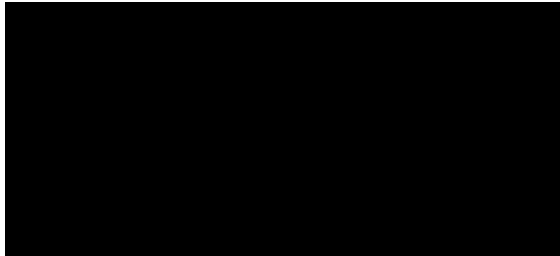


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AEA Ref: EA1304_C01a



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31 March 2026

Auditor Advice Letter

Compliance with Audit Recommendations – Phase 1 of the Development 44 – 76 Simcock Avenue, Spotswood, Victoria

Dear Simon,

Australian Environmental Auditors Pty Ltd (AEA) was engaged by Green SquareDC Pty Ltd on 29 January 2026 to provide specific written advice in relation to recommendations of the environmental audit of the property located at 44 – 76 Simcock Avenue, Spotswood, Victoria (the site). The site was previously subject to an environmental audit undertaken by myself, Charlie Barber of Australian Environmental Auditors (AEA) in April 2023 (EPA CARMs No. 68548-2, Environmental Audit ID: 0008005376). The audit resulted in the issue of an Environmental Audit Statement (EAS) that included a number of recommendations. These recommendations are in effect, conditions or requirements by the EPA for development of the site.

Recommendations 1 and 2 of the EAS pertain to groundwater restrictions and off-site groundwater monitoring which are not relevant to the development requirements. Recommendations of 3 to 9 of the EAS do apply and are detailed as in Attachment A.

Introduction and Background

The site formerly operated as a major petroleum hydrocarbon and chemical storage and distribution terminal since 1927. As a result of historical operations, soil and groundwater contamination was identified across the site and has been subject to extensive investigation and remediation over a number of years. Between 2014 and 2022, above-ground and below-ground infrastructure was removed to the extent practicable, and the site is currently vacant. Certain subsurface structures remain in situ; however, these have been assessed and determined to be suitable to remain without posing an unacceptable contamination risk.

The site has undergone investigation and remediation activities, culminating in the completion of an environmental audit in 2023. The audit concluded that the site condition does not pose an unacceptable risk to human health or the environment for commercial/industrial land use, subject to the implementation and ongoing compliance with the recommendations set out in the EAS. To manage risks associated with impacted soil remaining on-site, the auditor recommended development in accordance with the approved Site Management Plan (SMP) (included within the EAR and EAS).

Australian Environmental Auditors Pty Ltd
ABN 84 161 362 214 ACN 161 362 214

Melbourne
Wurundjeri Country
Suite 21, 1 Ricketts Rd
Mt Waverley VIC 3149
T 03 8542 7500

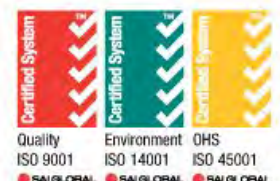
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T 08 8223 3488

Contaminated Land Auditing | Landfill Auditing | Expert Advice
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Turrbal Country
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Sydney
Gadigal Country
T 02 8644 0681
Canberra
Ngunnawal Country
T 02 8644 0681

Launceston
Palawa Country
T 03 6289 8918



Proposed Development

Green SquareDC intend to develop the site with multiple IT buildings over ten phases. Phase 1 relates to the construction of Building A, Tech Building A, part of Building B and associated parking areas in the western portion of the site, as shown in the figure below. Future phases of development will be undertaken progressively and will require more detailed investigations, including the assessment of vapour mitigation measures. These investigations are beyond the scope of this letter and will be addressed separately.

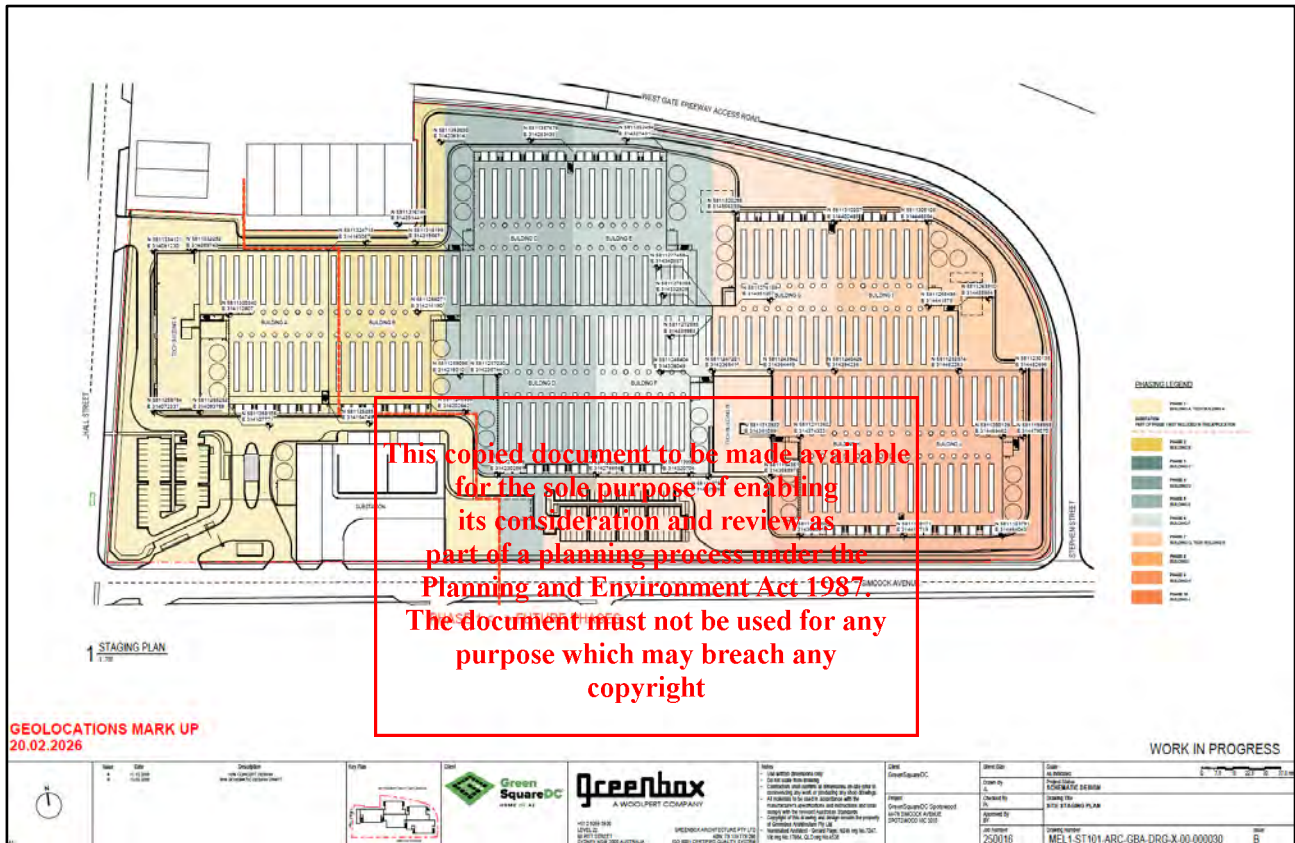


Figure 1: Proposed Development Plan
(Source: Green SquareDC)

Site Management Plan

A SMP was prepared by WSP in 2023 to provide a framework for the ongoing management of residual soil and groundwater contamination within the site boundary. The SMP is the basis and process for compliance with the audit recommendations.

The SMP divided the site into four distinct management areas, each subject to specific controls based on the nature and extent of the identified residual contamination. These four management areas are detailed below:

- Area A (the three small blue sub-areas shown in Figure 2) primarily relates to areas where soil concentrations may pose an unacceptable risk to human health through dermal contact, ingestion and/or inhalation. (applicable to Phase 1);

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- Area B (the area indicated by green lines on Figure 3) comprises the area of LNAPL at the groundwater table and shallow soil impacts associated with historical storage of light fraction hydrocarbons that present a potential vapour intrusion risk. (not applicable to Phase 1; addressed in future phases);
- Area C (the area with the yellow dots shown on Figure 4) comprises the area where soil hydrocarbon impact exceeds management limits. (applicable to Phase 1); and
- Area D (entire site, refer to Figure 5) recognises the presence of residual soil impacts across the site that require consideration with respect to controlling discharges from earthworks, implementation of appropriate occupational health and safety controls, disposal of surplus material generated during earthworks and potential risks to workers in trenches. Area D also recognises that the site has been identified as an area with groundwater unsuitable for extractive use. (applicable to all phases)

The extents of Areas A to D are shown in the following figures.

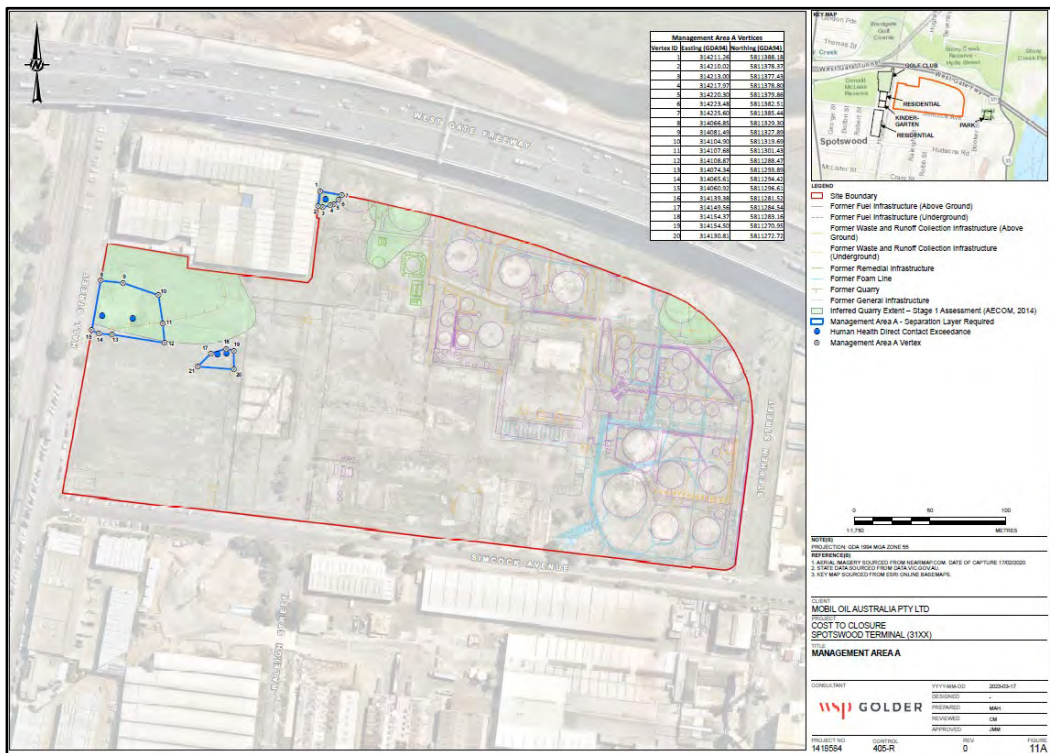


Figure 2: Management Area A
(Source: Site Management Plan, WSP 2023)

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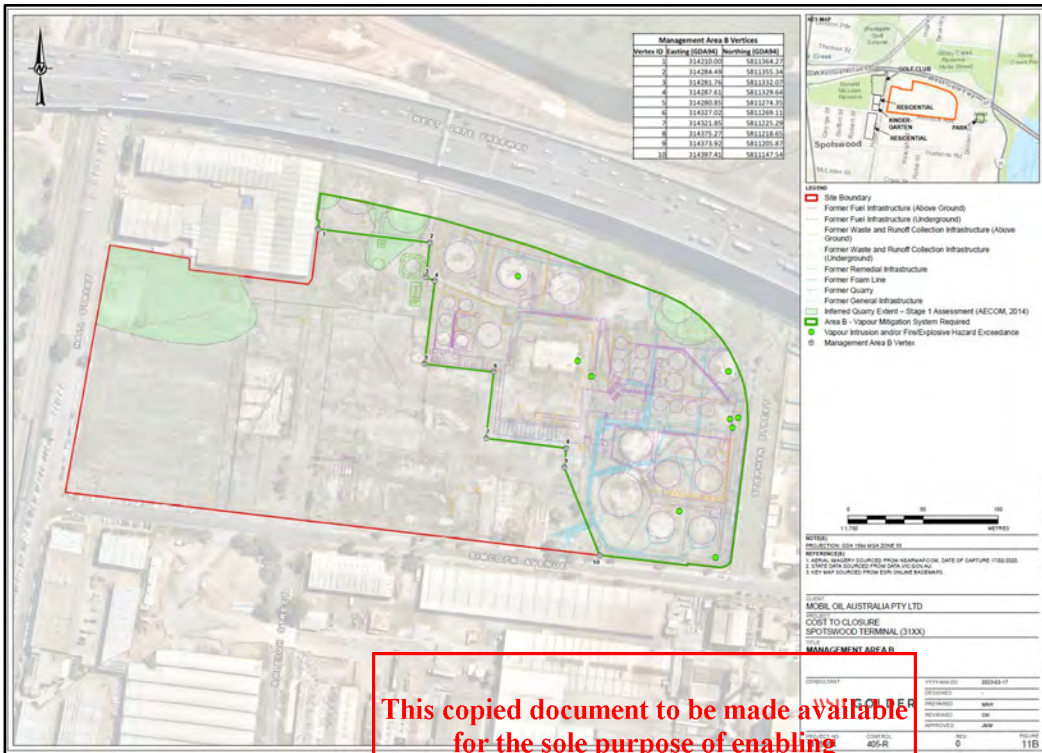


Figure 3: Management Area B
(Source: Site Management Plan, WSP 2023)

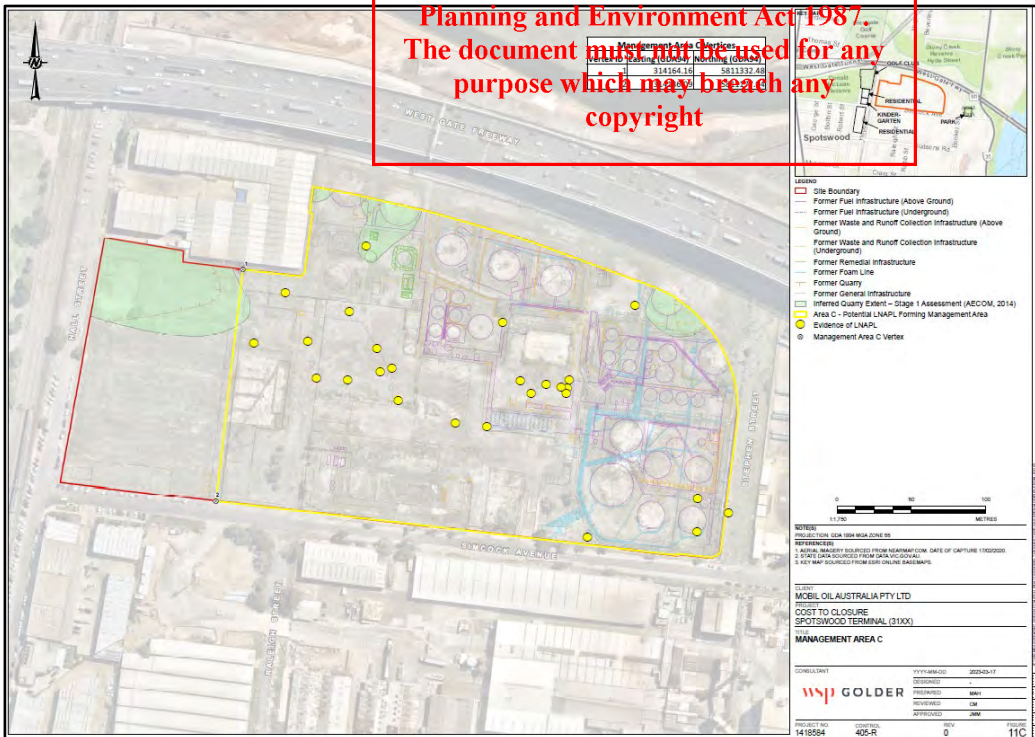


Figure 4: Management Area C
(Source: Site Management Plan, WSP 2023)

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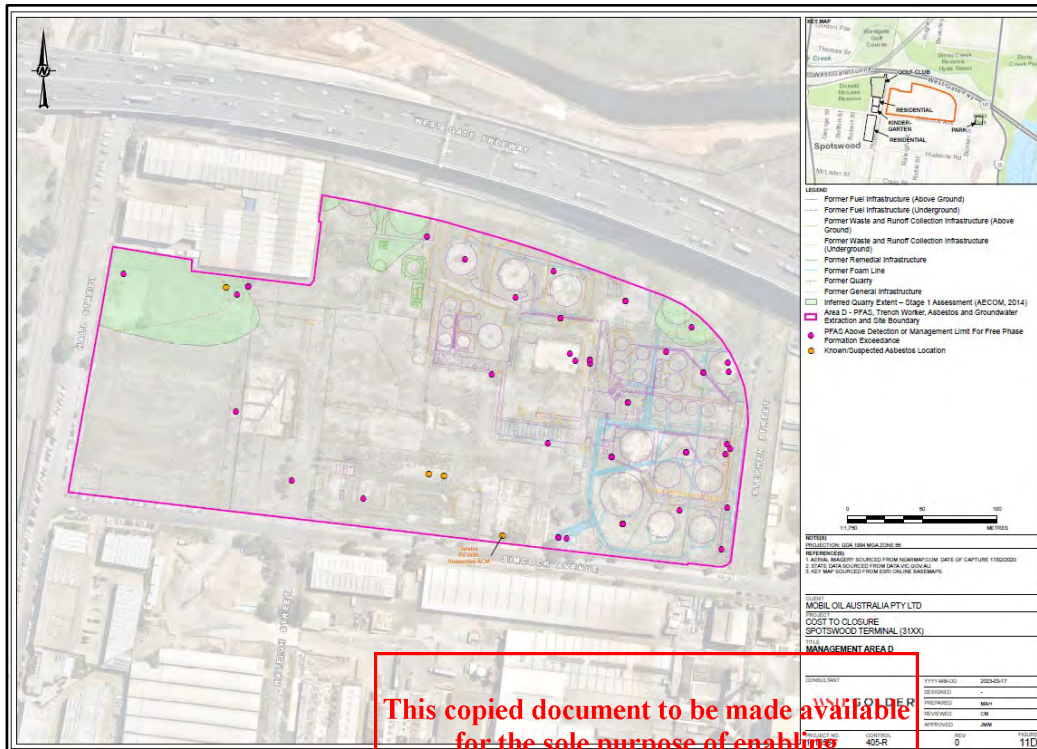


Figure 5: Management Area D
(Source: Site Management Plan, WSP 2023)

The SMP requires that development within Area A, applicable to Phase 1 of the development (Figure 2 above) must incorporate a physical barrier to mitigate potential direct exposure risks to human health. This includes:

- Design and implementation of a physical barrier suitable to the desired land use (e.g., access road, buildings, pavement, landscaping);
- Verification of the physical barrier design by an Environmental Auditor prior to implementation, with this verification advised to the EPA and the planning authority in writing;
- Appointment of an Environmental Consultant to validate the construction of the physical barrier as per the design;
- Appointment of an Environmental Consultant to update the SMP with measures to monitor and maintain physical barriers; and
- Appointment of an Environmental Auditor to verify the final construction of the physical barrier and any changes to this SMP.

The SMP further details the physical barrier requirements applicable to Area A, which may comprise:

- Concrete pavements of a minimum thickness of 100 mm;
- Asphalt pavements of minimum 100 mm thickness including a gravel base;

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- Pavers mounted on a minimum of 100 mm of gravel or on a concrete base to avoid to the potential for movement between pavers; and
- A minimum thickness of 500 mm of imported soil or garden bed meeting the chemical requirements of:
 - o Fill Material as described in Section 5.2.3.3 (and guidelines replacing it);
 - o Site adopted human health investigation levels (HILs) and ecological investigation levels (EILs) in line with the NEPM (2013); and
 - o A Marker Layer (constructed of Nonwoven Geotextile) placed directly underneath the soil physical barrier which is of suitable strength, durability, and visibility.

In practical terms, the three specific areas shown by the blue polygons in Figure 2 require the installation of a compliant physical barrier as outlined above. Green SquareDC must appoint a suitably qualified Environmental Consultant to oversee and validate the construction of the barrier in these areas. The validation report must then be provided to the Environmental Auditor to enable the preparation of a verification letter for submission to the EPA. These steps are necessary to demonstrate that the barrier has been properly implemented and that risks to human health are appropriately managed.

For Management Area B, not applicable to Phase 1 of the development (Figure 3 above), any future design and construction of occupiable spaces must consider the need for a vapour mitigation system to ensure risks to human health are acceptable. This includes:

- An assessment of vapour intrusion risk to the proposed building or occupiable space by an Environmental Consultant, dependent upon whether the building will be slab on grade or have a basement;
- Design and implementation of a vapour mitigation system including preparation of a construction quality assurance plan by a suitably qualified professional, if required, to achieve an acceptable level of risk. The works must be installed by a suitably competent contractor and supervised by a suitably qualified professional;
- Verification of the vapour mitigation system design by an Environmental Auditor prior to implementation, with this verification advised to the EPA and the planning authority in writing;
- Appointment of an Environmental Auditor to validate that the vapour mitigation system is constructed and/or operating as per the design;
- Appointment of an Environmental Consultant to update this SMP with measures to monitor and maintain vapour mitigation systems if implemented; and
- Appointment of an Environmental Auditor to verify the changes to the SMP.

A soil vapour assessment is not required for Phase 1 of construction but will be applicable to subsequent phases. Based on the development plan provided by Green SquareDC and its comparison with the SMP, the areas requiring further vapour investigation and assessment are clearly identified in the figure below, indicated by purple hatching.

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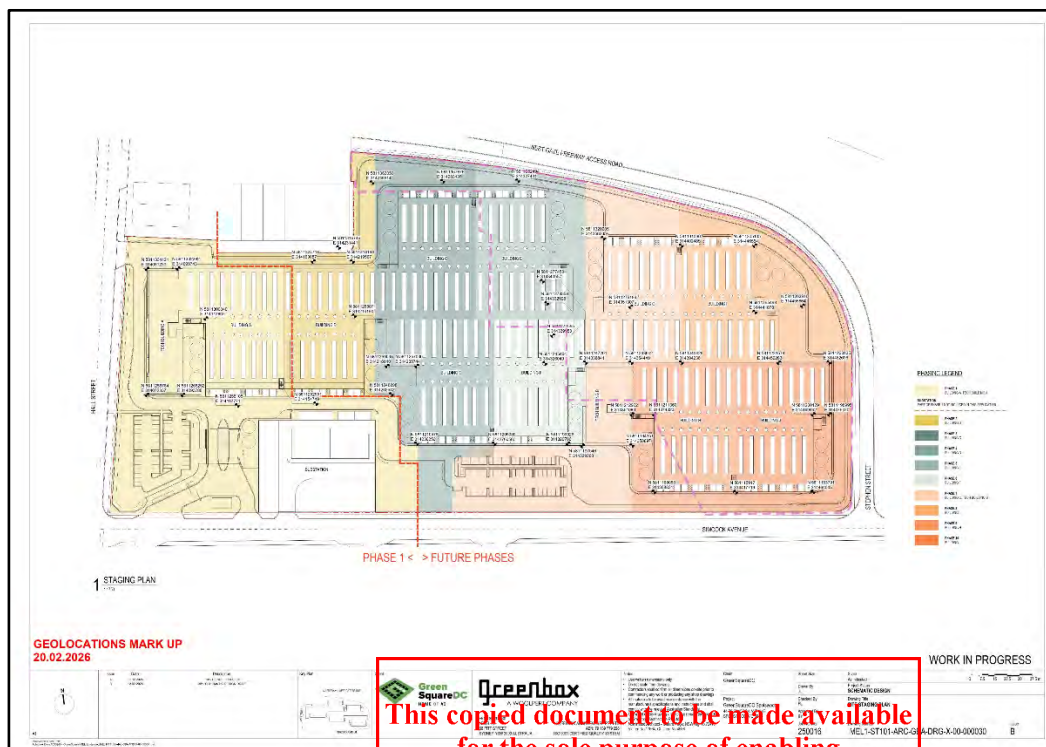


Figure 6: Proposed Development Plan Showing Areas Requiring Vapour Assessment (Hatched Lines in Purple)
(Source: Green SquareDC)

For Management Area C (Figure 4 above), the SMP outlines that any future development must consider potential risks to underground infrastructure, building foundations, and structural footings to ensure that these elements are not adversely affected by site conditions. This includes undertaking an assessment of corrosivity risks by a suitably qualified professional, such as a geotechnical or civil engineer. Where necessary, underground infrastructure, foundations, and footings must be designed and constructed using materials suitable for the prevailing soil conditions and in accordance with relevant Australian Standards.

