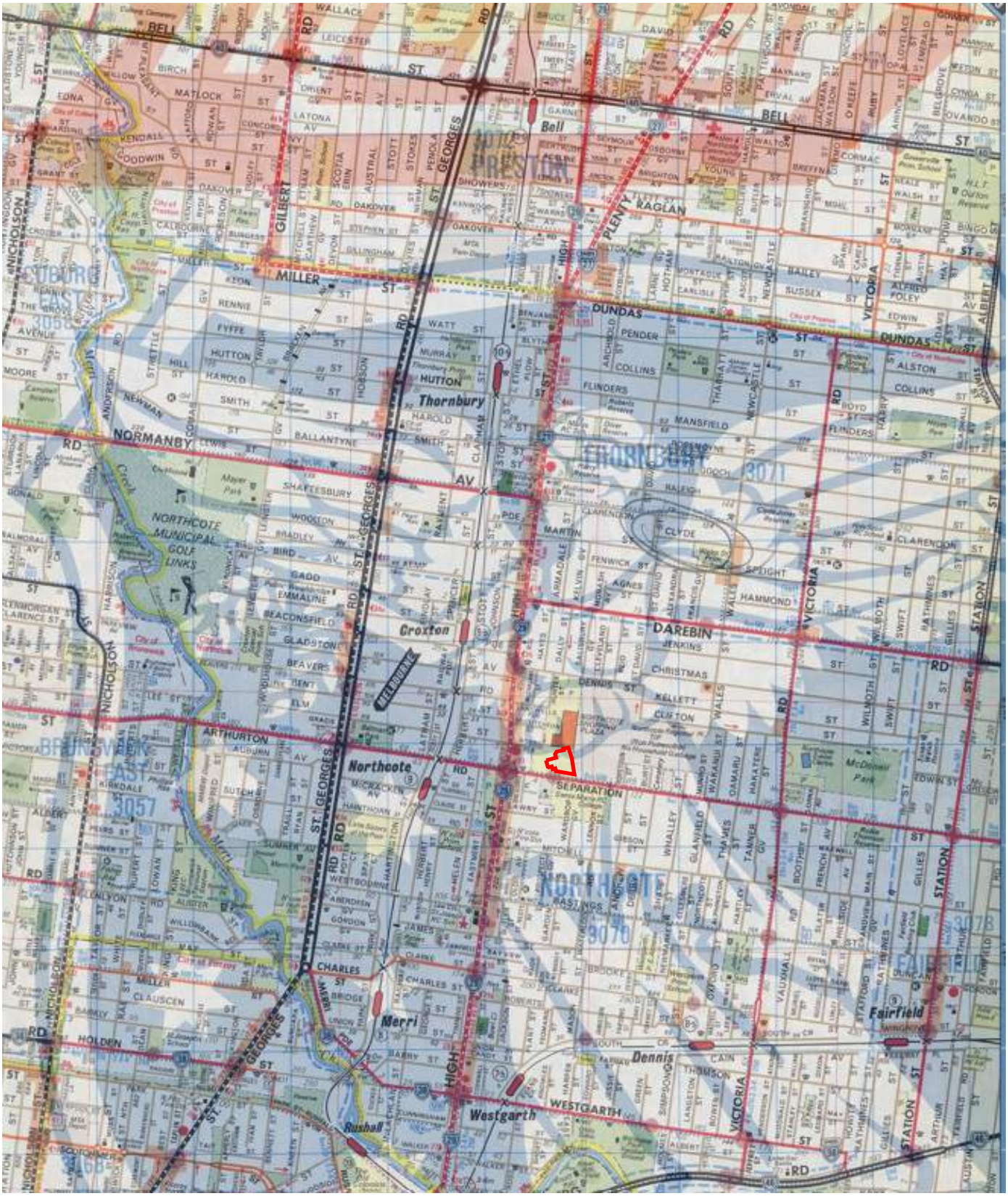

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Scale in Metres

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PROJECT:
25 SEPARATION STREET, NORTHCOTE

CLIENT:
TIME AND PLACE

TITLE:
MELWAY 1986 - EDITION 11

DATE: July 2026
DESIGNED: REP
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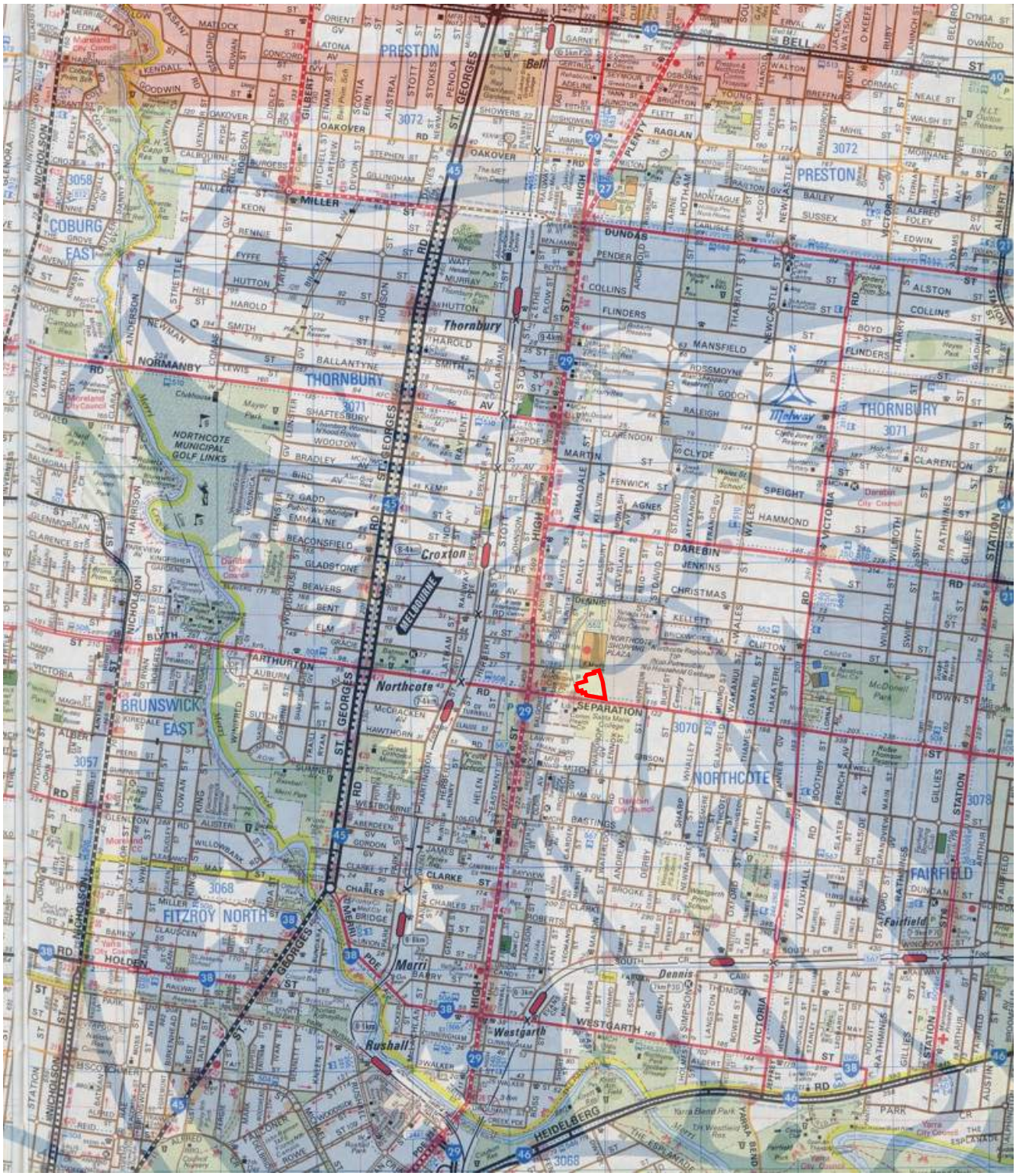