For Management Area D (Figure 5 above), the SMP outlines that an Occupational Health and Safety (OH&S) Plan must be prepared and reviewed by a qualified occupational hygienist prior to excavation works, taking into account risks associated with known contamination in soil, vapour, and groundwater, as well as any unexpected contamination encountered on site. If soils with unusual characteristics (such as odours, vapours, waste materials, potential asbestos, or discolouration) are identified during works, activities must stop and the situation assessed in accordance with the OH&S Plan, and such materials must not be left exposed after earthworks are completed.

Further to the above, and in accordance with the SMP, future landscaping works and any areas of the site that remain undeveloped must incorporate a minimum of 0.5 m of clean fill beneath the finished surface. This layer is required to allow for adequate root development and to prevent vegetation from coming into contact with any residual soil contamination.

Any imported fill used for this purpose must be appropriate for the site and meet the classification of 'fill material' under the Environment Protection Regulations 2021 and EPA Publication 1828.3 (or any equivalent

guidance in force at the time). Documentation demonstrating compliance must be provided to the EPA or the relevant planning authority.

Conclusion

In summary, Phase 1 of the proposed development is located within Management Areas A, C and D as defined by the SMP and must comply with the applicable site management requirements. Soil vapour investigation and vapour mitigation measures are not required for Phase 1 of the proposed development.

For Management Area A, an approved physical barrier must be designed, installed, and validated in accordance with the SMP to ensure that risks to human health are appropriately managed. The Area A process requires verification of appropriateness and completion by an auditor.

For Management Area B, the extent and degree of vapour mitigation can be further refined with additional soil vapour investigation, building design details and other pertinent and timely risk assessment factors. This does not apply to Phase 1 as no vapour risk has been identified there.

For Management Area C, a corrosivity assessment of any proposed underground infrastructure, building foundations, or structural footings must be undertaken by a suitably qualified professional. Where required, construction materials and methods must be selected to ensure durability under the identified soil conditions and compliance with relevant Australian Standards. Based on the proposed development plan, Building A and Tech Building A are located outside of Management Area C. The Area C process requires no auditor involvement.

For Management Area D, an OH&S Plan must be prepared and reviewed prior to excavation, addressing risks from known and unexpected contamination. If unusual soils (e.g. odours, vapours, waste, or suspected asbestos) are encountered, works must stop for assessment, and these materials must not be left exposed.

Any undeveloped areas associated with Phase 1 must be covered with a minimum of 0.5 m of compliant clean fill to prevent exposure to underlying soils and to support future landscaping.

Compliance with these requirements, including appropriate validation and verification by an auditor, where applicable (Area A), will be necessary to demonstrate that the works are consistent with the SMP and meet regulatory expectations.

If you wish to discuss or require any further information, please do not hesitate to contact me or Nina Alavi on 03 8542 7500.

Sincerely,



Charlie Barber
EPA Appointed Environmental Auditor (Contaminated Land)
Australian Environmental Auditors Pty Ltd

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Attachment A – Existing Statement of Environmental Audit

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NA: 25 March 2026	CB: 31 March 2026

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Attachment A:
Existing Statement of Environmental Audit

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Environmental audit statement

Under Part 8.3 of the *Environment Protection Act 2017*

Publication F1032 published September 2021



The purpose of an environmental audit is:

- to assess the nature and extent of the risk of harm to human health or the environment from contaminated land, waste, pollution or any activity; and
- to recommend measures to manage the risk of harm to human health or the environment from contaminated land, waste, pollution or any activity; and
- to make recommendations to manage the contaminated land, waste, pollution or activity.

This statement is a summary of the findings of an environmental audit conducted under Part 8.3 of the *Environment Protection Act 2017* for:

44-76 Simcock Avenue, Spotswood, VIC 3015 comprising Lot 1 on TP967395 and Lot 1 on TP967396 plus four additional parcels of land:

Additional:

Crown Allotment 78C, Section 7, Parish of Cut Paw Paw

Crown Allotment 78D, Section 7, Parish of Cut Paw Paw

Crown Allotment 78E, Section 7, Parish of Cut Paw Paw

Crown Allotment 78F, Section 7, Parish of Cut Paw Paw

Further details are provided in the environmental audit report that accompanies this statement.

Section 1: Environmental audit overview

Environmental audit ID number:

0008005376

Environmental auditor details

Name:

Charlie David Barber

Company:

Australian Environmental Auditors

Address:

Suite 21, 1 Ricketts Rd, Mount Waverley, VIC 3149

Phone:

03 8542 7500

Email:

cbarber@envaud.com.au

Site owner or occupant

Name:

N/A

Company:

Mobil Oil Australia Pty Ltd

Environmental auditor engaged by

Name:

Mr Mac Hull¹

Company:

Mobil Oil Australia Pty Ltd

Relationship to site owner:

Project Manager

¹ Mr Hull retired during the course of the audit and was replaced by Mr Dodz David of Exxon Mobil Environmental Services.

Environmental audit statement

Reason for the environmental audit

- ☐ Requirement under the *Planning and Environment Act 1987* (e.g. planning permit)
- ☒ Requirement under the *Environment Protection Act 2017* (e.g. remedial notice or licence)
EPA Notice EAN-00003384
- ☐ Requirement under other legislation
- ☐ Other

Section 2: Environmental audit scope

Details of the site in respect of which the environmental audit was conducted

Site/premises name:	Former Mobil Spotswood Terminal
Address:	44 – 76 Simcock Avenue, Spotswood, Victoria
Title details:	• Lot 1 on TP967395 • Lot 1 on TP967396 • Crown Allotment 78C, Section 7, Parish of Cut Paw Paw • Crown Allotment 78D, Section 7, Parish of Cut Paw Paw • Crown Allotment 78E, Section 7, Parish of Cut Paw Paw • Crown Allotment 78F, Section 7, Parish of Cut Paw Paw
Area (m ²):	87,730

- ☒ a plan of the site is attached

Use or proposed use for which the site is being audited

Sensitive land use categories

Note that sensitive land uses in the *Environment Reference Standard* (ERS 2021) are categorised as lower and high density. Lower density is where there is generally substantial access to soil and high density is restricted to developments that make maximum use of available land space, and there is minimal access to soil. For planning purposes, the *Ministerial Direction No.1* (MD No.1) considers secondary schools and children's playgrounds to be sensitive land uses.

- | | |
|---|---|
| ☐ High density | ☐ Residential land use |
| ☐ Other (lower density) | ☐ Child care centre |
| | ☐ Pre-school |
| | ☐ Primary school |
| | ☐ Secondary school |
| ☐ Children's playground (indoor) | |
| ☐ Children's playground (indoor) | |

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Other land use categories

- ☐ Recreation/open space
- ☐ Parks and reserves
- ☐ Agricultural
- ☒ Commercial
- ☒ Industrial
- ☐ Other land uses not captured by the above as described here:

Elements of the environment assessed in the environmental audit

- ☒ Ambient air
 - ☒ all environmental values were considered
 - ☐ all environmental values other than the following were considered:
- ☐ Ambient sound
 - ☐ all environmental values were considered
 - ☐ all environmental values other than the following were considered:
- ☒ Land
 - ☒ all environmental values that apply to the land use category were considered
 - ☐ all environmental values that apply to the land use category, other than the following, were considered:
- ☒ Water
 - ☒ Surface water
 - ☒ all environmental values that apply to the applicable segment were considered OR
 - ☐ all environmental values that apply to the applicable segment, other than the following, were considered:
 - ☒ Groundwater
 - ☒ all environmental values that apply to the applicable segment were considered OR
 - ☐ all environmental values that apply to the applicable segment, other than the following, were considered:

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Standards and reference documents considered

Environment Protection Act 2017 (Vic)
 Environment Reference Standard 2021
 National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended from time to time
 National Environment Protection (Ambient Air Quality) Measure 1998, as amended from time to time.
 Australian Standards AS4482.1 (2005) and 4482.2 (1999) Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil Parts 1 & 2.
 Australian Standard AS2159 (2009) Piling – Design and installation (incorporating Amendment No. 1).
 PFAS National Environmental Management Plan, v2.0 2020.
 EPA Publication 1827.2, Waste Classification Assessment Protocol, March 2021.
 EPA Publication 1828.2 Waste disposal categories – characteristics and thresholds 2021.
 Australian and New Zealand Governments and Australian State and Territory Governments (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
 CRC CARE Technical Report no. 23, (2013) Petroleum Hydrocarbon Vapour Intrusion Assessment: Australian Guidance.
 CRC CARE Technical Report no. 46, (2020) The role of natural source zone depletion in the management of light non-aqueous phase liquid (LNAPL) contaminated sites.

Environmental audit statement

CRC CARE Technical Report no. 47, (2020) Australian case studies of light non-aqueous phase liquid (LNAPL) natural source zone depletion rates compared with conventional active recovery efforts.
NHMRC (2008) Guidelines for Managing Risks in Recreational Water.
NHMRC/NRMMC (2022) National Water Quality Management Strategy. Australian Drinking Water Guidelines 6. Version 3.7.
American Petroleum Institute 1998. Vers. 1.1, Characteristics of Dissolved Petroleum Hydrocarbon Plumes.
EPA Publication 865.13. Environmental auditor guidelines for appointment and conduct, 13 March 2022
EPA Publication 2041, Guidelines for conducting environmental audits, February 2022.
EPA Victoria Publication 2001, Guidance for the Cleanup and Management of Contaminated Groundwater, July 2021.
EPA Victoria Publication 2022, Environmental Auditor Guidelines – Provision of Statements and Reports for Environmental Audits and Preliminary Risk Screen Assessments, August 2021.
EPA Publication IWRG702, Soil Sampling, June 2009.
Other EPA publications as relevant

Assumptions made during the environmental audit or any limitations

None

Exclusions from the environmental audit and the rationale for these

Ambient sound not assessed, as not considered relevant to potential impacts from former site use.

This statement is accompanied by the following environmental audit report.

Title:	Environmental Audit Report no. 47 – 476 Simcock Avenue, Spotswood, Victoria, 3015
Report no:	EA0537
Date:	27 April 2023

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Section 3: Results and recommendations of the environmental audit

Land use suitability

Based on my assessment of the site in relation to the risk of harm to human health or the environment from contaminated land, waste or pollution, I am of the opinion that the site is **suitable for the following land uses if the recommendations I have made in this statement are complied with :**

Sensitive land use categories

- | | |
|---|---|
| ☐ High density | ☐ Residential land use |
| ☐ Other (lower density) | ☐ Child care centre |
| | ☐ Pre-school |
| | ☐ Primary school |
| ☐ Children's playground (indoor) | ☐ Secondary school |
| ☐ Children's playground (indoor) | |

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Other land use categories

- | |
|---|
| ☐ Recreation/open space |
| ☐ Parks and reserves |
| ☐ Agricultural |
| ☒ Commercial |
| ☒ Industrial |
| ☐ Other land uses not captured by the above as described here: |

Results of the environmental audit

Based on my assessment of the risk of harm to human health or the environment **from contaminated land for the site at 44 – 76 Simcock Avenue, Spotswood, Victoria**, I conclude:

Adequate data quality and quantity was obtained to accurately determine the condition of the site pre, during and post remediation.

The site is suitable for the proposed commercial/industrial land use, subject to compliance with the recommendation listed below:

The condition of groundwater is not considered to represent a risk of harm to human health or the environment under the proposed development, provided groundwater is not extracted for use.

The auditor considers that the condition of the site is not impacting any environmental values relevant to ambient air or surface water, as defined in the ERS.

Recommendations

1. The environmental auditor is satisfied that the groundwater has been cleaned up so far as reasonably practicable, however the groundwater is not suitable for Agriculture and irrigation (stock watering); Agriculture and irrigation (irrigation); Water-based recreation (primary contact recreation); Industrial and commercial uses and must not be used without prior testing and review of results by a suitably qualified professional to confirm its suitability for the intended use. The environmental auditor has prepared a figure (**Attachment A**) that shows the extent of the impacted groundwater. Groundwater may be extracted for the purpose of environmental monitoring or remediation.
2. Groundwater impact extends beyond the audit site boundaries and needs to be managed as explained in the Offsite Groundwater Management Plan (Offsite GMP) provided as **Attachment B** of this Statement. The Offsite GMP must be implemented by the parties listed in the plan. An annual review of the Off-site GMP should be undertaken by a suitably qualified environmental scientist or hydrogeologist. Mobil Oil Australia Pty Ltd must also ensure that adequate information is provided to any person they reasonably believe could be affected by the contamination. The Off-site GMP must remain in force until April 2024 and at that time be reviewed by an environmental auditor to assess and determine if appropriate for cessation, continued monitoring or other actions based on the results.
3. Whilst no specific development plan has been provided, the following condition must be taken into account prior to obtaining Development Approval for any development plan submitted for approval. The site owner must implement and maintain the Site Management Plan (SMP) attached to this environmental audit statement (**Attachment C**).
4. Prior to completion of the development of the audit site, specific areas of the site as documented in the SMP must be covered with a physical barrier, such as concrete floor slabs, equivalent permanent paving material, asphalt pavements etc, in accordance with the SMP referred to in Recommendation 3 of this EAS.
5. Prior to occupation, any non-developed area (garden bed or vacant) must be constructed with at least 0.5 m thickness of clean fill material below the finished surface, which is demonstrated to be suitable for the audit site and consistent with soil classified 'fill material' in accordance with the Environment Protection Regulations 2021 and evidence of compliance provided to EPA or the planning authority.
6. All physical barriers (as described in Recommendations 4 and 5 above) must be maintained on the audit site and if subsequently damaged or removed during development or occupation of the audit site, must be reinstated as soon as possible and to the same condition or better than they were prior to any disturbance.
7. If removal of the physical barrier (as prescribed in Recommendations 4 and 5 above) is proposed, an environmental auditor appointed under Division 1 of Part 8.3 of the Environment Protection Act 2017 must be engaged to conduct an environmental audit of the site under section 208 of the EP Act 2017, to consider if the barrier is no longer required.
8. Prior to construction commencement a vapour mitigation system, in accordance with and in the areas specifically designated in the SMP referred to in Recommendation 3 of this EAS, must be designed and installed by a suitably qualified professional and verification of the design and installation of the system by an environmental auditor provided in writing to the EPA and the planning authority.

Environmental audit statement

9. The vapour mitigation system must remain in place until such time as an environmental auditor verifies in writing that the vapour mitigation system is no longer required, and this verification is advised in writing to EPA and the planning authority.
10. Asbestos containing materials were found on the audit site and have been removed as far as reasonably practicable. Small quantities of bonded asbestos cement (AC) fragments may remain within the soil and be uncovered during excavation works. These AC fragments are not anticipated to represent a health risk to occupiers of the site. If encountered during future development or use of the audit site, any fragments must be handled and disposed in accordance with the SMP referred to in Recommendation 3 of this EAS.
11. Due to the presence of LNAPL at the water table minimum design and reinforcement requirements for concrete in groundwater need to be considered in accordance with Australian Standard 2159 (Piling Design and Installation).

Other related information

- Groundwater at the site contains naturally elevated chloride, sodium, TDS and pH. The levels are considered typical of the natural groundwater quality surrounding the site and does not constitute contamination in accordance with Clause 4 of the Environment Reference Standard 2021.
- Where contaminated groundwater is extracted at the audit site for the purpose of dewatering, post audit groundwater monitoring, it will require approved disposal to sewer (potentially requiring pre-treatment) or a licensed treatment facility, subject to the requirements of the relevant water authority or EPA.
- Groundwater monitoring bores on and offsite, not associated with the ongoing groundwater monitoring should be decommissioned within 12 months of cessation of use, in accordance with the requirements of Minimum Construction Requirement for Water Bores in Australia, published by the Land and Water Biodiversity Committee (most recent version).
- Scattered pieces of concrete, brick, steel has been removed as far as reasonably practicable, but minor occurrences may remain within the soil and be exposed during excavation works, development or occupation of the audit site. The SMP prepared for the site provides details pertaining to addressing management of these and other finds during development.
- Any soil proposed to be excavated and disposed off-site after the completion of the audit, must be classified by a suitably qualified professional in accordance with Clause 62 of the Environment Protection Regulations 2021.
- Some soil may contain odours below 0.5 m depth at some locations on the audit site. This material is not considered to represent a risk of harm to human health or the environment but may cause a noticeable odour if exposed during excavation works.
- Any fill material proposed to be imported to the audit site after the completion of the environmental audit, must be tested and classified as 'Fill Material' in accordance with the Environment Protection Regulations 2021 and any relevant EPA designations and guidance.
- In accordance with Section 214 of the Act, the person in management or control of the site must provide a copy of the EAS to any person who proposes to become the person in management or control of the site.

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Environmental audit statement

Section 4: Environmental auditor's declaration

I state that:

- I am appointed as an environmental auditor by the Environment Protection Authority Victoria under the *Environment Protection Act 2017*.
- The information contained in this statement represents a true and accurate summary of the findings of the environmental audit that I have completed.

Date:

27 April 2023

Signed:



Name:

Charlie David Barber

Environmental Auditor

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Attachments

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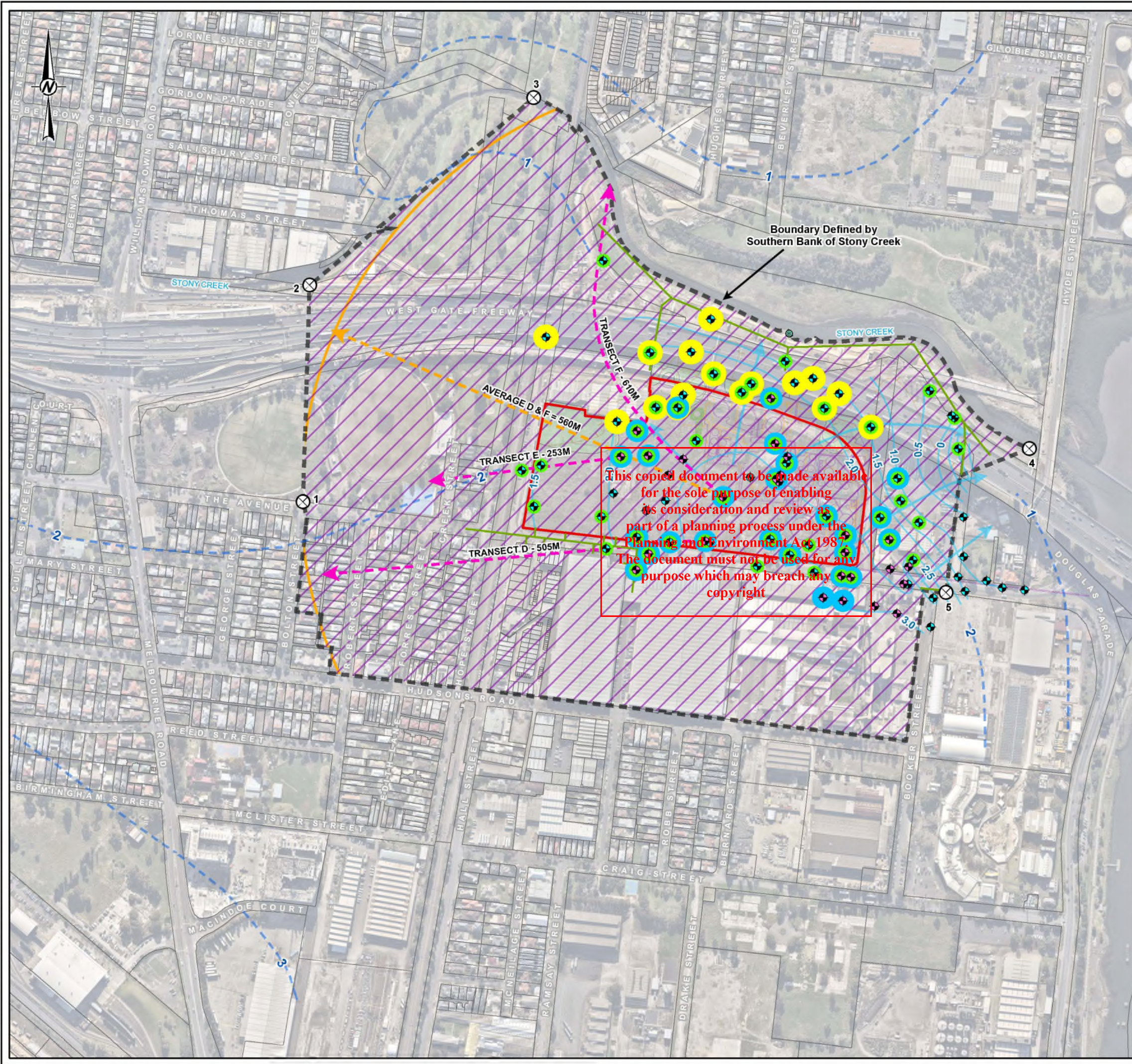
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Attachment A

Figure

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- LEGEND**
- Site Boundary
 - Cadastral Boundary
 - Proposed Area of Restricted Groundwater Use
 - Proposed Area of Restricted Groundwater Use Vertex
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Quarry
 - Former General Infrastructure
 - Sewer
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Jan/Feb 2022 Upper Basalt Groundwater Elevation Contour (m AHD)
 - Inferred Groundwater Flow Direction
 - Approximate Regional Groundwater Elevation Contour (m AHD) - Westgate Tunnel EES
 - Groundwater Well Sampled in 2020/2022 or with Heavy Metals Exceedance in Most Recent Sample
 - 2020/2022 Surface Water Sampling Location
 - Groundwater Well With Gauged/Indirect Evidence of LNAPL
 - PFAS Result(s) Exceed Extractive Uses Criteria
 - Organics Result(s) Exceed Extractive Uses Criteria
 - Heavy Metal Result(s) Exceed Extractive Uses Criteria
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on site specific transects
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on average distance of Transect D and Transect F in absence of data to north west
 - Extrapolated extent of site derived PFOS exceedances above extractive use criteria to west and north west of the site

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Proposed Area of Restricted Groundwater Use Vertex Coordinates (GDA94 MGA Zone 55)		
Vertex	X	Y
1	313750.0	5811223.1
2	313758.6	5811510.6
3	314055.6	5811758.9
4	314713.5	5811293.5
5	314602.7	5811102.9



NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)

TITLE
SUGGESTED EXTENT OF AREA OF RESTRICTED GROUNDWATER USE

CONSULTANT	YYYY-MM-DD	2023-02-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

Attachment B

Offsite Groundwater Management Plan (Offsite GMP)

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REPORT

Post Audit Offsite Groundwater Management Plan

Former Spotswood Terminal (31XX)

Submitted to:

Mobil Oil Australia Pty Ltd

Level 9, 664 Collins Street
Docklands, VIC, 3008

Submitted by:

Golder Associates Pty Ltd

Level 11, 567 Collins Street, Melbourne, Victoria 3000,
Australia

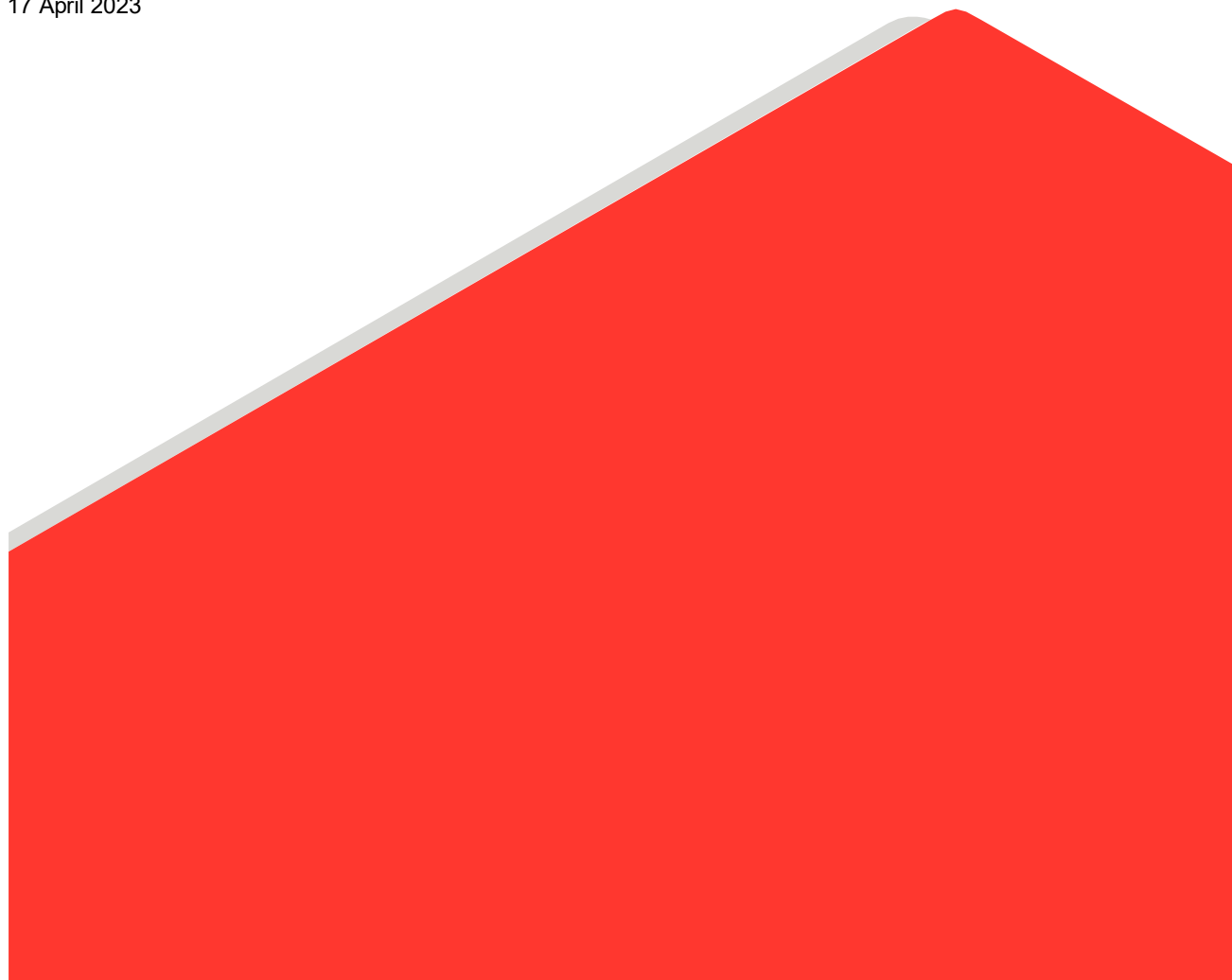
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17 April 2023

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Table of Contents

1.0	INTRODUCTION.....	1
1.1	Background.....	1
1.2	Objective of the Offsite GMP	2
1.3	Document Outline	2
2.0	RESPONSIBLE PARTY.....	2
3.0	HYDROGEOLOGICAL SETTING AND EXTENT OF GROUNDWATER IMPACTS.....	3
3.1	Hydrogeological Setting	3
3.2	Extent of Offsite Groundwater Impacts	3
3.2.1	LNAPL	3
3.2.2	Organic Compounds	4
3.2.3	PFAS.....	4
3.2.4	Metals.....	4
4.0	MANAGEMENT OF CONTAMINATED GROUNDWATER.....	4
4.1	Area of Restricted Groundwater Use	4
4.2	General Groundwater Management.....	4
4.2.1	Restriction on Extraction and Use of Groundwater.....	4
4.2.2	Offsite Stakeholders.....	5
4.2.3	Notification.....	5
4.3	Reduction in Area of Restricted Groundwater Use.....	5
5.0	IMPLEMENTATION OF THE OFFSITE GMP	6
5.1	Further LNAPL Remediation.....	6
5.1.1	Change to Frequency of LNAPL Removal	7
5.1.2	LNAPL Triggers for Management Actions.....	7
5.1.2.1	In-Well LNAPL Thickness Triggers	7
5.1.3	LNAPL Management Actions.....	8
5.1.3.1	In-Well LNAPL Thickness Trigger Exceedances	8
5.2	Further Groundwater Sampling – PFAS and Benzene	9
5.2.1	Monitoring Program.....	9
5.2.2	PFAS and Benzene Triggers for Management Actions	10

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5.2.3	PFAS and Benzene Management Actions	10
5.3	Record Keeping	Error! Bookmark not defined.
5.4	Availability of Locations for Groundwater Monitoring	10
6.0	UPDATE OF THE OFFSITE GMP.....	11
7.0	CLOSURE OF THE OFFSITE GMP	11
8.0	IMPORTANT INFORMATION	12
9.0	REFERENCES	12

TABLES

Table 1: Key off-site stakeholders in relation to LNAPL impacts.....	5
Table 2: Groundwater Monitoring for Scenario 1.....	6
Table 3: LNAPL trigger conditions for implementation of further management actions.	8

APPENDICES

APPENDIX A

Figures

APPENDIX B

Communications Plan and Letters to Offsite Stakeholders

APPENDIX C

GMP Flow Chart, Field Sheets and Checklist

APPENDIX D

Well Logs

APPENDIX E

Important Information

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1.0 INTRODUCTION

This Offsite Groundwater Management Plan (GMP) has been prepared on behalf of Mobil Oil Australia Pty Ltd (Mobil) for the former Spotswood Terminal (Mobil Facility ID: 31XX, the site), located at 44-76 Simcock Avenue, Spotswood, Victoria (Figure 1, Appendix A).

An Environmental Audit (0008005376) was completed by the appointed Environmental Auditor¹ ('the Auditor') for the site pursuant to Division 3 of the Environment Protection (EP) Act 2017. As part of the Audit process, Clean Up So Far As Reasonably Practicable (CUSFARP) has been achieved and an area of residual groundwater impacts has been defined where restrictions on groundwater use are required.

A recommendation of the Environmental Audit was the preparation of this Offsite GMP to support the on-going management of residual offsite groundwater impacts.

1.1 Background

From 1927 to 2009 the site operated as a petroleum product and chemical storage and handling facility, with operations ceasing in early 2009.

As a result of the historic operation or backfilling of the site, groundwater beneath, and extending from the site is impacted by varying combinations of monocyclic aromatic hydrocarbons (MAHs), total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAHs), per- and poly-fluoroalkyl substances (PFAS), metals, and the presence of light non-aqueous phase liquid (LNAPL) beneath, and extending from, the site.

The following are noted in relation to the residual groundwater impacts:

- The risks associated with residual soil, soil vapour and groundwater impacts beneath the site will be managed through the onsite Site Management Plan (WSP Golder, 2023a).
- Although residual impacts are present in groundwater, the impacts have been assessed as stable. As such, the risks to extractive environmental values can be managed through the identification of an area where the extraction of groundwater should be restricted. This area was identified as part of the Environmental Audit. As the residual groundwater impacts are stable, and risks to extractive environmental values can be managed through an area of restricted groundwater use, no further ongoing groundwater monitoring under the Offsite GMP is required, with the exception of a check on the stability of dissolved phase PFAS and benzene concentrations.
- A conservative approach was adopted as part of the Environmental Audit in relation to the western extent of the area of restricted groundwater use associated with offsite PFAS impacts due to the limited amount of monitoring data in this area. As such, this Offsite GMP outlines the mechanism by which Mobil may reduce the offsite area of restricted groundwater use over time.
- An assessment of the offsite vapour intrusion risk to human health resulting from LNAPL at the water table was undertaken as part of the Environmental Audit. The risk was considered low and acceptable for a slab on grade development, a one storey basement development and for intrusive maintenance workers in a commercial / industrial land use setting (WSP Golder, 2022a). As a result, ongoing soil vapour monitoring over the areas of offsite LNAPL does not form part of this Offsite GMP.
- Although the LNAPL impacts in groundwater are considered stable and the offsite vapour intrusion risks are low and acceptable for a slab on grade development, a one storey basement development and for intrusive maintenance workers in a commercial / industrial land use setting, in-well measurable LNAPL

¹ Mobil engaged Mr Charlie Barber of Australian Environmental Auditors Pty Ltd (the Auditor), (CARMS No 68548-2, Service Order No 8005376) to undertake the Audit.

remains in several offsite wells. As such, a recommendation of the Environmental Audit was to continue to monitor offsite LNAPL thicknesses and remove in-well measurable LNAPL. This Offsite GMP therefore specifically focuses on continued monitoring and removal of offsite LNAPL, where offsite stakeholders are affected (refer to Section 4.2.2).

1.2 Objective of the Offsite GMP

The Offsite GMP has been developed as a recommendation of the Environmental Audit. The objectives of the Offsite GMP are to:

- Outline the mechanism by which the extent of the area of restricted groundwater use can be reduced, if required.
- Outline an ongoing monitoring and remediation program to:
 - Monitor for changes to the offsite LNAPL extent and in-well thickness to the east, southeast and south of the site.
 - Outline the requirements for further removal of LNAPL from existing monitoring wells.
 - Check for changes in the stability of dissolved phase PFAS and benzene concentrations in groundwater one year after the completion of the Environmental Audit.
 - Set out trigger conditions and further management actions should an adverse change in the monitoring occur.
- Provide a mechanism to keep the various stakeholders informed as conditions change as identified through the monitoring program.

1.3 Document Outline

This document provides the required scope of work for the Offsite GMP, and:

- Provides a high level outline of the hydrogeological conditions at the site and the general distribution of offsite groundwater impacts associated with each of the main groups of contaminants which relate to the current area of restricted groundwater use (Section 3.0).
- Provides a mechanism for reducing the extent of the area of restricted groundwater use, if required (Section 4.0).
- Provides information on implementation of the Offsite GMP including locations to be monitored, triggers for further management and the associated management actions (Section 5.0).
- Outlines the process required for closure of the Offsite GMP (Section 6.0).

2.0 RESPONSIBLE PARTY

The party responsible for implementation of the Offsite GMP is the party in management control of offsite groundwater and LNAPL impacts. This party is Mobil Oil Australia Pty Ltd (or its delegate).

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3.0 HYDROGEOLOGICAL SETTING AND EXTENT OF GROUNDWATER IMPACTS

3.1 Hydrogeological Setting

The aquifer beneath, and immediately surrounding the site is the basalt of the Newer Volcanics. The Newer Volcanics basalt can be broken up into three near horizontal layers, distinguished from each other by the features seen in each layer. These include an Upper Basalt Aquifer, a Middle (Hyaloclastite) Basalt Aquitard and a Lower Basalt Aquifer (WSP Golder, 2023c).

The water table beneath, and immediately surrounding the site is located within the Upper Basalt Aquifer. Groundwater depths within the areas recording impacts are on average recorded between 6.8 m bgl and 10.1 m bgl, with shallower depths to groundwater recorded along the area of Stony Creek with an average depth of 5.9 m bgl.

The groundwater elevations along with inferred groundwater contours based on data collected in February 2022 are presented in Figure 2 (Appendix A) and are in fitting with historical contours and flow directions. In general, the highest groundwater elevations were recorded within the approximate centre of the site (~2.5 to 3.5 m AHD), with local groundwater inferred to be flowing radially from the site, at least in a westerly, northerly, and easterly direction.

Groundwater elevations to the northeast of the site become progressively steeper within proximity of the North Yarra main Sewer, dropping below 1.2 m AHD. This is considered to be below the elevation of the stream bed of Stony Creek at its mouth (WSP Golder, 2023c), indicating groundwater in this region is being captured by the sewer.

The overall groundwater flow direction is in fitting with the regional flow direction with the exception of a localised westerly flow to the immediate west of the site. Based on the regional groundwater contours (WSP Golder, 2023c), it is inferred groundwater to the west of the site is anticipated to progressively become more northerly, towards Stony Creek, further west of the site, outside of the 2022 well network.

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3.2 Extent of Offsite Groundwater Impacts

As discussed in Section 1.1, the contaminants of interest (COI) in groundwater offsite are LNAPL, dissolved phase organic compounds (MAHs, TRH and PAHs), PFAS and metals, with the majority of contamination residing within the Upper Basalt Aquifer.

At the time of completion of the Environmental Audit, the dissolved phase groundwater impacts and LNAPL were assessed as stable (WSP Golder, 2023c). The offsite distribution of these COIs is discussed in the following sections to provide the reader with an understanding of the basis of the current area of restricted groundwater use presented in the Environmental Audit.

3.2.1 LNAPL

In February 2022 LNAPL was detected in groundwater monitoring wells in two areas offsite (refer to Figure 3 in Appendix A):

- To the south in wells B16 and E06.
- To the southeast in wells N25, N26, MW03, UB12, OS01, A17, GW01, GW02, GW03 and GW04.

N25 to the east of the site recorded the thickest in-well LNAPL thickness within the well network in February 2022 at 3.57 m.

3.2.2 Organic Compounds

Elevated concentrations of dissolved phase organic compounds (MAHs, TRH and PAHs) were detected in groundwater monitoring wells in 2020 to 2022 (refer to Figure 4 in Appendix A – organic impacts denoted by blue halos) primarily offsite to the south and east of the site.

3.2.3 PFAS

PFAS, that is considered to have been derived from the site, has been detected in groundwater monitoring wells offsite in all directions, however, PFAS impacts to the far east and southeast of the site are not considered to be site derived.

Refer to Figure 4 in Appendix A for the site derived PFAS distribution in 2020/2022 (denoted by green halos).

3.2.4 Metals

Elevated concentrations of metals, including arsenic, copper, manganese and nickel were detected in groundwater monitoring wells in 2020 to 2022 generally along the northern boundary of the site and to the north of the site as a result of the presence of a backfilled quarry. Elevated concentrations of metals were detected in offsite wells along the length of the northern boundary in wells UB15, Q06, Q07, P06, UB04, B01R, F15, E15, F09, Q08, B03 and B19 (refer to Figure 4 in Appendix A – metal impacts denoted by yellow halos).

4.0 MANAGEMENT OF CONTAMINATED GROUNDWATER

4.1 Area of Restricted Groundwater Use

Based on the above distribution of COIs, an area across which the extraction of groundwater for uses such as stock watering, irrigation, industrial and commercial and recreation (i.e. filling swimming pools) should be restricted, referred to as an area of restricted groundwater use herein, was defined as part of the Environmental Audit and is presented in Figure 4 (Appendix A).

The area extends:

- Across the extent of the site.
- To the north, to the southern boundary of Stony Creek.
- To the west beneath Donald McLean Reserve and along most of the length of the eastern side of Bolton Street.
- To the south along the northern boundary of Hudson's Road.
- To the east along the western boundary of Booker Street, the eastern boundary of Lot 1PS906817 and western boundary of Hyde Street to the south of Stony Creek.

4.2 General Groundwater Management

4.2.1 Restriction on Extraction and Use of Groundwater

Due to the presence of the COIs (LNAPL, TRH, MAHs, PAHs, PFAS and metals), groundwater within the boundaries of the area of restricted groundwater use (Figure 4) is not to be extracted and used for any purpose.

However, if any landowner or occupier or bore user proposes to extract the groundwater from any existing or future bore or monitoring well within the area of restricted groundwater use, then the landowner or occupier or bore user must test the water and obtain expert advice on the suitability of the water for the intended use or disposal.

4.2.2 Offsite Stakeholders

The offsite stakeholders in relation to offsite residual groundwater impacts are those that fall within the area of restricted groundwater use, detailed in Section 4.0. These are listed in detail in the communications plan, a copy of which is provided in Appendix B.

The primary risk associated with residual groundwater impacts relates to the presence of LNAPL and potential vapour intrusion risks where there is a change in the risk profile associated with the LNAPL. The key stakeholder in relation to the presence of LNAPL are summarised in Table 1 with full contact details provided in Appendix B.

Table 1: Key off-site stakeholders in relation to LNAPL impacts.

	Stakeholder	
Former Owner	Mobil Oil Australia Pty Ltd	Level 9, 664 Collins Street, Docklands Vic 3008 +61 3 9261 0000 www.exxonmobil.com.au and search for 'Spotswood'
Utilities and Government Bodies	Hobsons Bay City Council	Manages smaller roadways/footpaths surrounding the former Spotswood Terminal.
	VicRoads – West Gate Bridge	Manage the land in the footprint of the West Gate Bridge to the immediate north of the site
	West Gate Tunnel Project	Manage the land associated with the West Gate Tunnel Project to the immediate north and east of the former Spotswood Terminal and the land along Stony Creek (previously managed by Melbourne Water)
Landowners/Lessees	Glass Gate	Proprietor of industrial property (71 Simcock Avenue) to the south of former Spotswood Terminal
	Visy Glass	Proprietor of industrial property (38 Booker Street) to the south of former Spotswood Terminal
	Cubed Projects (rented by Toll)	Proprietor of industrial property (20 Simcock Avenue) to the east of former Spotswood Terminal

4.2.3 Notification

Under the Duty to Manage obligations of the Environment Protection Act 2017 (Victoria) (the Act), the provision of adequate information to enable any person who is reasonably expected to become a person in management or control of the land that may be affected by the groundwater contamination must be notified of the above restrictions on groundwater extraction and requirement for testing.

At the time of completion of the Environmental Audit in April 2023, those parties within the area of restricted groundwater use (Figure 4) had been notified. A copy of the communications issued to the offsite stakeholders is provided in Appendix B.

4.3 Reduction in Area of Restricted Groundwater Use

Mobil can seek to reduce the extent of the area of restricted groundwater use over time by obtaining more recent data on LNAPL presence, groundwater quality and extent of impacts given:

- Several key COIs typically degrade over time (i.e., petroleum hydrocarbons).
- The westerly extent of the area of restricted groundwater use was conservatively based on the extrapolation of PFAS concentrations and groundwater flow directions based on data available within the immediate vicinity of, and on, the site at the time of the Environmental Audit (WSP Golder, 2023c).

Any additional sampling should be conducted in accordance with EPA (2022a) and the PFAS NEMP 2.0 (HEPA 2020), or equivalent at the time.

Any proposed reduction in the area of restricted groundwater use must be verified by an EPA appointed Environmental Auditor, or equivalent at the time, and submitted to the EPA for their records. Any new notifications to parties no longer affected by the area of restricted groundwater use do not need to be submitted to the EPA, however, a copy of the notification, along with evidence of its issue to the parties, should be kept on file by Mobil.

5.0 IMPLEMENTATION OF THE OFFSITE GMP

5.1 Further LNAPL Remediation

Ongoing monitoring to confirm in-well LNAPL thicknesses are not significantly increasing over time, or appearing in new sentinel wells, along with further remediation to reduce in-well LNAPL thicknesses was a recommendation of the Environmental Audit.

The ongoing monitoring associated with LNAPL therefore covers two main scenarios:

Scenario 1: The LNAPL conditions essentially remain unchanged when compared to the 2022 conditions, i.e.,

- LNAPL is not identified in sentinel wells designated for monitoring and there is no increase in in-well thickness beyond that specified in Section 5.1.2.1.

Scenario 2: An increase in in-well LNAPL thickness occurs.

A flow chart outlining the steps described in the following sections is provided in Appendix C.

Under Scenario 1 the groundwater wells in Table 2 initially require gauging on a quarterly basis, with the exception of N25 which initially requires gauging on a monthly basis due to the in-well thickness of LNAPL recorded in 2022. Where LNAPL is detected in these wells, attempts to remove it are also required as outlined in Table 2. The location of the wells is provided in Figure 5.

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Table 2: Groundwater Monitoring for Scenario 1

Well ID	LNAPL present in 2022?	Frequency	Requirements under Scenario 1	Reason for monitoring	
B16	Yes	Quarterly	Measure and record depth to LNAPL and depth to groundwater in all wells. Remove LNAPL present in wells with a bailer or similar. Measure and record depth to LNAPL and depth to groundwater following LNAPL removal from wells.	To confirm presence or not of LNAPL.	
E06	Yes			If present to confirm in-well thickness of LNAPL.	
GW01	Yes				To assist with identification of groundwater gradients and inferred flow direction.
GW02	Yes				
GW03	Yes				
GW04	Yes				
MW3	Yes				
N25	Yes	Monthly			
N26	Yes	Quarterly	Disposal of LNAPL and any impacted groundwater removed to a suitably licenced facility.	Sentinel wells for LNAPL down gradient of N25 in 2022. To assist with identification of groundwater gradients and inferred flow direction to the southeast of the site.	
UB12	Yes				
N22	No				
N24	No				
N27	No				
N29	No			Sentinel well for LNAPL adjacent to UB12. To assist with identification of groundwater gradients and inferred flow direction to the southeast of the site.	

Well ID	LNAPL present in 2022?	Frequency	Requirements under Scenario 1	Reason for monitoring
Q01	No			Sentinel wells for LNAPL down gradient of GW01 to GW04 in 2022. To assist with identification of groundwater gradients and inferred flow direction to the southeast of the site.
UB17	No			
P01	No			Sentinel well for LNAPL near E08 and B18. To assist with identification of groundwater gradients and inferred flow direction in the vicinity of E08 and B18.

If the above gauging events indicate a potential change in in-well thickness of LNAPL, then this is consistent with Scenario 2 and management actions are required. The triggers indicating a potential change in in-well thickness of LNAPL are outlined in Section 5.1.2.

5.1.1 Change to Frequency of LNAPL Removal

Removal of LNAPL from the offsite wells should initially be undertaken on the basis outlined in Table 2. The frequency may be reduced under the following conditions:

- Following the first three LNAPL removal events, the average pre-bailing in-well LNAPL thickness will be used as an 'initial baseline' thickness to assess the frequency of ongoing remediation events. The frequency may be reduced (i.e., monthly dropping to quarterly/quarterly to six monthly) when the pre-bailing in-well LNAPL thickness is less than half of the initial baseline thickness for three consecutive events.
- Following three LNAPL removal events at the reduced frequency, the average pre-bailing in-well LNAPL thickness will be used as an 'updated baseline' thickness to assess the frequency of ongoing remediation events. The frequency may be halved (i.e., quarterly dropping to six monthly/six monthly dropping to annually) when the pre-bailing in-well LNAPL thickness is less than half of the 'updated baseline' thickness for three consecutive events.

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The frequency of gauging and removal of LNAPL should be reviewed after each event by a suitably qualified Environmental Scientist or Hydrogeologist to see if the above conditions triggering a reduction in frequency have been met.

5.1.2 LNAPL Triggers for Management Actions

Under the current (2022) LNAPL thicknesses, the LNAPL plume has been assessed as stable. Therefore, conditions where the LNAPL thicknesses are less than the 2022 thicknesses will also be stable. It is only when the thicknesses increase above the 2022 conditions that further evaluation is required.

The triggers which indicate further management actions are required are presented in Section 5.1.2.1 and the flow chart provided in Appendix C. The actions to be implemented for the triggers are outlined in Section 5.1.3 and the flow chart in Appendix C.

5.1.2.1 In-Well LNAPL Thickness Triggers

Table 3 presents the in-well LNAPL thickness trigger values for each of the Offsite GMP monitoring wells.

The January/February 2022 in-well LNAPL thicknesses were chosen as a basis to assess potential adverse changes in the offsite risk profile as these are considered to be reflective of more stable thicknesses within the aquifer, following cessation of remediation in 2016. Based on these in-well LNAPL thicknesses and the hydrogeological regime at the time, the LNAPL plume was assessed as stable (WSP Golder, 2023b).

Allowing for the well-known relationship between fluctuations in the water table (due to rainfall) and in-well LNAPL thickness, the following increases greater than the January/February 2022 in-well LNAPL thickness were chosen as an arbitrary trigger requiring further evaluation:

- For wells with an in-well LNAPL thickness greater than 0.1, an increase of 0.25 m or more.
- For wells with an in-well LNAPL thickness less than 0.1 m, an increase of 0.1 m or more.
- For wells not recording a measurable in-well LNAPL thickness, a detection of a measurable thickness.