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Scale in Metres

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PROJECT:
25 SEPARATION STREET, NORTHCOTE

CLIENT:
TIME AND PLACE

TITLE:
MELWAY 1996 - EDITION 24

DATE: Nov 2023
DESIGNED: REP
DRAWN: REP
SOURCE: Melway

FIGURE:

A4 size

APPENDIX E – CATHODIC PROTECTION CERTIFICATE

CATHODIC PROTECTION SYSTEM DATABASE SEARCH

Primary Search criteria: Address contains "25 Separation Street, Northcote"
Secondary Search criteria: None

CPS Reg Number	Address	Suburb	Structure Protected	Owner	Approved current output	Status	Type of system

No record found

Disclaimer

Energy Safe Victoria provides Cathodic Protection system information in good faith, but cannot guarantee the completeness or accuracy of or validate the information provided. The Cathodic Protection (CP) database is a register of currently operating Cathodic Protection systems in Victoria and was established in 1970. The CP database is administered under the Electricity Safety Act 1998 and the Electricity Safety (Cathodic Protection) Regulations 2019. Some underground fuel tanks may not be listed in the CP database including: if the tank is not metallic (therefore not requiring CP); the tank is metallic but CP was not installed; the CP system was not registered, the CP was installed after 26 November 2019 after which galvanic anodes under 250mA were no longer required to be registered; or the CP system has been de-commissioned. If you believe underground tanks may be present and not shown on ESV's CP database you should conduct your own tests and investigations. ESV accepts no responsibility or liability for or arising from your use of, or reliance on, information obtained from the CPS database.

**** If a drawing of the CPS system is required, please contact the CPS Owner**

APPENDIX F – EPA DATA

Victoria Unearthed

25 Separation Street, Northcote



Legend

- EPA Priority Sites Register Points
- EPA Priority Sites Register Areas
- Victorian Landfill Register Point
  - Closed
  - Operating
- Victorian Landfill Register Areas
  - Closed
  - Operating
- Groundwater Restricted Use Point
- Groundwater Restricted Use Areas
- EPA Audit Points
- EPA Audit Areas
- EPA Licensed Sites Points
- EPA Licensed Areas

1: 3,072

156 0 78 156 Meters

GDA_1994_VICGRID94

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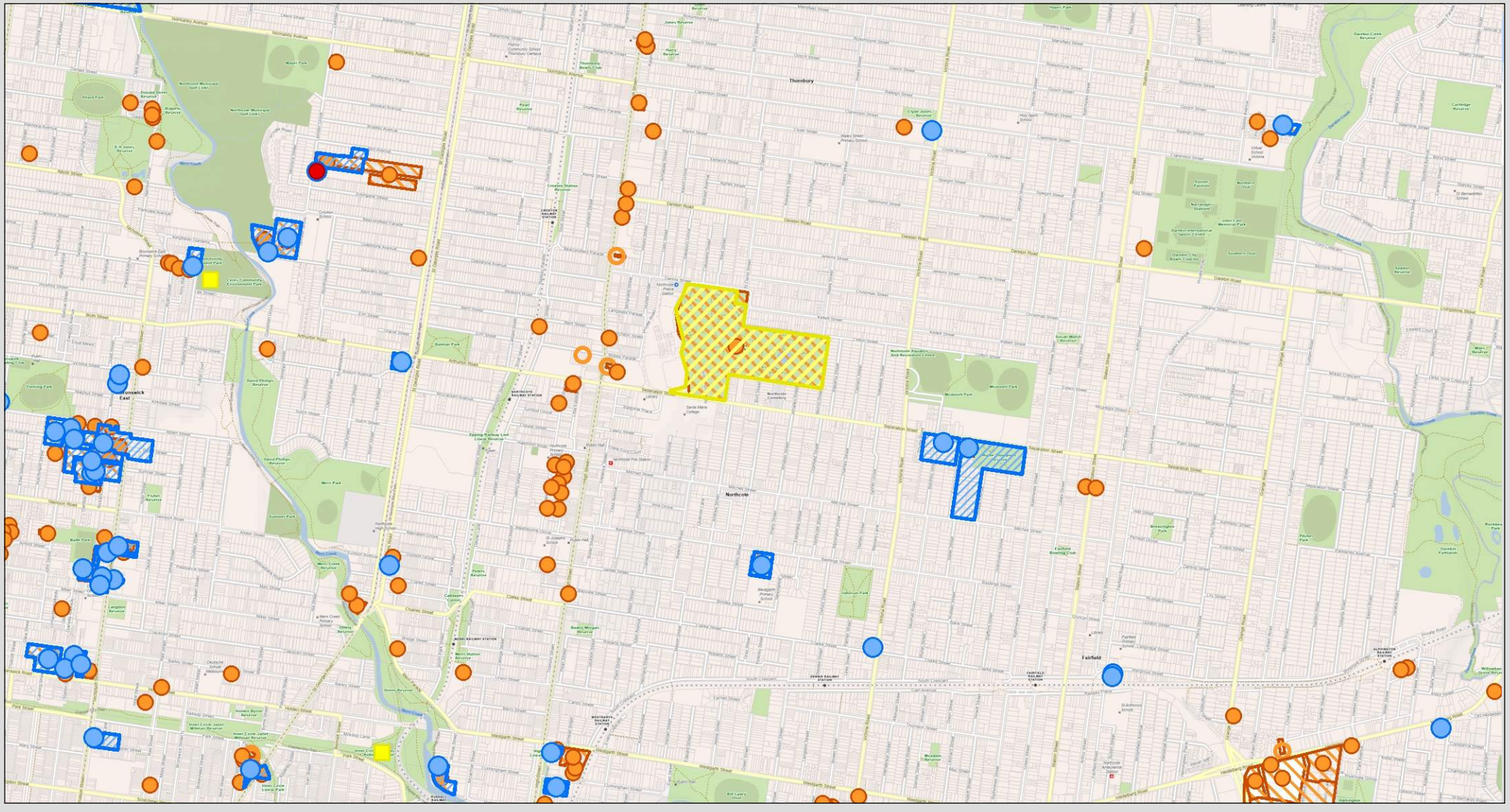
Map Created on **13-Nov-2023 9:28 AM**

Victoria Unearthed

EPA PSR and Audit Sites



982 0 491 982 Meters

GDA2020_Vicgrid

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Map Created on 16-Jul-2026 12:18 PM