Table 3: LNAPL trigger conditions for implementation of further management actions.

Well ID	LNAPL last recorded in well	LNAPL In-Well Thickness Jan/Feb 2022 (m)	Trigger Value LNAPL recorded greater than (m)
N25	2022	3.57	3.82
N22	2012	-	0.0
N24	-	-	0.0
MW3	2022	0.20	0.45
N26	2022	0.20	0.45
UB12	2022	0.06	0.16
N27	2009	0.07	0.0
N29	2010	0.04	0.0
GW01	2022	0.14	0.14
GW02	2022	0.61	0.86
GW03	2022	0.20	0.45
GW04	2022	0.13	0.38
Q01	-	-	0.0
UB17	-	-	0.0
B16	2022	0.05	0.15
E06	2022	0.03	0.13
P01	-	-	0.0

5.1.3 LNAPL Management Actions

5.1.3.1 In-Well LNAPL Thickness Trigger Exceedances

If the above triggers are met or exceeded for in-well LNAPL thicknesses (Section 5.1.2.1), the following actions are to be implemented in a sequential manner:

- 1) **Management Action 1 - Verification of thickness:** Verify the in-well LNAPL thickness measurement by undertaking monthly gauging of the wells outlined in Table 2 over three months to confirm the findings. If the triggers are no longer exceeded after the third round of gauging, then no further action is required and monitoring under Scenario 1 is to continue. If the triggers in LNAPL thickness continue to be met or exceeded over the three gauging events, move to Management Action 2.
- 2) **Management Action 2 – Review reason behind increase in thickness:** Mobil (or its delegate) must appoint a suitably qualified Environmental Scientist or Hydrogeologist to provide an opinion as to whether the conditions that have led to the trigger event have an identifiable cause for the change in conditions. For example, in-well LNAPL thickness variations due to water table fluctuations, migration of LNAPL

along the leading edge of the plume etc. If the reason is associated with variations due to water table fluctuations, then no further action is required and monitoring under Scenario 1 is to continue. If the reason is not associated with water table variations, move to Management Action 3.

- 3) **Management Action 3 - Assess potential for a change in the risk profile:** Assess whether the increase in thickness has the potential to result in an adverse change in the risk to the environmental values of groundwater. If the answer is “yes” then the Environmental Scientist or Hydrogeologist must prepare and implement an agreed response with an Environmental Auditor as soon as practicable. This may be along the lines of more frequent passive removal, additional groundwater sampling, installation of additional wells, implementation of active remediation methods etc., as agreed with the Environmental Auditor based on the magnitude of change in risk and location of increase/s. Where there is a potential adverse change in the risk profile:

- The Offsite GMP must be updated to incorporate the agreed response and verified by an EPA appointed Environmental Auditor, or equivalent at the time.
- Updates should be provided on the website (www.exxonmobil.com.au) to keep the community informed and formal correspondence to individual stakeholder(s) affected by the adverse change in risk should be undertaken via the communication method outlined in Appendix B, as a minimum.

5.2 Further Groundwater Sampling – PFAS and Benzene

5.2.1 Monitoring Program

A one-off monitoring event one year after the Environmental Audit to reconfirm that dissolved phase PFAS and benzene concentrations in groundwater are stable was a recommendation of the Environmental Audit. The wells that should be sampled are summarised below and presented in Figure 6.

- | | |
|--------|--------|
| ■ UB16 | ■ MW02 |
| ■ Q06 | ■ N24 |
| ■ E14 | ■ A18 |
| ■ B19 | ■ P01 |

Prior to the monitoring event, a sampling analysis and quality plan (SAQP) should be developed by a suitably qualified Environmental Scientist or Hydrogeologist and approved by an Environmental Auditor. The SAQP must include the following elements as a minimum:

- The data quality objectives and indicators for the SAQP.
- Methods of monitoring that are compliant with the current legislation and guidance.
- Trend assessment methodology (e.g., Mann Kendall).
- Chain of custody documentation.
- Field equipment calibration requirements.
- Decontamination procedures.
- Maintenance of monitoring records, including field records.
- Data quality assurance and data quality control requirements.
- Management of wastes from monitoring.

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The sampling should be conducted in accordance with EPA (2022a) guidelines and the PFAS NEMP 2.0 (HEPA 2020), or equivalent at the time.

5.2.2 PFAS and Benzene Triggers for Management Actions

The trigger for implementation of further management actions is considered to be an increasing trend in concentrations of PFAS chemicals with criteria applicable for the protection of Segment B environmental values at the time of the monitoring (i.e., PFOS, PFHxS, PFOA) or benzene.

If no triggers are met following the one-off sampling event, then no further groundwater sampling associated with dissolved phase PFAS and benzene concentrations is required under the Offsite GMP.

5.2.3 PFAS and Benzene Management Actions

Should an increasing concentration be recorded, then the following actions are to be implemented in a sequential manner:

- 1) **Management Action 1 - Verification of concentration:** Verify the concentration of the chemical recording the increasing trend at the well/s recording the increasing trend over three months to confirm the findings. If the trigger is no longer exceeded after the third round, then no further sampling is required under the Offsite GMP. If the trigger continues to be met (increasing trend) over the three sampling events, then go to Management Action 2.
- 2) **Management Action 2 - Review reason behind increasing trend:** Mobil (or its delegate) must appoint a suitably qualified Environmental Scientist or Hydrogeologist to provide an opinion as to whether the conditions that have led to the trigger event have an identifiable cause for the change in conditions. For example, increased leaching of COI due to ponding of water in open excavations on the former terminal site or a new spill. Once Management Action 2 has been undertaken, go to Management Action 3.
- 3) **Management Action 3 - Assess potential for a change in the risk profile:** Assess whether the increasing concentration has the potential to result in an adverse change in the risk to the environmental values of groundwater. If the answer is “yes” then the Environmental Scientist or Hydrogeologist must prepare and implement an agreed response with an Environmental Auditor as soon as practicable. This may be along the lines of more frequent groundwater sampling, installation of additional wells, implementation of active remediation methods etc., as agreed with the Environmental Auditor based on the magnitude of change in risk and location of increase/s. Where there is a potential adverse change in the risk profile:
 - The Offsite GMP must be updated to incorporate the agreed response and verified by an EPA appointed Environmental Auditor, or equivalent at the time.
 - Updates should be provided on the website (www.exxonmobil.com.au) to keep the community informed and formal correspondence to individual stakeholder(s) affected by the adverse change in risk should be undertaken via the communication method outlined in Appendix B, as a minimum.

A GMP checklist and field sheets are provided in Appendix C to record the outcomes of the above monitoring. EPA (2023c) states that “there are no routine reporting requirements relating to the Duty to Manage. However, EPA expects that on request, duty holders will be able to provide evidence of their compliance with the Duty to Manage”. Mobil or its delegate should therefore maintain a record of the monitoring associated with the Offsite GMP until the Offsite GMP is closed.

5.3 Availability of Locations for Groundwater Monitoring

The following groundwater wells are to be maintained for the purpose of this Offsite GMP, so far as reasonably practicable.

B16	E06	GW01	GW02	GW03	GW04
MW03	N22	N24	N25	N26	N27
N29	P01	Q01	UB12	UB17	UB16
Q06	E14	B19	MW02	A18	

As all wells except A18, B16, N29, P01, Q01, UB12, UB16 and UB17 were installed on private property, approvals to access or modify the wells should be sought from the relevant landowner.

The logs and construction details for these wells are provided in Appendix D.

Should one of these wells be destroyed or become no longer functional, the well should be reinstated unless it can be demonstrated it is no longer required. The removal of a well from the Offsite GMP monitoring must be verified by an Environmental Auditor.

6.0 UPDATE OF THE OFFSITE GMP

Up to the point of closure of the Offsite GMP (Section 7.0), an annual review of the Offsite GMP and the associated data collected should be undertaken by a suitably qualified Environmental Scientist or Hydrogeologist to assess whether the GMP requires update for one or more of the following reasons:

- If Management Action 3 has been implemented and an adverse change in the risk to the environmental values of groundwater has been identified, the Offsite GMP should be updated to reflect the response agreed with the Environmental Auditor.
- A reduction of the area of restricted groundwater use has occurred for the following additional assessment.
- A change in the monitoring well network has occurred.

7.0 CLOSURE OF THE OFFSITE GMP

In line with EPA Publication 2001.1 (EPA, 2021), cessation of this Offsite GMP can be considered and a GMP cessation report prepared:

- Where there is the contraction or stabilisation of a plume of contaminated groundwater.
- Where review of a risk assessment demonstrating the risk caused by the contaminated groundwater remains unchanged, and
- Where there are no unexpected new risks of harm to human health and environment identified, and the development of such risks is unlikely.

This Offsite GMP should remain in place until such time as Mobil or its delegate has verified with an EPA appointed Environmental Auditor, or equivalent at the time, that the Offsite GMP is no longer required in line with EPA Publication 2001.1 (EPA, 2021), or equivalent at the time. Should this Offsite GMP cease, the website should be updated to reflect this, and those parties affected by LNAPL, as outlined in Table 1, notified via the communication method outlined in Appendix B, as a minimum.

Notwithstanding closure of the Offsite GMP, the area of restricted groundwater use is to remain in place unless it can be demonstrated that the environmental values of groundwater have been restored.

8.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled - "Important Information Relating to this Report-Mobil", which is included in Appendix E of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

9.0 REFERENCES

EPA (2021) Guidance for the Cleanup and Management of Contaminated Groundwater, Publication 2001.1 July 2021, EPA Victoria.

EPA (2022a) Groundwater Sampling Guidelines, Publication 669.1 February 2022, EPA Victoria.

EPA (2023c) Guide to the Duty to Manage Contaminated Land, Publication 1977.1, October 2022, EPA Victoria.

HEPA (2020) PFAS National Environmental Management Plan, Version 2.0 – January 2020, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand.

WSP Golder (2022a), CTC Program – 31XX Spotswood Terminal - Soil Vapour Investigations, Reference: 1418584-454-R-Rev1, 4 October 2022, Golder Associates Pty Ltd (WSP Golder).

WSP Golder (2023a), CTC Program – 31XX Spotswood Terminal – Site Management Plan, Reference 1418584-405-R-Rev0, March 2023, Golder Associates Pty Ltd (WSP Golder).

WSP Golder (2023b), CTC Program – 31XX Spotswood Terminal, LNAPL CUSFARP Supporting Document, Reference 1418584-401-R-Rev1, 9 February 2023, Golder Associates Pty Ltd (WSP Golder).

WSP Golder (2023c), CTC Program – 31XX Spotswood Terminal – Updated Conceptual Site Model and Groundwater Condition Report, Reference: 1418584-495-R-Rev1, 27 February 2023, Golder Associates Pty Ltd (WSP Golder).

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APPENDIX A

Figures

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LEGEND

Site Boundary

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ADVERTISED PLAN

0 100 200 300 400

1:5,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)

1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/01/2023.
3. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.

CLIENT

MOBIL OIL AUSTRALIA PTY LTD

PROJECT

COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE

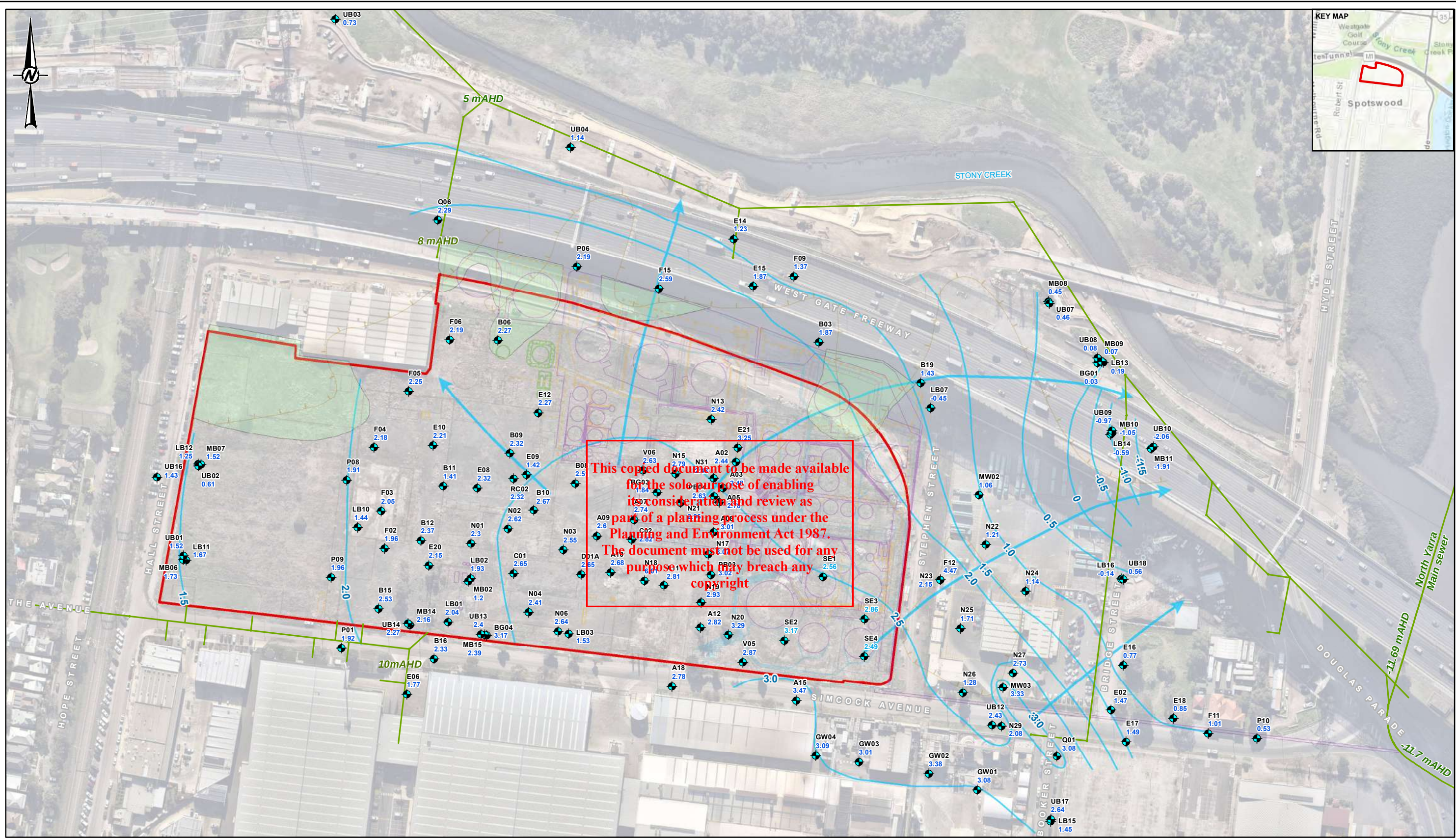
SITE LOCATION

CONSULTANT	YYYY-MM-DD	2023-02-09
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	538-R	0	1

PATH: V:\GIS\Jobs\2016 and Previous\Temp_CIS\Project\1418584-538-R-F001-Rev0.mxd PRINTED ON: 2023-02-09 AT: 8:59:00 AM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE OTHER SIZE HAS BEEN MODIFIED FROM ISO A3



- LEGEND**
- Site Boundary
 - Sewer
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)

- Jan/Feb 2022 Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction
- Upper Basalt Groundwater Well
- 2.12 Jan/Feb 2022 Groundwater Elevation (m AHD)
- 2.12 Sep 2022 Groundwater Elevation (m AHD) - Not Used In Contour Plot

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CLIENT	MOBIL OIL AUSTRALIA PTY LTD	
CONSULTANT	YYYY-MM-DD	2/9/2023
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

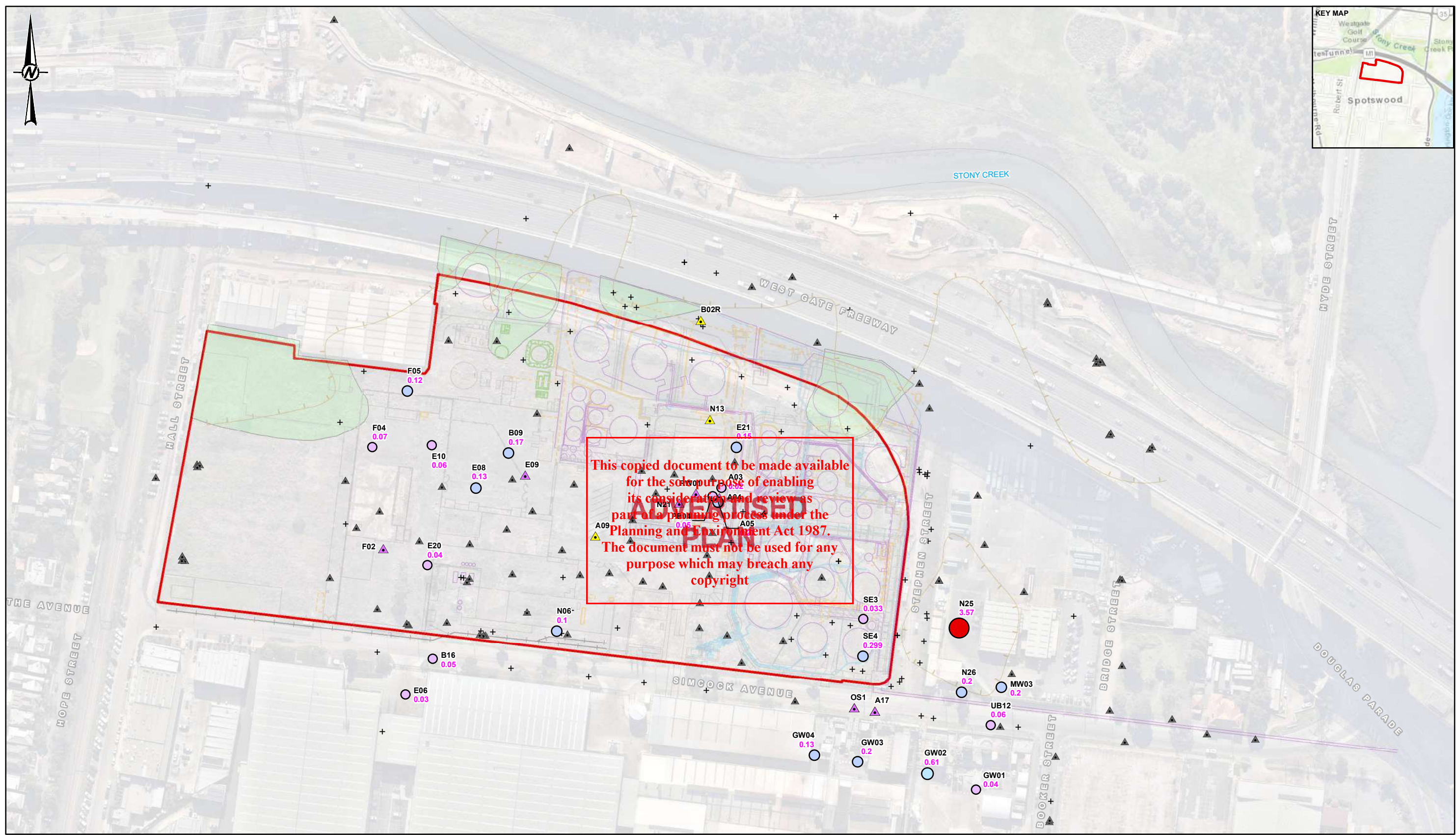
NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
4. INFORMATION ON SEWER LOCATION AND INVERT LEVELS IMMEDIATELY SURROUNDING THE SITE TAKEN FROM THE ENVIRONMENTAL AUDIT REPORT (CARDNO, 2012).
5. INFORMATION ON MAIN TRUNK SEWER LOCATIONS AND INVERT LEVELS PROVIDED BY CITY WEST WATER.

**COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)**

**TITLE
GROUNDWATER CONTOUR PLOT JAN/FEB 2022
UPPER BASALT**

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	538-R	0	2



LEGEND

- Site Boundary
- Former Fuel Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Underground)
- Former Remedial Infrastructure
- Former Foam Line
- Former Quarry
- Former General Infrastructure
- Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
- LNAPL Not Measurable With Interface Probe But Observed With Bailer

- 2.12 Jan/Feb 2022 Apparent LNAPL Thickness (m)
- Indirect Evidence of LNAPL
 - LNAPL Not Encountered At Most Recent Gauging
 - Monitoring Well Decommissioned/Lost/Destroyed

Apparent LNAPL Thickness (m)			
0.0 - 0.1	1.5 - 2.0	3.5 - 4.0	
0.1 - 0.5	2.0 - 2.5	4.0 - 4.5	
0.5 - 1.0	2.5 - 3.0	4.5 - 5.0	
1.0 - 1.5	3.0 - 3.5		

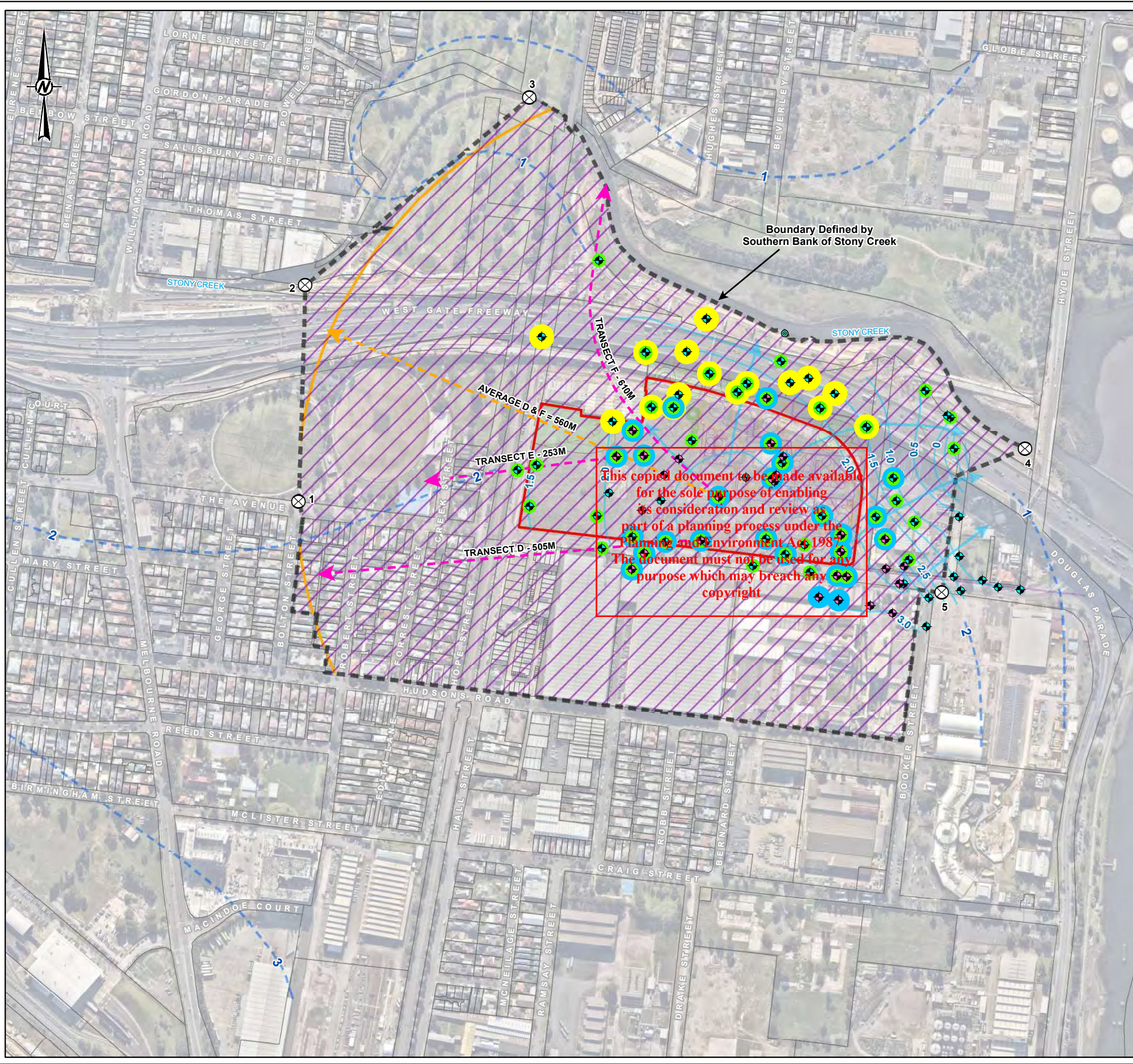


CLIENT		
MOBIL OIL AUSTRALIA PTY LTD		
CONSULTANT		
YYYY-MM-DD	2/9/2023	
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55
2. ALL LNAPL DATA OBTAINED DURING THE JAN/FEB 2022 GME WITH THE EXCEPTION OF SE1-SE4 DATA OBTAINED IN SEP 2022.

REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.

COST TO CLOSURE			
SPOTSWOOD TERMINAL (31XX)			
TITLE			
APPARENT LNAPL THICKNESS 2022			
PROJECT NO.	CONTROL	REV.	FIGURE
1418584	538-R	0	3



- LEGEND**
- Site Boundary
 - Cadastral Boundary
 - Proposed Area of Restricted Groundwater Use
 - Proposed Area of Restricted Groundwater Use Vertex
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Jan/Feb 2022 Upper Basalt Groundwater Elevation Contour (m AHD)
 - Inferred Groundwater Flow Direction
 - Approximate Regional Groundwater Elevation Contour (m AHD) - Westgate Tunnel EES
 - Groundwater Well Sampled in 2020/2022 or with Heavy Metals Exceedance in Most Recent Sample
 - 2020/2022 Surface Water Sampling Location
 - Groundwater Well With Gauged/Indirect Evidence of LNAPL
 - PFAS Result(s) Exceed Extractive Uses Criteria
 - Organics Result(s) Exceed Extractive Uses Criteria
 - Heavy Metal Result(s) Exceed Extractive Uses Criteria
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on site specific transects
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on average distance of Transect D and Transect F in absence of data to north west
 - Extrapolated extent of site derived PFOS exceedances above extractive use criteria to west and north west of the site

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Proposed Area of Restricted Groundwater Use Vertex Coordinates (GDA94 MGA Zone 55)		
Vertex	X	Y
1	313750.0	5811223.1
2	313758.6	5811510.6
3	314055.6	5811758.9
4	314713.5	5811293.5
5	314602.7	5811102.9



- NOTE(S)**
- PROJECTION: GDA 1994 MGA ZONE 55
- REFERENCE(S)**
- AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
 - STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
 - KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

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PROJECT
COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)

TITLE
SUGGESTED EXTENT OF AREA OF RESTRICTED GROUNDWATER USE

CONSULTANT	YYYY-MM-DD	2023-02-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

PROJECT NO. 1418584 CONTROL 538-R REV. 0 FIGURE 4



LEGEND

- Site Boundary
- Former Fuel Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Underground)
- Former Foam Line
- Former Quarry
- Former General Infrastructure
- Well With LNAPL

Sentinel Well

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NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.



CLIENT
MOBIL OIL AUSTRALIA PTY LTD

CONSULTANT	DD/MM/YYYY	09/02/2023
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

wsp GOLDER

COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
WELLS FOR GMP MONITORING - LNAPL

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	538-R	0	5



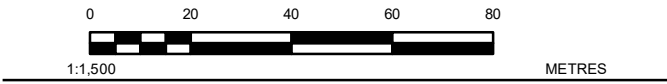
- LEGEND**
- Site Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)

Well for Dissolved Phase Monitoring

ADVERTISED PLAN

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.



CLIENT		
MOBIL OIL AUSTRALIA PTY LTD		
CONSULTANT	DD/MM/YYYY	09/02/2023
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
APPROVED	JMM	

COST TO CLOSURE			
SPOTSWOOD TERMINAL (31XX)			
TITLE			
WELLS FOR GMP MONITORING - DISSOLVED PHASE HYDROCARBONS AND PFAS			
PROJECT NO.	CONTROL	REV.	FIGURE
1418584	538-R	0	6

APPENDIX B

**Communications Plan and Letters
to Offsite Stakeholders**

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Community Consultation Plan - Mobil Spotswood. To be read in conjunction with the Offsite Groundwater Management Plan (1418584-538-R)

Approach:	For stakeholders that do not comprise residential properties or industrial units to the south west of the former Spotswood site, the communication method will be in the form of a mailed registered letter. For industrial units and residential properties to the south west of the site, a letter drop is the proposed communication method so as not to miss any businesses/houses/apartments. This will pick up lessees, however, may not pick up all owners. As Certificates of Titles (CoTs) may not be up to date, the following approach will be adopted: o The letters include a request that lessees forward the information on to the owners/rental property managers if they do not own the property. o As strata rentals are required to display their details on the front of rental properties, during the letter drop, an inspection of each property for strata plaques will be made. Where identified the details will be noted and a copy of the communication mailed to the strata. o If properties are identified as vacant, an inspection for real estate signs will be undertaken, and where present the contact details noted. A copy of the communication will also be mailed to the real estate company. Where no real estate signs are present, inspection of the CoT will also be undertaken to see if any further contact details are provided to that of the property address.
Website:	The communication letters will provide details of an ExxonMobil website that provides further information on the Spotswood site and offsite groundwater impacts. The letters will note that if the reader wishes to find out more detail about the information in the letters, they search for the word 'Spotswood' on www.exxonmobil.com.au. The website may be updated periodically in line with triggers provided in the Offsite Groundwater Management Plan.

Stakeholder	Contact Details (name, address, phone, email, where applicable)	Impacts Beneath Property				Recent Communications to Date	Summary of Final Communication Needs	Communication Method	
		PFAS	LNAPL	Dissolved Phase Hydrocarbons	Metals				
Utilities and Government Bodies									
Hobsons Bay City Council	PO Box 21 Altona VIC 3018 Phone: 1300 179 944 Email: customerservice@hobsonsabay.vic.gov.au	✓	✓	✓	✓	No communication to date that WSP Golder is aware of	Manages smaller roadways/footpaths surrounding the former Spotswood Terminal and Donald McLean Reserve to the west of the former terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
VicTrack	GPO Box 1681 Melbourne VIC 3001 Phone: (03) 9619 1111 Email: customer.service@victrack.com.au	✓			✓	No communication to date that WSP Golder is aware of	Land not occupied. Manage the Werribee Railway Line to the west of the former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
VicRoads - West Gate Bridge	VicRoads Head Office Administration Department of Transport and Planning 60 Denmark Street Kew VIC 3101	✓	✓	✓	✓	Data package issued 2 September 2019 with factual results of 2018/2019 gauging and/or sampling of B03, B19, BG01, E14, E15, F09, F15, LB13, LB14, MB08, MB09, MB10, MB11, P06, Q06, Q07, Q08, UB07, UB08, UB09, UB10, V02 to north of old site boundary (pre WGTP acquisition) (1418584-332-T-Rev0)	Land not occupied. Manage the land in the footprint of the West Gate Bridge to the immediate north of the site over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Greater Western Water (portion of North Yarra Main Sewer at/below watertable)	Locked bag 350 St Albans Road Sunshine VIC 3020 Phone: 131 691 Email: enquiries@citywestwater.com.au	✓				No direct communication to date that WSP Golder is aware of however, Melbourne Water have previously been provided data packages of groundwater gauging and quality for wells along the strip of land between Stony Creek and the northern side of the West Gate Bridge, prior to WGTP taking over management. Data from 2018/2019 for UB03, UB04, UB05, UB06 provided 2 September 2022 (1418584-333-T-Rev0).	Asset owner (sewer). Need to be advised of groundwater status in relation to maintenance and upgrades to deep sewer.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
West Gate Tunnel Project (WGTP) (North of West Gate Bridge, South of West Gate Bridge to northern site boundary, and Stephen Street to east)	Secretary to the Department of Transport Level 36 121 Exhibition Street Melbourne VIC 3000	✓	✓	✓	✓	Reports on soil investigations and groundwater sampling provided to WGTP as part of compulsory acquisition by Mobil. Melbourne Water have previously been provided data packages of groundwater gauging and quality for wells along the strip of land between Stony Creek and the northern side of the West Gate Bridge, prior to WGTP taking over management. Data from 2018/2019 for UB03, UB04, UB05, UB06 provided 2 September 2022 (1418584-333-T-Rev0).	Land not occupied. Manage the land associated with the West Gate Tunnel Project to the immediate north and east of the former Spotswood Terminal, and the land along Stony Creek (previously managed by Melbourne Water) over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Landowners/Lessees									
Glass Gate (formerly OI Glass)	71 Simcock Avenue Spotswood VIC 3015 Phone: - Email: - CoT incorrectly linked to Mobil's site	✓	✓	✓		Following data packages issued to OI Glass: - 2 September 2019 with factual results of 2018/2019 gauging and/or sampling of E06, GW01, GW02, GW03 and GW04 including LNAPL chemistry data for GW01, GW02 and GW04 (1418584-330-T-Rev0) - 14 August 2020 with factual LNAPL baildown test gauging results for GW02 and density and viscosity of LNAPL at GW02 (1418584-399-TM-Rev0)	Proprietor of industrial property to the south of former Spotswood Terminal over which area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Visy Glass (formerly OI Glass)	Visy - Environment, Health and Safety Coordinator 38 Booker Street, Spotswood 3015 Phone: 03 9235 6439	✓	✓	✓			Proprietor of industrial property to the south of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Formerly Socobell OEM Pty Ltd	Secretary to the Department of Transport Level 36 121 Exhibition Street Melbourne VIC 3000	✓		✓	✓	CoT indicates now part of WGTP. No communication to Socobell that WSP Golder is aware of	Proprietor of industrial property to the northwest of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Cubed Projects (rented by Toll)	Business Manager Bill Heath Real Estate Pty Ltd PO Box 1017, Darling VIC 3145 Phone: 0417 139 707	✓	✓	✓		Following data packages issued: - 2 September 2019 with factual results of 2018/2019 gauging and/or sampling of F12, MW02, MW03, MW06, N22, N23, N24, N25, N26, N27, Q05 (1418584-331-T-Rev0) - 14 August 2020 with factual LNAPL baildown test gauging results for N25 and density and viscosity of LNAPL at N25 (1418584-400-TM-Rev0) - 27 August 2020 data extracts for wells on the Cubed Projects site from URS reports ('URS Australia Pty Ltd 2012. Mobil Spotswood Terminal (31XX) Assessment Report' dated 18 May 2012 and 'URS Australia Pty Ltd 2013. Spotswood 31XX – LNAPL Characterisation Memorandum – Updated July 2013' dated 25 October 2013) (1418584-404-T-Rev0) - 15 December 2021 soil vapour results for SVB025/D and SVB045/D from 22 and 23/03/2021 and 19/05/2021 (1418584-479-T-Rev0)	Proprietor of industrial property to the east of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Westgate Golf Club	1 Creek Street Spotswood VIC 3015 Phone: (03) 9391 5261 Email: westgategolfclub@bigpond.com	✓					Manages the land to the west of the former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Emma McLean Kindergarten Daycare Inc.	71 Hope Street Spotswood VIC 3015 Phone: (03) 9391 1415 Email: emma.mclean.kin@kindergarten.vic.gov.au	✓					Proprietor of residential property to the west of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.	Mailed letter (registered mail with copy of tracking number and proof of delivery receipt)	
Proprietor	81 Simcock Avenue Spotswood VIC 3015	✓							
	83 Simcock Avenue Spotswood VIC 3015	✓							
	85 Simcock Avenue Spotswood VIC 3015	✓							
	87 Simcock Avenue Spotswood VIC 3015	✓							
	89 Simcock Avenue Spotswood VIC 3015	✓							
	1/91 Simcock Avenue Spotswood VIC 3015	✓							
	2/91 Simcock Avenue Spotswood VIC 3015	✓							
	3/91 Simcock Avenue Spotswood VIC 3015	✓							
	4/91 Simcock Avenue Spotswood VIC 3015	✓							
	5/91 Simcock Avenue Spotswood VIC 3015	✓							
	6/91 Simcock Avenue Spotswood VIC 3015	✓							
	7/91 Simcock Avenue Spotswood VIC 3015	✓							
	204 Hall Street Spotswood VIC 3015	✓							
	204A Hall Street Spotswood VIC 3015	✓							
	204B Hall Street Spotswood VIC 3015	✓							
	206 Hall Street Spotswood VIC 3015	✓							
	206A Hall Street Spotswood VIC 3015	✓							
	206B Hall Street Spotswood VIC 3015	✓							
	208 Hall Street Spotswood VIC 3015	✓							
	210A Hall Street Spotswood VIC 3015	✓							
	210B Hall Street Spotswood VIC 3015	✓							
	212A Hall Street Spotswood VIC 3015	✓							
	212B Hall Street Spotswood VIC 3015	✓							
	214A Hall Street Spotswood VIC 3015	✓							
	214B Hall Street Spotswood VIC 3015	✓							
	216A Hall Street Spotswood VIC 3015	✓							
	216B Hall Street Spotswood VIC 3015	✓							
	62 Hudsons Road Spotswood VIC 3015	✓							
	50 Hudsons Road Spotswood VIC 3015	✓							
	1/50 Hudsons Road Spotswood VIC 3015	✓							
	2/50 Hudsons Road Spotswood VIC 3015	✓							
	3/50 Hudsons Road Spotswood VIC 3015	✓							
	4/50 Hudsons Road Spotswood VIC 3015	✓							
	5/50 Hudsons Road Spotswood VIC 3015	✓							
	6/50 Hudsons Road Spotswood VIC 3015	✓							
	7/50 Hudsons Road Spotswood VIC 3015	✓							
	8/50 Hudsons Road Spotswood VIC 3015	✓							
	9/50 Hudsons Road Spotswood VIC 3015	✓							
	10/50 Hudsons Road Spotswood VIC 3015	✓							
	11/50 Hudsons Road Spotswood VIC 3015	✓							
	12/50 Hudsons Road Spotswood VIC 3015	✓							
	13/50 Hudsons Road Spotswood VIC 3015	✓							
	14/50 Hudsons Road Spotswood VIC 3015	✓							
	15/50 Hudsons Road Spotswood VIC 3015	✓							
	16/50 Hudsons Road Spotswood VIC 3015	✓							
	17/50 Hudsons Road Spotswood VIC 3015	✓							
18/50 Hudsons Road Spotswood VIC 3015	✓								
19/50 Hudsons Road Spotswood VIC 3015	✓								
20/50 Hudsons Road Spotswood VIC 3015	✓								
21/50 Hudsons Road Spotswood VIC 3015	✓								
22/50 Hudsons Road Spotswood VIC 3015	✓								
Proprietor of commercial property to the southwest of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.								Letter drop to ensure all properties are notified	

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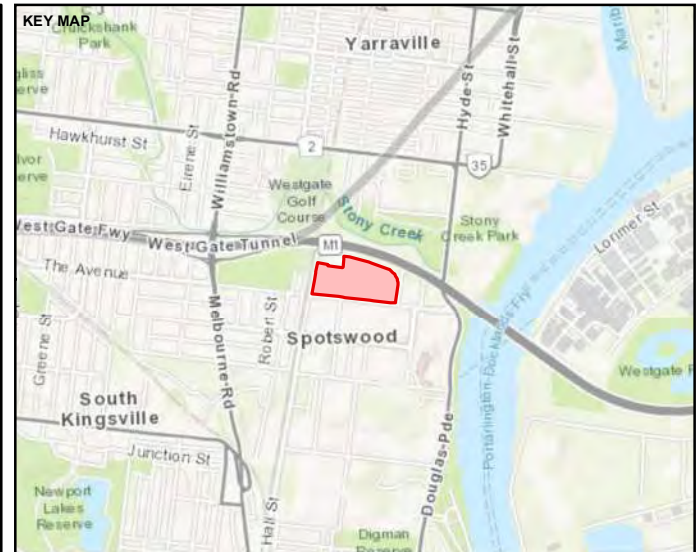
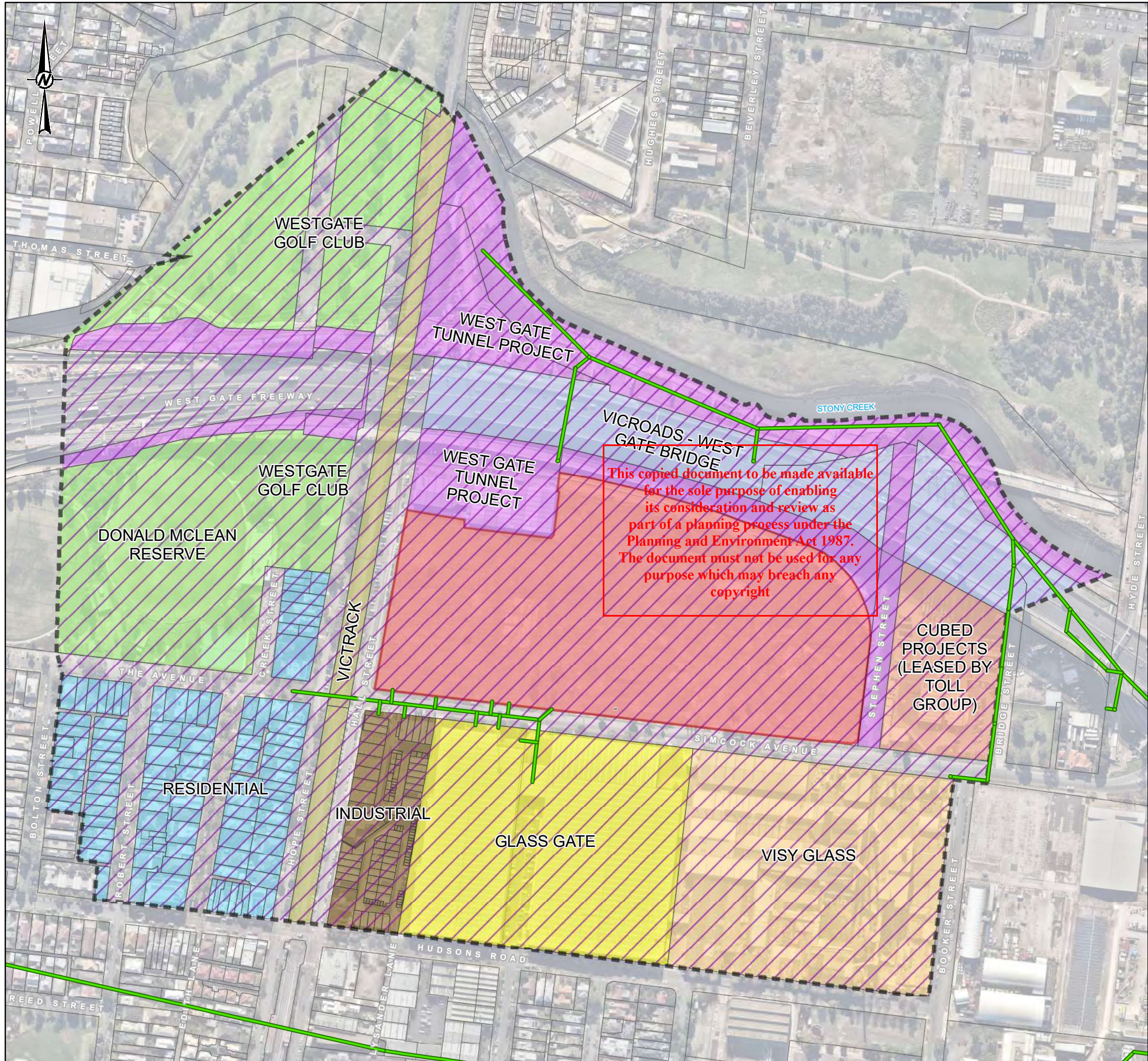
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	copyright	

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Stakeholder	Contact Details (name, address, phone, email, where applicable)	Impacts Beneath Property				Recent Communications to Date	Summary of Final Communication Needs	Communication Method		
		PFAS	LNAPL	Dissolved Phase Hydrocarbons	Metals					
	16 Bolton Street	✓								
	Spotswood VIC 3015									
	18 Bolton Street	✓								
	Spotswood VIC 3015									
	20 Bolton Street	✓								
	Spotswood VIC 3015									
	22 Bolton Street	✓								
	Spotswood VIC 3015									
	2/22 Bolton Street	✓								
	Spotswood VIC 3015									
	3/22 Bolton Street	✓								
	Spotswood VIC 3015									
Resident	24 Bolton Street	✓					Resident of residential property to the west of former Spotswood Terminal over which the area of restricted groundwater use will extend. Need to be advised of groundwater status directly beneath property in relation to restricted extractive uses.			
	Spotswood VIC 3015									
	26 Bolton Street	✓								
	Spotswood VIC 3015									
	73 Hope Street	✓								
	Spotswood VIC 3015									
	75 Hope Street	✓								
	Spotswood VIC 3015									
	77 Hope Street	✓								
	Spotswood VIC 3015									
	79 Hope Street	✓								
	Spotswood VIC 3015									
	81 Hope Street	✓								
	Spotswood VIC 3015									
	83 Hope Street	✓								
	Spotswood VIC 3015									
	2 Creek Street	✓								
	Spotswood VIC 3015									
	2A Creek Street	✓								
	Spotswood VIC 3015									
	2B Creek Street	✓								
	Spotswood VIC 3015									
	6 Creek Street	✓								
	Spotswood VIC 3015									

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- LEGEND**
- Site Boundary
 - Cadastral Boundary
 - Greater Western Water Sewer
 - Proposed Area of Restricted Groundwater Use
- Properties Within Proposed Area of Restricted Groundwater Use**
- Council Land
 - Cubed Projects
 - Glass Gate
 - Visy Glass
 - West Gate Tunnel Project
 - Victrack
 - Industrial
 - Residential
 - Parkland
 - Vicroads - West Gate Bridge

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0 50 100 150 200
1:3,500 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)

TITLE
THIRD PARTIES WITHIN PROPOSED AREA OF RESTRICTED GROUNDWATER USE

CONSULTANT	YYYY-MM-DD	2022-11-28
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

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13 April 2023

To the Property Owner / Occupier

Re: EPA restriction on use of local groundwater

I am writing to advise that Mobil Oil Australia (Mobil) is currently investigating the groundwater conditions close to its former Spotswood Terminal located at 44 – 76 Simcock Avenue, Spotswood. The former Terminal was used as fuel and chemical distribution terminal until 2009. Since then, all infrastructure has been demolished. Investigation and remediation work has been completed under the oversight of the Environment Protection Authority of Victoria (EPA) and its appointed Environmental Auditor. The Environmental Audit Report is expected to be finalised by the end of April 2023 and, subsequently, will be publicly available on the EPA's website.

In line with requirements of the EPA our environmental investigations also seek to understand any potential impacts to surrounding soil and groundwater that might be related to our historical operations. Initial investigations indicate that local groundwater has been impacted, and the Auditor has recommended restricted use of groundwater in the affected area. The enclosed map outlines the area which is subject to this restriction.

The groundwater in the area is naturally at around 8 metres deep and is too salty for human consumption. Additionally, the potential impacts make the groundwater unsuitable for other uses. Based on our searches, there is no registered bore on your property. However, if you do have a bore on your property, the groundwater should not be extracted and used until further notice. The local drinking water at your property, provided by Greater Western Water, is not affected by this issue in any way.

We will continue to assess the situation by testing the groundwater from our current and additional groundwater monitoring wells in the local area. We will advise you as our ongoing investigations progress and when there is a change to the restriction on groundwater use that affects you.

If you are not the owner of the property, please forward this letter to the owner for their awareness. A person who manages or controls the affected property has responsibilities under the Environmental Protection Act. At a minimum:

- 1) If you wish to extract the groundwater, you should test the water and obtain expert advice on the suitability of the water for the intended use or disposal.
- 2) If you wish to develop a basement more than 3 m below ground, an assessment should be undertaken of the vapour risks by a suitably qualified Environmental Scientist.
- 3) If you sell your land/property prior to the area of restricted groundwater use being removed, you must notify future prospective purchasers of the existence of the area of restricted groundwater use.

You can find more information about this matter by visiting our website www.exxonmobil.com.au and searching for 'Spotswood groundwater' or contact us via email at CommunityAnz@exxonmobil.com. You can also obtain further information from the EPA by calling 1300 372 842 or emailing environmental.audit@epa.vic.gov.au.