Scale 1:19,334

Victoria Unearthed

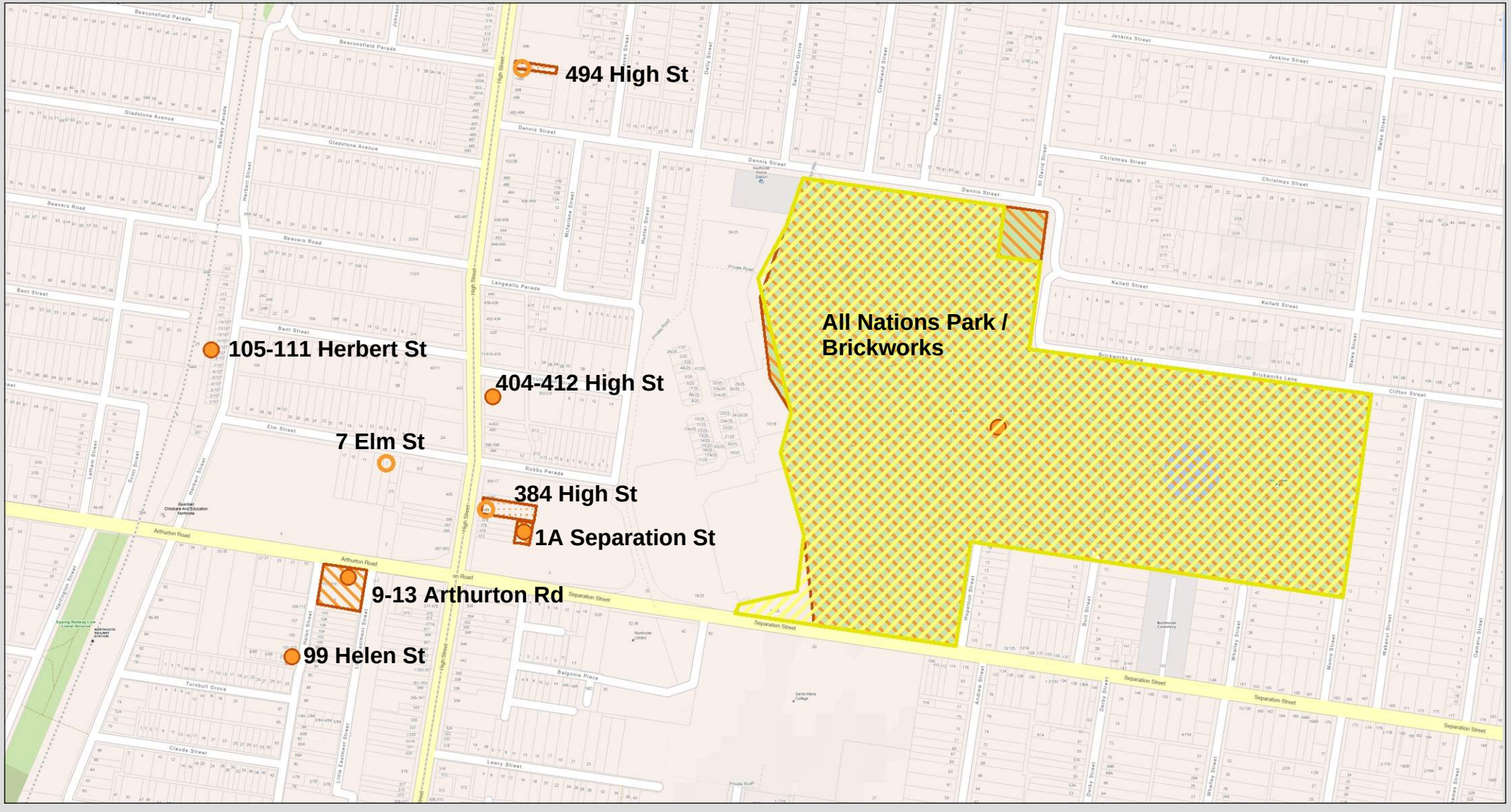
EPA PSR and Audit Sites

Legend

- EPA Priority Sites Register Points
- EPA Priority Sites Register Areas
- Victorian Landfill Register Point
  - Closed
  - Operating
- Victorian Landfill Register Areas
  - Closed
  - Operating
- Groundwater Restricted Use Point
- Groundwater Restricted Use Areas
- EPA Audit Points
- EPA Audit Areas
- EPA PRSA Point
- EPA PRSA Polgon
- EPA Licensed Sites Points
- EPA Licensed Areas

Victoria Unearthed

EPA Listed Properties



246 0 123 246 Meters

GDA2020_Vicgrid

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Scale	**1:4,833**

Victoria Unearthed

EPA Listed Properties

Legend

- EPA Priority Sites Register Points
- EPA Priority Sites Register Areas
- Victorian Landfill Register Point
  - Closed
  - Operating
- Victorian Landfill Register Areas
  - Closed
  - Operating
- Groundwater Restricted Use Point
- Groundwater Restricted Use Areas
- EPA Audit Points
- EPA Audit Areas
- EPA PRSA Point
- EPA PRSA Polgon
- EPA Licensed Sites Points
- EPA Licensed Areas



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