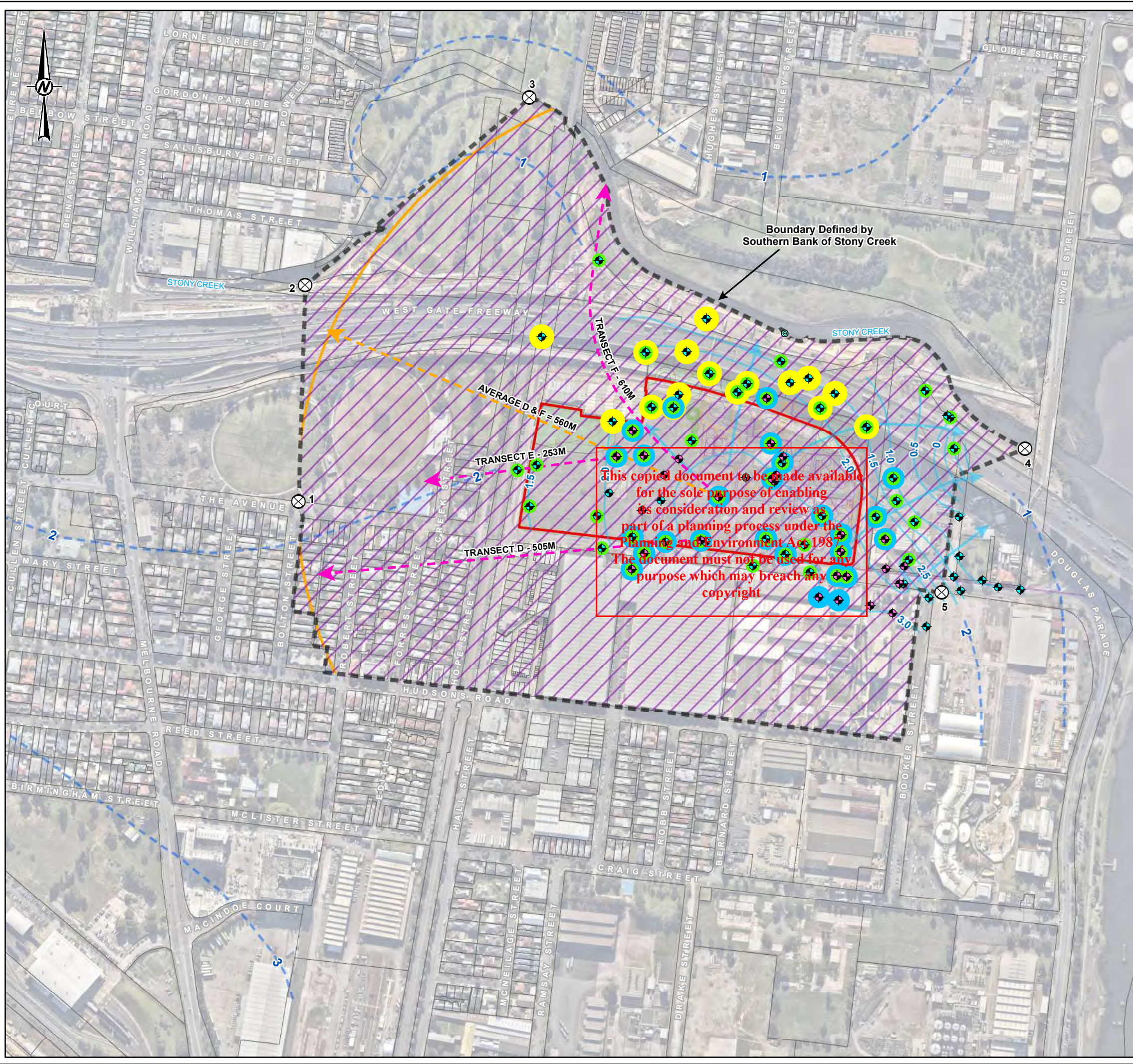
Yours sincerely,

DocuSigned by:

GRAEME J PHILLIPS

Graeme Phillips

Business Manager AP South, E&PS – Environmental Solutions
Mobil Oil Australia



- LEGEND**
- Site Boundary
 - Cadastre Boundary
 - Area of Restricted Groundwater Use
 - Area of Restricted Groundwater Use Vertex
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Jan/Feb 2022 Upper Basalt Groundwater Elevation Contour (m AHD)
 - Inferred Groundwater Flow Direction
 - Approximate Regional Groundwater Elevation Contour (m AHD) - Westgate Tunnel EES
 - Groundwater Well Sampled in 2020/2022 or with Heavy Metals Exceedance in Most Recent Sample
 - 2020/2022 Surface Water Sampling Location
 - Groundwater Well With Gauged/Indirect Evidence of LNAPL
 - PFAS Result(s) Exceed Extractive Uses Criteria
 - Organics Result(s) Exceed Extractive Uses Criteria
 - Heavy Metal Result(s) Exceed Extractive Uses Criteria
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on site specific transects
 - Extrapolated distance to groundwater concentration of PFOS equal to that of 0.07 ug/L (Stock Watering Criteria) based on average distance of Transect D and Transect F in absence of data to north west
 - Extrapolated extent of site derived PFOS exceedances above extractive use criteria to west and north west of the site

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Proposed Area of Restricted Groundwater Use Vertex Coordinates (GDA94 MGA Zone 55)		
Vertex	X	Y
1	313750.0	5811223.1
2	313758.6	5811510.6
3	314055.6	5811758.9
4	314713.5	5811293.5
5	314602.7	5811102.9



- NOTE(S)**
- PROJECTION: GDA 1994 MGA ZONE 55
- REFERENCE(S)**
- AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
 - STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
 - KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)

TITLE
AREA OF RESTRICTED GROUNDWATER USE

CONSULTANT	YYYY-MM-DD	2023-02-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

APPENDIX C

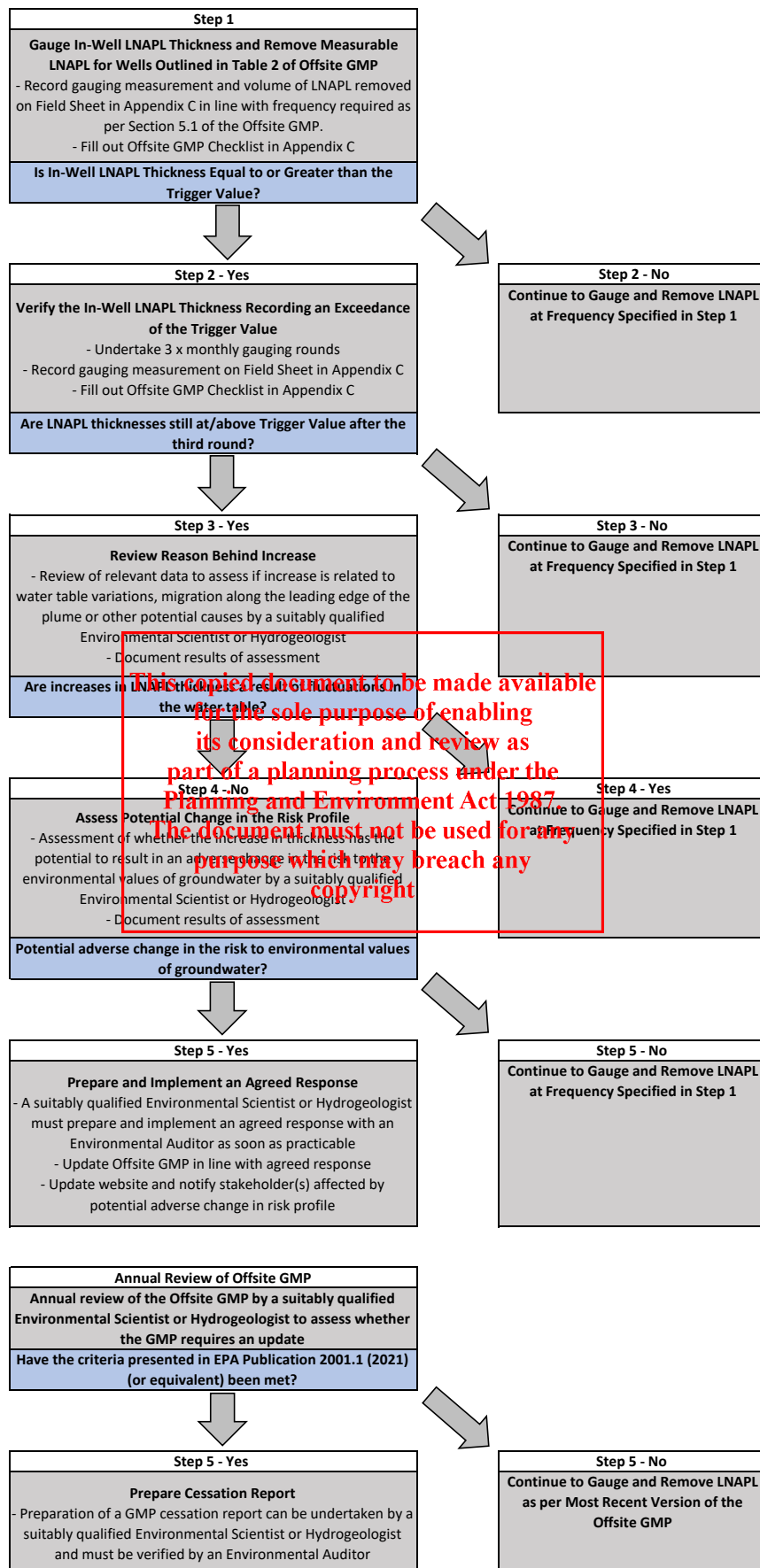
**GMP Flow Chart, Field Sheets
and Checklist**

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Appendix C - Offsite GMP Flowchart - LNAPL

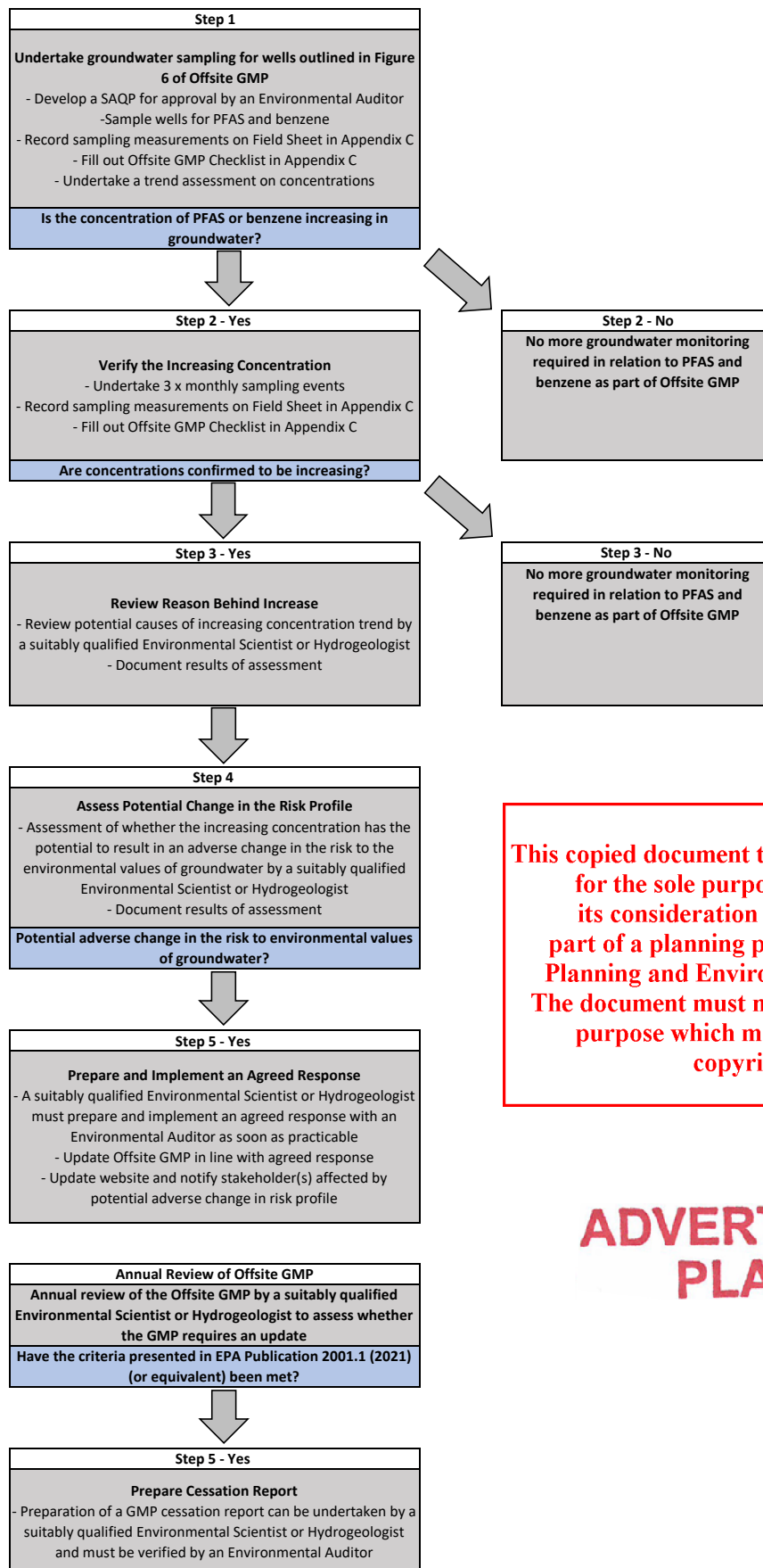
1418584-538-R



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Appendix C - Offsite GMP Flowchart - PFAS and Benzene

1418584-538-R



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Former Spotswood Terminal - GMP Checklist

Person Responsible

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Name:

.....
 ...

Position (if relevant):

.....

Phone Number:

.....

Email:

.....

GMP Actions

Date and Time of Activities

Outcome of Activities

GMP Trigger Met? (Yes/No)

Monthly Gauging and Removal of LNAPL at N25

Activity: Measure depth to LNAPL and depth to groundwater in N25 to monitor LNAPL thickness and confirm that there are no significant increases as outlined in Table 3 of the GMP.

Activity: Remove and collect LNAPL present in N25 to the extent practicable.

Activity: Following LNAPL removal, measure and record the depth to LNAPL and depth to groundwater in the well.

Activity: Dispose of the collected LNAPL and any groundwater removed to a suitably licenced waste facility.

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Activity: Assess whether a reduction in the frequency of LNAPL removal can be undertaken following the process outlined in Section 5.1.1 of the GMP.			
<u>Quarterly Gauging and Removal of LNAPL in all GMP Wells</u> Activity: Measure depth to LNAPL and depth to groundwater in GMP wells to monitor LNAPL thickness and confirm that there are no significant increases as outlined in Table 3 of the GMP. Activity: Remove and collect LNAPL present in all GMP wells recording LNAPL to the extent practicable. Activity: Following LNAPL removal, measure and record the depth to LNAPL and depth to groundwater in the wells where LNAPL was removed. Activity: Dispose of the collected LNAPL and any groundwater removed to a suitably licenced waste facility. Activity: Assess whether a reduction in the frequency of LNAPL removal can be undertaken following the process outlined in Section 5.1.1 of the GMP.			
Implementation of Further Management Activity: If any of the above activities indicate a Trigger has been met, implement further management actions as outlined in Section 5.1.3 of the GMP			
<u>Groundwater Sampling for PFAS and Benzene</u> Activity: Develop a SAQP for approval by an Environmental Auditor associated with sampling of PFAS and benzene in groundwater at the locations presented in Figure 6 of Off-site GMP. The sampling event should occur one year after completion of the Environmental Audit.			

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Activity: Dispose of the purged groundwater to a suitably licenced waste facility. Activity: Undertake a trend assessment on the PFAS and benzene concentrations in groundwater.			
Implementation of Further Management Activity: If the above activities indicate a Trigger has been met (i.e., increasing trend), implement further management actions as outlined in Section 5.2.2 of the GMP.			

Person Responsible

Signature:

Date:

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Appendix C - LNAPL Gauging and Removal Field Sheet - Offsite GMP, Former Spotswood Terminal

1418584-538-R

Well ID	Trigger Value: In-Well LNAPL Thickness (m)	Date	In-Well LNAPL Thickness (m)	Volume of LNAPL Removed (L)	Is In-Well LNAPL Thickness Equal to or Greater than the Trigger Value? If yes refer to Offsite GMP	Comments
N25	4.07					
N22	0					
N24	0					
MW3	0.45					
N26	0.45					
UB12	0.16					
N27	0					
N29	0					
GW01	0.14					
GW02	0.86					
GW03	0.45					
GW04	0.38					
Q01	0					
UB17	0					
B16	0.15					
E06	0.13					
P01	0					

Gauged

By: _____

Signature: _____

This field sheet is to be kept on file as part of the supporting documentation associated with the Offsite GMP monitoring

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Well ID: _____ Date: _____ Time: _____ Sampler: _____

Well maintenance required?: _____

Depth to LNAPL (m BTOC): _____

Depth to Water Table (m BTOC): _____

Depth to Base (m BTOC): _____

Groundwater sampling methodology: _____

[illegible]

QA/QC samples taken?:

Notes: _____

Page ___ of ___ pages

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APPENDIX D

Well Logs

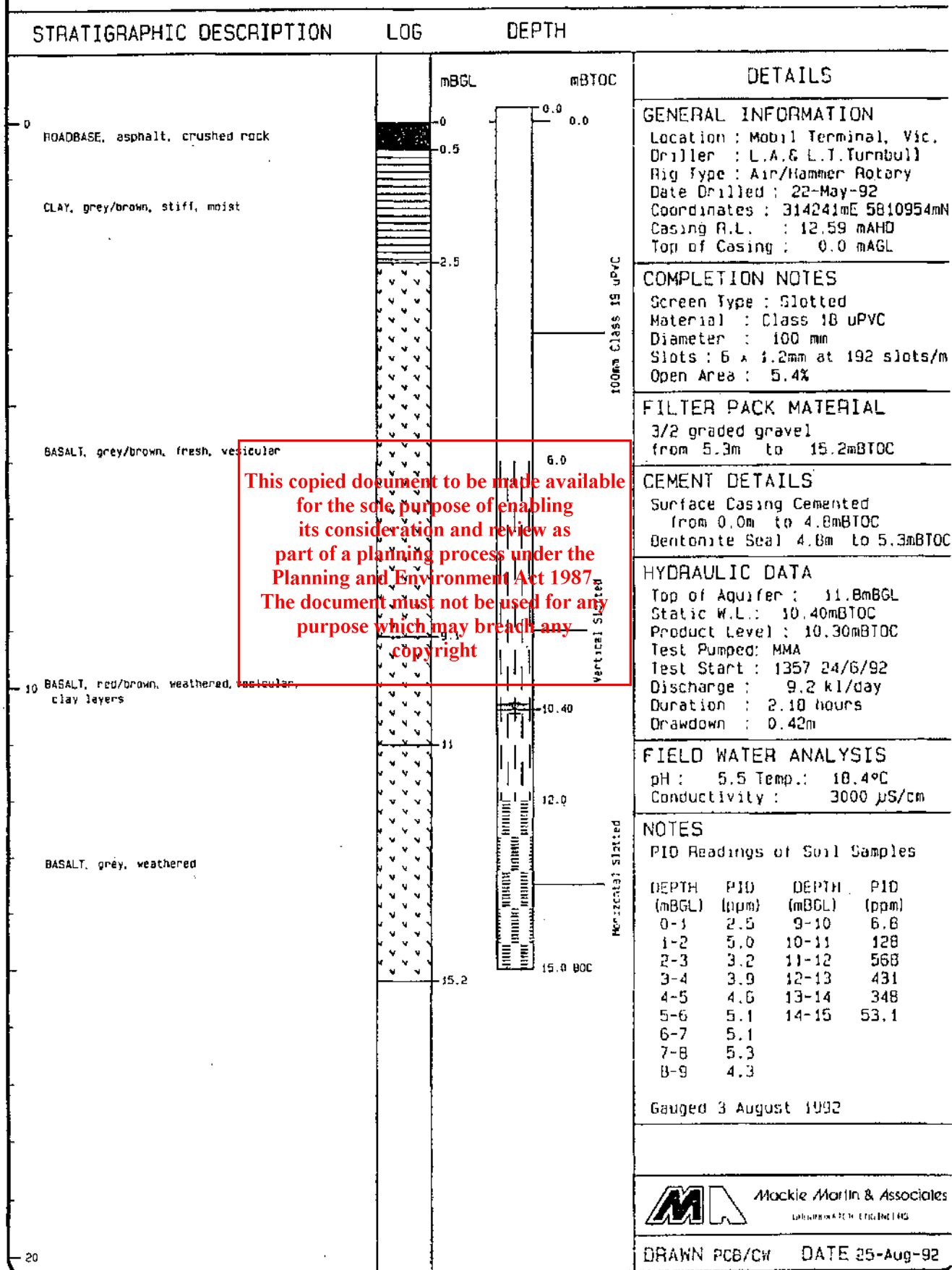
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BORE COMPLETION DETAILS - A18

ESSO SPOTSWOOD TERMINAL - MELBOURNE



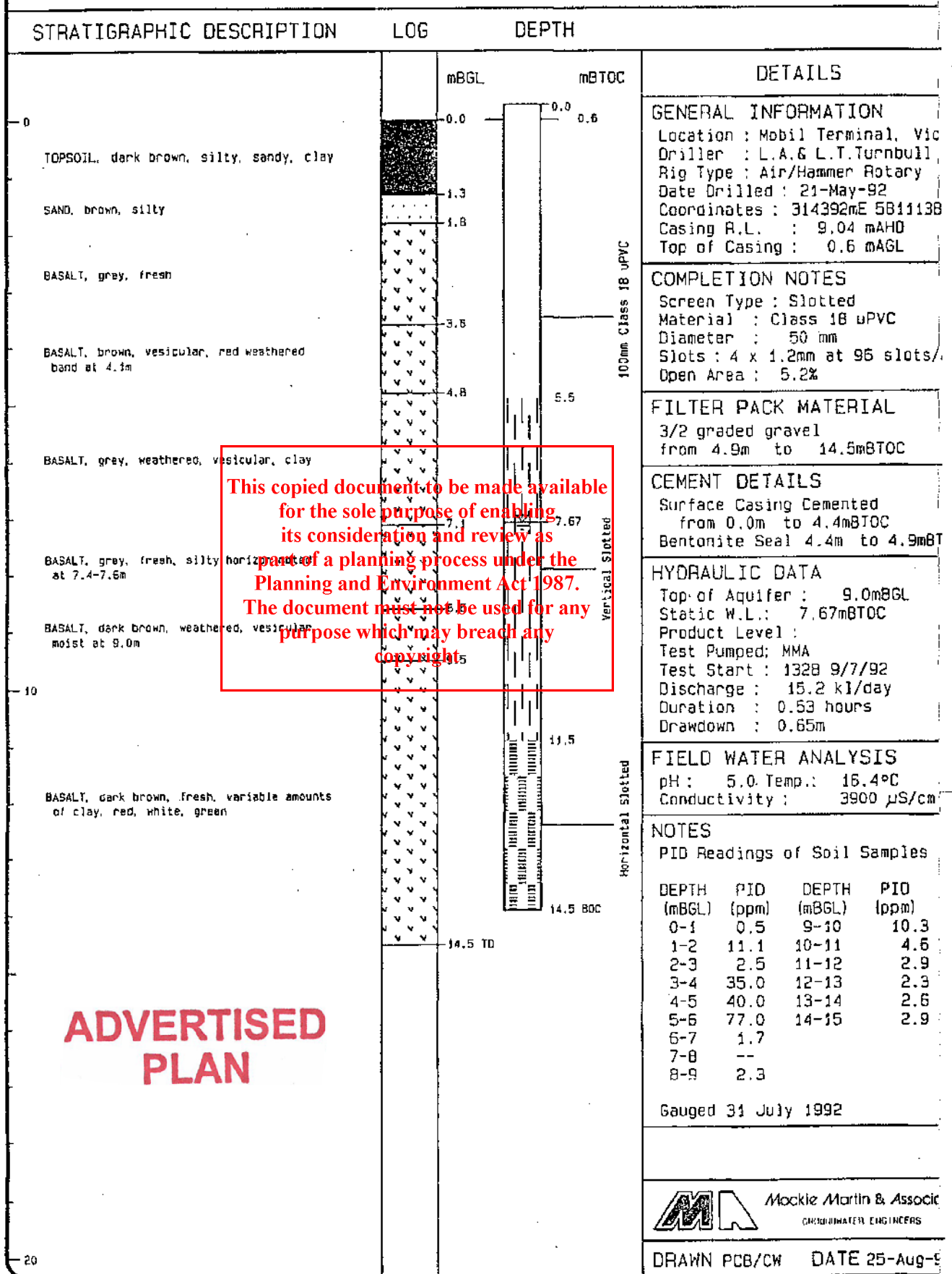
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BORE COMPLETION DETAILS - B16
ESSO SPOTSWOOD TERMINAL - MELBOURNE

STRATIGRAPHIC DESCRIPTION	LOG	DEPTH	DETAILS																																								
ROADBASE, asphalt, crushed rock, gravel	mBGL 0.0 0.3	mBTC 0.0 0.0	GENERAL INFORMATION Location : Mobil Terminal, Vic. Driller : L.A. & L.T. Turnbull Rig Type : Air/Hammer Rotary Date Drilled : 21-May-92 Coordinates : 314097mE 5810971mN Casing R.L. : 13.71 mAHB Top of Casing : 0.0 mAGL																																								
CLAY, brown, stiff, moist																																											
BASALT, red/brown, weathered	4.2		COMPLETION NOTES Screen Type : Slotted Material : Class 18 uPVC Diameter : 50 mm Slots : 4 x 1.2mm at 96 slots/m Open Area : 5.2%																																								
BASALT, grey, weathered, vesicular, clay	5.3	5.7	FILTER PACK MATERIAL 3/2 graded gravel from 4.3m to 14.7mBTC																																								
BASALT, red/brown, weathered	10		CEMENT DETAILS Surface Casing Cemented from 0.0m to 3.4mBTC Bentonite Seal 3.4m to 4.3mBTC																																								
BASALT, grey, weathered, vesicular	14.7	14.7 BOC	HYDRAULIC DATA Top of Aquifer : 10.0mBGL Static W.L. : 11.43mBTC Product Level : Test Pumped: MMA Test Start : 1138 25/6/92 Discharge : 5.4 kl/day Duration : 0.52 hours Drawdown : 0.1m																																								
			FIELD WATER ANALYSIS pH : 5.7 Temp. : 19.2°C Conductivity : 1500 µS/cm																																								
			NOTES PID Readings of Soil Samples																																								
			<table border="1"> <thead> <tr> <th>DEPTH (mBGL)</th> <th>PID (ppm)</th> <th>DEPTH (mBGL)</th> <th>PID (ppm)</th> </tr> </thead> <tbody> <tr> <td>0-1</td> <td>1.6</td> <td>9-10</td> <td>2.2</td> </tr> <tr> <td>1-2</td> <td>2.2</td> <td>10-11</td> <td>2.4</td> </tr> <tr> <td>2-3</td> <td>2.3</td> <td>11-12</td> <td>2.7</td> </tr> <tr> <td>3-4</td> <td>2.4</td> <td>12-13</td> <td>13.4</td> </tr> <tr> <td>4-5</td> <td>2.0</td> <td>13-14</td> <td>29.4</td> </tr> <tr> <td>5-6</td> <td>2.0</td> <td>14-15</td> <td>36.7</td> </tr> <tr> <td>6-7</td> <td>2.2</td> <td></td> <td></td> </tr> <tr> <td>7-8</td> <td>2.3</td> <td></td> <td></td> </tr> <tr> <td>8-9</td> <td>2.2</td> <td></td> <td></td> </tr> </tbody> </table>	DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)	0-1	1.6	9-10	2.2	1-2	2.2	10-11	2.4	2-3	2.3	11-12	2.7	3-4	2.4	12-13	13.4	4-5	2.0	13-14	29.4	5-6	2.0	14-15	36.7	6-7	2.2			7-8	2.3			8-9	2.2		
DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)																																								
0-1	1.6	9-10	2.2																																								
1-2	2.2	10-11	2.4																																								
2-3	2.3	11-12	2.7																																								
3-4	2.4	12-13	13.4																																								
4-5	2.0	13-14	29.4																																								
5-6	2.0	14-15	36.7																																								
6-7	2.2																																										
7-8	2.3																																										
8-9	2.2																																										
			Gauged 3 August 1992																																								
			 Mackie Marlin & Associates WATERWATER ENGINEERS																																								
			DRAWN PCB/CW DATE 25-Aug-92																																								

BORE COMPLETION DETAILS - B19

ESSO SPOTSWOOD TERMINAL - MELBOURNE



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BORE COMPLETION DETAILS - E6

ESSO SPOTSWOOD TERMINAL - MELBOURNE

STRATIGRAPHIC DESCRIPTION	LOG	DEPTH	DETAILS																																								
0 BITUMEN,	mbGL	mbTOC	GENERAL INFORMATION Location : Mobil Terminal, Vic. Driller : L.A. & L.T. Turnbull Rig Type : Air/Hammer Rotary Date Drilled : 17-Jan-95 Coordinates : -----mE -----mN Casing R.L. : 14.06 mAHQ Top of Casing : 0.0 mAGL																																								
CLAY, black, moist, no odour	0.0 0.2	0.0 0.3	COMPLETION NOTES Screen Type : Slotted Material : Class 12 uPVC Diameter : 100 mm Slots : 5 x 1.2mm at 10mm centres Open Area : 5.2%																																								
CLAY, grey, moist, no odour, buggy	2	300mm ID Steel	FILTER PACK MATERIAL 5/3 graded gravel from 5.4m to 18.5mBTOC																																								
BASALT, grey/brown, dry, vesicular, weathered, no odour	4	100mm Class 12 uPVC	CEMENT DETAILS Surface Casing Cemented from 0.0m to 4.5mBTOC Bentonite Seal 4.5m to 5.4mBTOC																																								
BASALT, red/brown, weathered to clays, moist, no odour	8	5.0	HYDRAULIC DATA Top of Aquifer : 12.4mBGL Static W.L. : 12.22mBTOC Product Level : 12.21mBTOC Test Pumped: Test Start : Discharge : Duration : Drawdown :																																								
10 BASALT, grey, vesicular, dry, no odour	12.5	12.0 12.22	FIELD WATER ANALYSIS pH : Temp.: Conductivity :																																								
BASALT, grey, wet, strong odour	18.5 TD	18.0 BOC	NOTES PID Readings of Soil Samples																																								
			<table> <thead> <tr> <th>DEPTH (mBGL)</th><th>PID (ppm)</th><th>DEPTH (mBGL)</th><th>PID (ppm)</th></tr> </thead> <tbody> <tr><td>1.0</td><td>12.8</td><td>10.0</td><td>21.4</td></tr> <tr><td>2.0</td><td>14.1</td><td>11.0</td><td>22.7</td></tr> <tr><td>3.0</td><td>10.2</td><td>12.0</td><td>356</td></tr> <tr><td>4.0</td><td>19.2</td><td>13.0</td><td>156</td></tr> <tr><td>5.0</td><td>18.3</td><td>14.0</td><td>157</td></tr> <tr><td>6.0</td><td>8.0</td><td>15.0</td><td>63.6</td></tr> <tr><td>7.0</td><td>2.5</td><td>16.0</td><td>35.0</td></tr> <tr><td>8.0</td><td>1.7</td><td>17.0</td><td>25.8</td></tr> <tr><td>9.0</td><td>1.3</td><td>18.0</td><td>66.6</td></tr> </tbody> </table>	DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)	1.0	12.8	10.0	21.4	2.0	14.1	11.0	22.7	3.0	10.2	12.0	356	4.0	19.2	13.0	156	5.0	18.3	14.0	157	6.0	8.0	15.0	63.6	7.0	2.5	16.0	35.0	8.0	1.7	17.0	25.8	9.0	1.3	18.0	66.6
DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)																																								
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6.0	8.0	15.0	63.6																																								
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8.0	1.7	17.0	25.8																																								
9.0	1.3	18.0	66.6																																								
			RUST PPK Pty Ltd																																								
			DRAWN RL DATE 21-Feb-95																																								

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ESSO SPOTSWOOD DETAILS - MELBOURNE

STRATIGRAPHIC DESCRIPTION

LOG

DEPTH

BACKFILL, black ash, sand and bricks

BASALT, grey, weathered, dry, no odour

BASALT, gray, wet, weathered

ADVERTISED PLAN

DETAILS

GENERAL INFORMATION
Location : Mobil Terminal, Vic.
Driller : L.A. & L.T. Turnbull
Rig Type : Air/Hammer Rotary
Date Drilled : 20-Dec-94
Coordinates : -----mE -----mN
Casing R.L. : 8.41 mAHQ
Top of Casing : 0.5 mAGL

COMPLETION NOTES
Screen Type : Slotted
Material : Class 12 uPVC
Diameter : 100 mm
Slots : 5 x 1.2mm at 10mm centres
Open Area : 5.2%

FILTER PACK MATERIAL
6/3 graded gravel
from 5.0m to 15.5mBTC

CEMENT DETAILS
Surface Casing Cemented
from 0.0m to 4.2mBTC
Bentonite Seal 4.2m to 5.0mBTC

DRAULIC DATA
Top of Aquifer : 7.8mBGL
Static W.L. : 8.29mBTC
Product Level :
Test Pumped:
Test Start :
Discharge :
Duration :
Drawdown :

FIELD WATER ANALYSIS
pH : Temp.:
Conductivity :

NOTES
PID Readings of Soil Samples

DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)
1.0	0.2	9.0	9.8
2.0	19.9	10.0	10.4
3.0	30.3	11.0	2.1
4.0	4.0	12.0	0.0
5.0	0.3	13.0	0.0
6.0	0.2	14.0	0.0
7.0	0.0	15.0	0.0
8.0	125		

RUST PPK Pty Ltd

DRAWN RL DATE 22-Feb-95

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Bore Log

Bore ID: GW1	Date: 19/4/00	Page 1 of 2
Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling method: trowel
Logged: NM	Checked: MM	

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
					Concrete (150 mm)
0.0	0	GW1/0.6			
1.0	0	GW1/1.0			Silty clay, dark grey, moderate plasticity, moist, no non soil odor
2.0	0	GW1/2.0			
3.0	0	GW1/3.0			
4.0	0	GW1/4.0			
5.0	0	GW1/5.0			
6.0	0	GW1/6.0			
7.0	35	GW1/7.0			Fractured basalt, no non soil odor
8.0	68	GW1/8.0			
9.0	108	GW1/9.0			Fractured basalt, slight fuel odor

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PLAN**

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Bore Log

Bore ID: GW1	Date: 19/4/00	Page 2 of 2
--------------	---------------	-------------

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
10.0	140	GW1/10.0			
11.0	132	GW1/11.0			
12.0					
13.0					
14.0					
15.0					Fractured basalt, water, fuel odor
16.0					Bore terminated at required depth
17.0					
18.0					

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ADVERTISED PLAN

Bore Log

Bore ID: GW2	Date: 19/4/00	Page 1 of 2
--------------	---------------	-------------

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling method:
Logged: NM	Checked: MM	

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
					Concrete (150 mm)
					Fill: crushed rock, no non soil odor (100 mm)
1.0	0	GW2/1.0			
2.0	0	GW2/2.0			Silty clay, dark grey, moderate plasticity, moist, no non soil odor
3.0	0	GW2/3.0			
4.0	0	GW2/4.0			
5.0	0	GW2/5.0			
6.0	0	GW2/6.0			
7.0	5	GW2/7.0			
8.0	23	GW2/8.0			Fractured basalt, no non soil odor
9.0	56	GW2/9.0			

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ADVERTISED PLAN

Bore Log

Bore ID: GW2	Date: 19/4/00	Page 2 of 2
--------------	---------------	-------------

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
10.0	68	GW2/10.0			Fractured basalt, fuel odor
11.0	56	GW2/11.0			This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright
12.0					
13.0					
14.0					
15.0					
15.0					Fractured basalt, water, fuel odor
16.0					Bore terminated at required depth
17.0					
18.0					

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Bore Log

Bore ID: GW3 Date: 20/4/00 Page 1 of 2

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
					Concrete (100 mm)
					Fill: crushed rock, grey, moist, no non soil odor
1.0	0	GW3/1.0			
2.0	0	GW3/2.0			
					Silty clay, grey light brown, moderate plasticity, moist, no non soil odor
3.0	0	GW3/3.0			
4.0	0	GW3/4.0			
5.0	0	GW3/5.0			
6.0	0	GW3/6.0			
7.0	0	GW3/7.0			
8.0	0	GW3/8.0			
					Fractured basalt, no non soil odor
9.0	35	GW3/9.0			

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ADVERTISED PLAN

Bore Log

Bore ID: GW3	Date: 20/4/00	Page 2 of 2
--------------	---------------	-------------

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
10.0	150	GW3/10.0			Fractured basalt, fuel odor
11.0	80	GW3/11.0			
12.0					
13.0					
14.0					
15.0					Fractured basalt, water fuel odor
16.0					Bore terminated at required depth
17.0					
18.0					

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Bore Log

Bore ID: GW4	Date: 20/4/00	Page 1 of 2
--------------	---------------	-------------

Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
					Concrete (150 mm)
					Fill: crushed rock (50 mm)
1.0	0	GW4/1.0			
2.0	0	GW4/2.0			Silty clay, dark grey, moderate plasticity, moist, no non soil odor
3.0	0	GW4/3.0			
4.0	0	GW4/4.0			
5.0	0	GW4/5.0			
6.0	0	GW4/6.0			
7.0	0	GW4/7.0			
8.0	0	GW4/8.0			
9.0	0	GW4/9.0			
					Fractured basalt, no non soil odor

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Bore Log

Bore ID: GW4	Date: 20/4/00	Page 2 of 2
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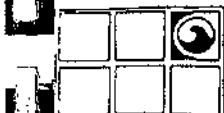
Client: ACI	Site: Spotswood	Job no: 0042b
Drill Co: Aqua Drilling	Driller: Scot Barnes	Auger: Down hole hammer
Depth: 15.0 m	Diameter: 150 mm	Sampling
Logged: NM	Checked: MM	method:

Well Data

Top of casing: m	Initial water level: m	Static water level: m
Screen length: 10.0 m	Diameter: 100 mm	Material: class 12 uPVC
Casing length: 5.0 m	Diameter: 100 mm	Material: class 12 uPVC

Depth (m)	PID (ppm)	Sample ID	SWL	Log	Description
10.0	68	GW4/10.0			Fractured basalt, fuel odor
11.0	42	GW4/11.0			This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright
12.0					
13.0					
14.0					
15.0					
15.0					Fractured basalt, water, fuel odor
16.0					Bore terminated at required depth
17.0					
18.0					

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GROUNDWATER TECHNOLOGY

Well Number MW 2

Drilling Log

Project ESSO SPOTSWOOD Owner ESSO AUSTRALIA LTD.
Location SIMCOCK AVE. Project Number 920-001-5571
Date Drilled 8/10/90 Total Depth of Hole 15 Diameter 150
Surface Elevation _____ Water Level, Initial NA 24-hrs. _____
Screen: Dia. 50mm Length 3m Slot Size _____
Casing: Dia. 50mm Length 12m Type _____
Drilling Company L.A. TURNBULL Drilling Method AIR HAMMER
Driller GREG GROWDER Log by ALEX MIKOV

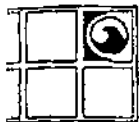
Sketch Map

Notes

Depth (Metres)	Well Construction	V.O.C. Notes (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Colour, Texture, Structures)
0					Concrete Fill
1					Clay/Dark Black
2					Light Clay
3					Light Clay/Weathered Basalt
4					Light Clay/Weathered Basalt Chips
5					Fresh Rock
6					Basalt Redish in Colour
7					Basalt/Red in Colour
8					Moist Basalt Chips
9					Darker Basalt
10					Basalt
11					Clay/Dark
12					Clay/Dark
13					Clay/Dark

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GROUNDWATER
TECHNOLOGY

ADVERTISED PLAN

Well Number MW 3

Drilling Log

Site ESSO SPOTSWOOD Owner ESSO AUSTRALIA LTD.,
Location SIMCOCK AVE., Project Number 920-001-5571
Drilled 9/10/90 Total Depth of Hole 9.9 Diameter 150
Face Elevation _____ Water Level, Initial 7.6 24-hrs. _____
Screen Dia. 50mm Length 3m Slot Size _____
Pipe Dia. 50mm Length 7m Type PVC
Drilling Company L.A. TURNBULL Drilling Method AIR HAMMER
Driller GREG GROWDER Log by ALEX MIKOV

Sketch Map

Notes

Depth (metres)	Well Construction	V.O.C. Notes (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Colour, Texture, Structures)
0					Fill: Glass/Brick/Clay
1					
2					Weathered Rock/Fill/Glass
3					
4					Rock/Basalt
5					
6					
7		7.2			Odour
8		7.6			Water
9					
10		9.9			Hole End
11					
12					

ESSO SPOTSWOOD TERMINAL - MELBOURNE

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ESSO SPOTSWOOD TERMINAL - MELBOURNE

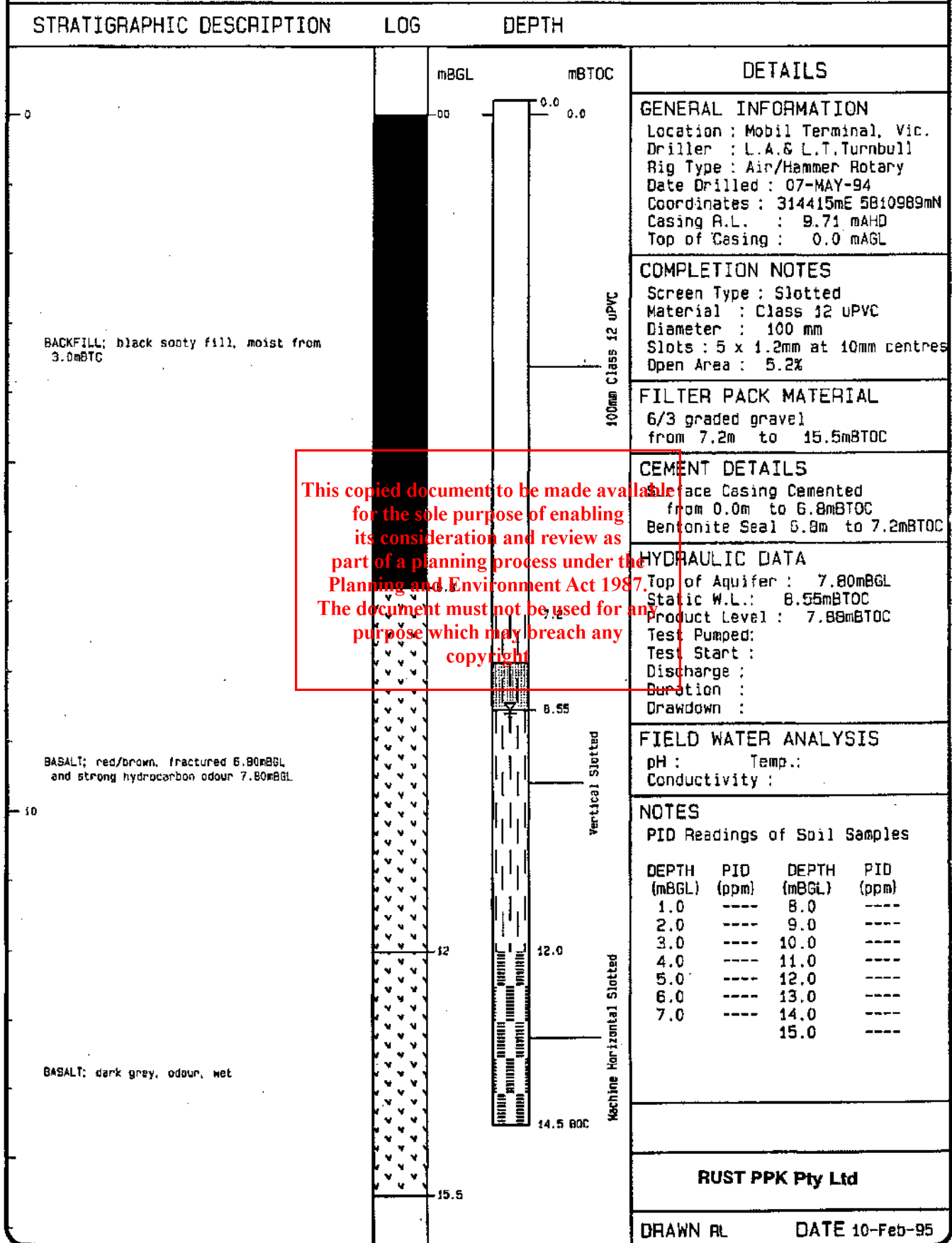
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BORE COMPLETION DETAILS - N25

ESSO SPOTSWOOD TERMINAL - MELBOURNE



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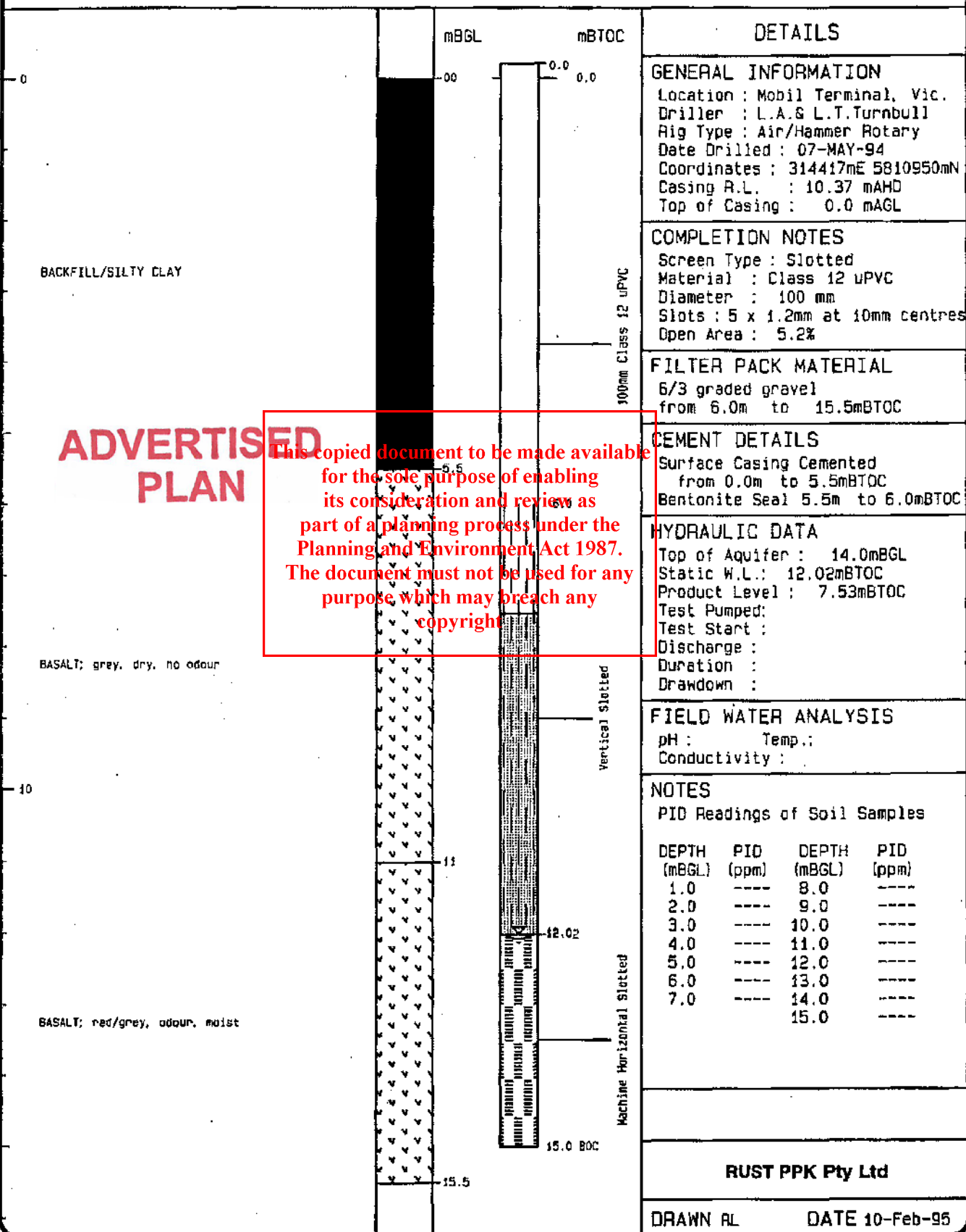
BORE COMPLETION DETAILS - N26

ESSO SPOTSWOOD TERMINAL - MELBOURNE

STRATIGRAPHIC DESCRIPTION

LOG

DEPTH



DETAILS

GENERAL INFORMATION

Location : Mobil Terminal, Vic.
Driller : L.A. & L.T. Turnbull
Rig Type : Air/Hammer Rotary
Date Drilled : 07-MAY-94
Coordinates : 314417mE 5810950mN
Casing R.L. : 10.37 mAH
Top of Casing : 0.0 mAGL

COMPLETION NOTES

Screen Type : Slotted
Material : Class 12 uPVC
Diameter : 100 mm
Slots : 5 x 1.2mm at 10mm centres
Open Area : 5.2%

FILTER PACK MATERIAL

6/3 graded gravel
from 6.0m to 15.5mBTOC

CEMENT DETAILS

Surface Casing Cemented
from 0.0m to 5.5mBTOC
Bentonite Seal 5.5m to 6.0mBTOC

HYDRAULIC DATA

Top of Aquifer : 14.0mBGL
Static W.L. : 12.02mBTOC
Product Level : 7.53mBTOC
Test Pumped :
Test Start :
Discharge :
Duration :
Drawdown :

FIELD WATER ANALYSIS

pH : Temp. :
Conductivity :

NOTES

PID Readings of Soil Samples

DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)
1.0	----	8.0	----
2.0	----	9.0	----
3.0	----	10.0	----
4.0	----	11.0	----
5.0	----	12.0	----
6.0	----	13.0	----
7.0	----	14.0	----
		15.0	----

RUST PPK Pty Ltd

DRAWN RL

DATE 10-Feb-95

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ADVERTISED PLAN

BORE COMPLETION DETAILS - N27

ESSO SPOTSWOOD TERMINAL - MELBOURNE

STRATIGRAPHIC DESCRIPTION	LOG	DEPTH	DETAILS																																				
0 TOPSOIL: silty CONCRETE: BACKFILL: dry, no odour BASALT: grey/brown, weathered, moist, no odour BASALT: grey, dry, odour BASALT: grey, wet, strong odour	mBGL 0.0 0.2 0.6 1.5 100mm Class 12 uPVC Vertical Slotted Machine Horizontal Slotted 15.0 BOC 15.5 TD	mBTC 0.0 0.0 8.15 12.0 15.0	GENERAL INFORMATION Location : Mobil Terminal, Vic. Driller : L.A. & L.T. Turnbull Rig Type : Air/Hammer Rotary Date Drilled : 19-April-9 Coordinates : mE mN Casing R.L. : 9.68 mABD Top of Casing : 0.0 mAGL COMPLETION NOTES Screen Type : Slotted Material : Class 12 uPVC Diameter : 100 mm Slots : 5 x 1.2mm at 10mm centres Open Area : 5.2% FILTER PACK MATERIAL 6/3 graded gravel from 5.2m to 15.2mBTC CEMENT DETAILS Surface Casing Cemented from 0.0m to 4.0mBTC Bentonite Seal 4.0m to 5.2mBTC HYDRAULIC DATA Top of Aquifer : 10.0mBGL Static W.L. : 8.15 mBTC Product Level : 8.11 mBTC Test Pumped: Test Start : Discharge : Duration : Drawdown : FIELD WATER ANALYSIS pH : Temp.: Conductivity : NOTES PID Readings of Soil Samples <table> <thead> <tr> <th>DEPTH (mBGL)</th><th>PID (ppm)</th><th>DEPTH (mBGL)</th><th>PID (ppm)</th></tr> </thead> <tbody> <tr> <td>1.0</td><td>32.6</td><td>8.0</td><td>1083</td></tr> <tr> <td>2.0</td><td>1.2</td><td>9.0</td><td>680</td></tr> <tr> <td>3.0</td><td>1.4</td><td>10.0</td><td>172</td></tr> <tr> <td>4.0</td><td>2.6</td><td>11.0</td><td>133</td></tr> <tr> <td>5.0</td><td>2.1</td><td>12.0</td><td>931</td></tr> <tr> <td>6.0</td><td>7.0</td><td>13.0</td><td>261</td></tr> <tr> <td>7.0</td><td>294</td><td>14.0</td><td>525</td></tr> <tr> <td></td><td></td><td>15.0</td><td>44.6</td></tr> </tbody> </table> RUST PPK Pty Ltd DRAWN RL DATE 13-Feb-95	DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)	1.0	32.6	8.0	1083	2.0	1.2	9.0	680	3.0	1.4	10.0	172	4.0	2.6	11.0	133	5.0	2.1	12.0	931	6.0	7.0	13.0	261	7.0	294	14.0	525			15.0	44.6
DEPTH (mBGL)	PID (ppm)	DEPTH (mBGL)	PID (ppm)																																				
1.0	32.6	8.0	1083																																				
2.0	1.2	9.0	680																																				
3.0	1.4	10.0	172																																				
4.0	2.6	11.0	133																																				
5.0	2.1	12.0	931																																				
6.0	7.0	13.0	261																																				
7.0	294	14.0	525																																				
		15.0	44.6																																				

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BORE COMPLETION DETAILS - N29 ESSO SPOTSWOOD TERMINAL - MELBOURNE

STRATIGRAPHIC DESCRIPTION	LOG	DEPTH	DETAILS
	mBGL	mBTC	
0	0.0	0.0	GENERAL INFORMATION Location : Mobil Terminal, Vic. Driller : L.A. & L.T. Turnbull Rig Type : Air/Hammer Rotary Date Drilled : 29-April-9 Coordinates : mE mN Casing R.L. : mAH Top of Casing : 0.0 mAGL
BACKFILL: black silt, gravel			COMPLETION NOTES Screen Type : Slotted Material : Class 12 uPVC Diameter : 100 mm Slots : 5 x 1.2mm at 10mm centres Open Area : 5.2%
SILTY CLAY: moist, no odour	1.4		FILTER PACK MATERIAL 6/3 graded gravel from 4.7m to 15.0mBTC
		100mm Class 12 uPVC	CEMENT DETAILS Surface Casing Cemented from 0.0m to 3.15mBTC Bentonite Seal 3.15m to 4.7mBTC
BASALT: grey, dry, no odour			HYDRAULIC DATA Top of Aquifer : 8.1mBGL Static W.L. : 11.54mBTC Product Level : 6.83 mBTC Test Pumped: Test Start : Discharge : Duration : Drawdown :
	6.0		
BASALT: grey, moist, odour	8.1		
BASALT: grey, wet, strong odour			FIELD WATER ANALYSIS pH : Temp.: Conductivity :
	8.8		NOTES PID Readings of Soil Samples
10			
BASALT: red/brown, wet, odour, sheen			
	11.5	11.54	
		12.0	
BASALT: brown, strong odour, wet			
	14		
BASALT: grey/brown, orange clays, moderate odour, wet			
	15	15.0 BDC	
			RUST PPK Pty Ltd
			DRAWN RL DATE 13-Feb-95

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Vertical Slotted

Machine Horizontal Slotted

BORE COMPLETION DETAILS - P1
ESSO SPOTSWOOD TERMINAL

STRATIGRAPHIC DESCRIPTION	LOG	DEPTH
CLAY: grey, globular, dry. No odour.	mBGL 0.0 Class 12 uPVC 18.0 BOC	mBTC 0.0 H Vertical Slotted 11.91 H Horizontal Slotted 18.0 BOC
CLAY: red, moist. No odour.		
BASALT: wet. No odour.		
BASALT: red, wet. No odour.		
BASALT: gray, wet. No odour.		

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DETAILS

GENERAL INFORMATION
 Location : Mobil Terminal, Vic.
 Driller : L.A.&L.T.Turnbull
 Rig Type : Air/Hammer Rotary
 Date Drilled : 2-May-95
 Coordinates : mE mn
 Casing R.L. : mAHD
 Top of Casing : 0.0 MAGL

COMPLETION NOTES
 Screen Type : Slotted
 Material : Class 12 uPVC
 Diameter : 100 mm
 Slots : 5 x 1.2mm at 10mm centres
 Open Area : 5.2%

FILTER PACK MATERIAL
 6/3 graded gravel from 6.1m to 18.0mbTOC

CEMENT DETAILS
 Surface Casing Cemented from 0.0m to 5.5mbTOC
 Bentonite Seal 5.5m to 6.1mbTOC

HYDRAULIC DATA
 Top of Aquifer :
 Static W.L.: 11.91mbTOC
 Product Level :
 Test Pumped:
 Test Start :
 Discharge :
 Duration :
 Drawdown :

FIELD WATER ANALYSIS
 pH : Temp.: Conductivity :

NOTES
 PID Readings of Soil Samples

DEPTH [mBGL]	PID (ppm)	DEPTH [mBGL]	PID (ppm)
0-1	0.0	9-10	2.1
1-2	0.0	10-11	1.5
2-3	0.0	11-12	1.6
3-4	0.0	12-13	2.0
4-5	0.0	13-14	1.3
5-6	0.7	14-15	1.6
6-7	1.5	15-16	0.4
7-8	1.5	16-17	1.1
8-9	2.1	17-18	0.2

RUST PPK Pty Ltd

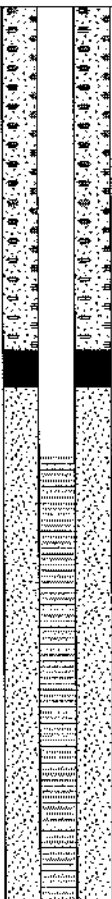
DRAWN VH
DATE 22-Jun-95

Q1

Spotswood

2130244a

Date Drilled :	13/5/02	BCL Number :	
Drilling Contractor :	Statewide	Top Of Casing Elevation :	
Drill Method :	Auger, RAB	Depth Water Encountered :	
Drilled Diameter :	100 mm	Static Water Level :	
Logged By :	SPM	Casing Diameter :	

Graphic Log	Lithology Description		Depth (mBGL)	Sample Method	Sample ID	PID (ppmV)	Completion
	Asphalt	Asphalt					
	GM	SILTY GRAVEL - road base BASALT - grey/brown, weathered.	1				
	Basalt		2				
	SM	SILTY CLAY - deep brown.	3				
		BASALT - grey/brown.	4				
			5				
	Basalt		6				
			7				
	Basalt	BASALT - red/brown, wet, weathered.	8				
		BASALT - grey/brown, dry.	9				
			10				
	Basalt		11				
			12				
		END OF HOLE @ 12.0mBGL	12				
			13				
			14				

NOTES:

Q6

Spotswood

2130244a

Date Drilled :	16/5/02	BCL Number :	
Drilling Contractor :	Statewide	Top Of Casing Elevation :	
Drill Method :	Solid Auger, RAB, Splitspoon	Depth Water Encountered :	
Drilled Diameter :	100 mm	Static Water Level :	
Logged By :	SPM	Casing Diameter :	

Graphic Log	Lithology Description		Depth (mBGL)	Sample Method	Sample ID	PID (ppmV)	Completion
	GM	SILTY GRAVEL - dark brown.					
	ML	SILT - dark brown/purple.	1	SS	Q6 1.4-1.5	0.0	
			2	SS	Q6 1.9-2.0	0.0	
	CL	SILTY CLAY - grey/brown. Basalt rocks encountered @ 3.9mBGL.	3	SS	Q6 2.9-3.0	0.0	
			4	SS	Q6 3.9-4.0	0.0	
			5	SS	Q6 4.9-5.0	0.0	
			6	SS	Q6 5.9-6.0	0.0	
			7	SS	Q6 6.9-7.0	0.0	
	Basalt	BASALT - grey/brown. Water encountered @ 9.3mBGL.	8				
			9				
			10				
			11				
			12				
			13				
			14				
		END OF HOLE @ 14.0mBGL.					

NOTES:

SS - Splitspoon.

MONITORING WELL UB12

URS Australia Pty Ltd
Level 6, 1 Southbank Boulevard, Southbank VIC 3006

Phone 8699 7500
Fax 8699 7550

Project Name: **Spotswood Terminal 2011**

Client: **Mobil Oil Australia Pty Ltd**
Location: **Simcock Avenue, Spotswood**

Drilling Contractor: **South Western Drilling**

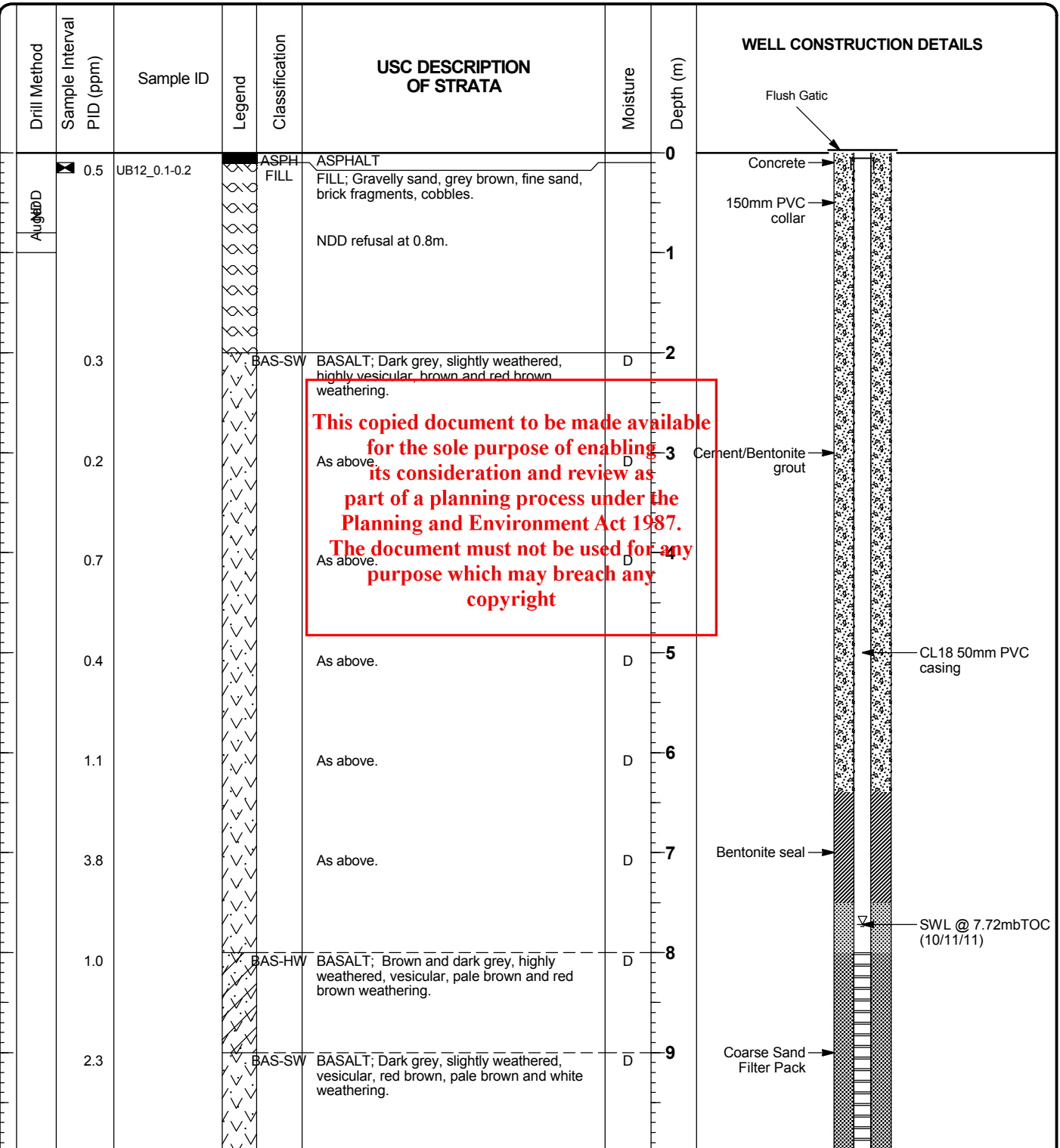
Project No.: **43513682**

Logged By: **SH**
Checked By: **KAP**
Date Started: **29-10-11**
Date Finished: **7-11-11**

Bore Size: **125 mm**
Total Depth: **12.00 m**
Casing Size: **50 mm**

Relative Level (PVC): **9.63 mRL**
Coordinates: **5811114.59 mN**
314546.64 mE
Permit No:

Drill Type: **NDD/Geoprobe**
Drill Model: **Geoprobe 7720DT**
Drill Fluid: **None**



URS Australia Pty Ltd
Level 6, 1 Southbank Boulevard, Southbank VIC 3006

Phone 8699 7500
Fax 8699 7550

Project No.: **43513682**

Project Reference: **Spotswood Terminal 2011**

Drill Method	Sample Interval PID (ppm)	Sample ID	Legend	Classification	USC DESCRIPTION OF STRATA	Moisture	Depth (m)	WELL CONSTRUCTION DETAILS
Air Hammer	1.1				As above.	D	10	 CL18 threaded 50mm PVC screen
	43.2			BAS-HW	BASALT; Brown and red brown, extremely weathered, highly vesicular. Hydrocarbon odour.	M		
	80.8				As above. Hydrocarbon odour.	M	11	
	56.8				As above, brown with pale brown, red brown, green and white weathering, high clay content. Hydrocarbon odour. EOH @ 12.0mbgs	W	12	
							13	
							14	
							15	
							16	
							17	
							18	
							19	
							20	
							21	

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MONITORING WELL UB16

URS Australia Pty Ltd
Level 6, 1 Southbank Boulevard, Southbank VIC 3006

Phone 8699 7500
Fax 8699 7550

Project Name: **Mobil Spotswood Terminal**

Client: **Mobil Oil Australia Pty Ltd**

Drilling Contractor: **South Western Drilling**

Project No.: **43513895**

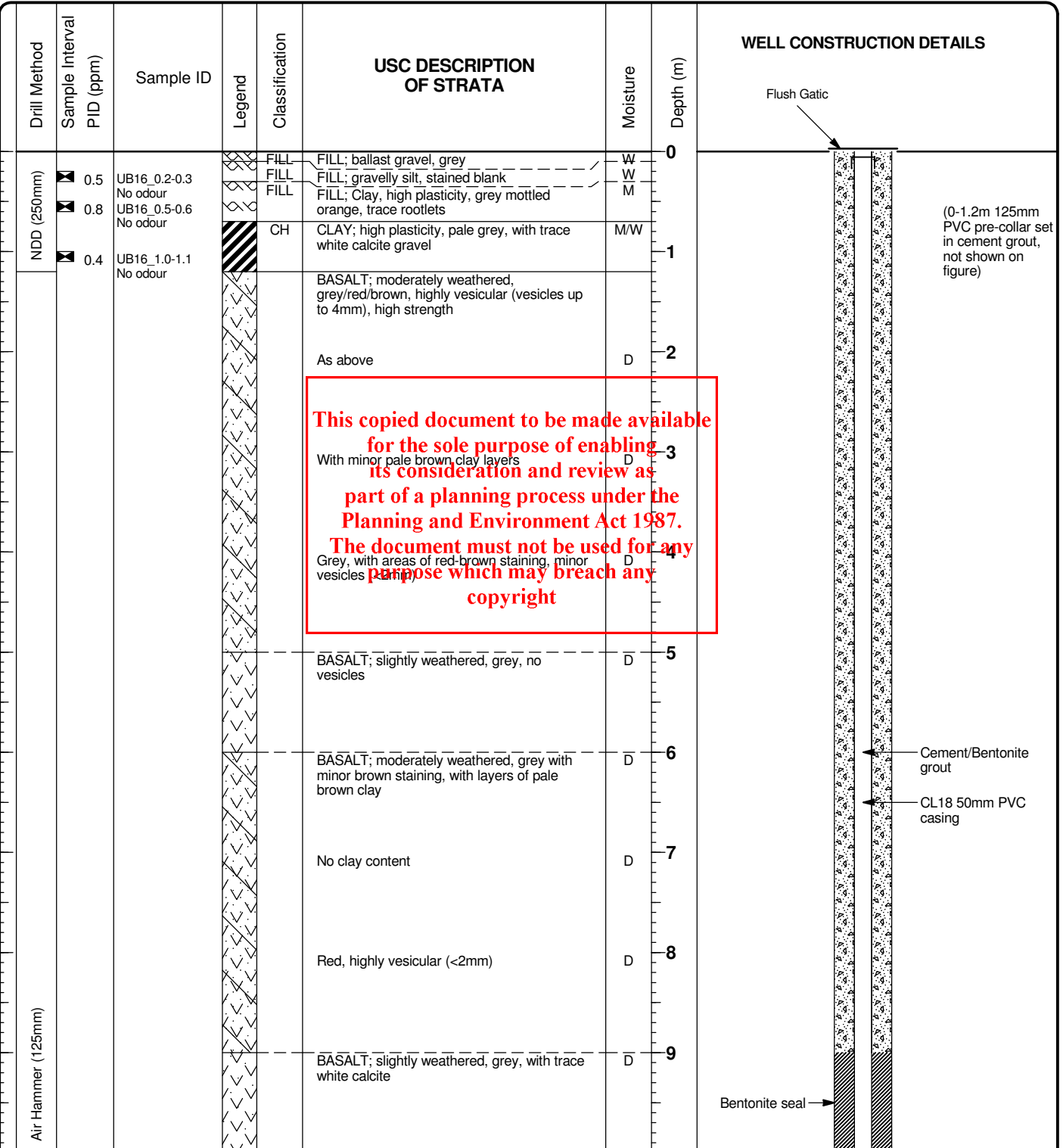
Location: **Spotswood**

Logged By: **TM/NL**
Checked By: **KAP**
Date Started: **18-3-13**
Date Finished: **18-3-13**

Bore Size: **125 mm**
Total Depth: **14.50 m**
Casing Size: **50 mm**

Relative Level (PVC): **13.11 mRL**
Coordinates: **5811264.93 mN**
314040.17 mE
Permit No: **WRK073947**

Drill Type: **NDD/Air Hammer**
Drill Model: **Geoprobe DB520**
Drill Fluid: **None**



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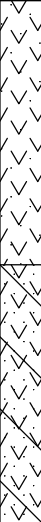
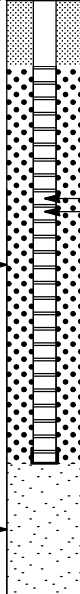
MONITORING WELL UB16

URS Australia Pty Ltd
Level 6, 1 Southbank Boulevard, Southbank VIC 3006

Phone 8699 7500
Fax 8699 7550

Project No.: **43513895**

Project Reference: **Mobil Spotswood Terminal**

Drill Method	Sample Interval PID (ppm)	Sample ID	Legend	Classification	USC DESCRIPTION OF STRATA	Moisture	Depth (m)	WELL CONSTRUCTION DETAILS
Air Hammer (125mm)		No odour			As above	D	10	 CL18 threaded 50mm PVC screen SWL 26-03-2013 11.6mBTOC 8/16 Washed Sand Filter Pack Sand backfill
					As above	D	11	
					BASALT; moderately weathered, grey with minor brown staining	M	12	
					Grey with minor brown staining and minor red sections	W	13	
		No odour			BASALT; fresh, pure, trace pale grey clay	W	14	
					End of hole at 14.5m, target depth		15	
							16	
							17	
							18	
							19	
							20	
							21	

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URS Australia Pty Ltd
Level 6, 1 Southbank Boulevard, Southbank VIC 3006

Phone 8699 7500
Fax 8699 7550

Project Name: **Mobil Spotswood Terminal**

Client: **Mobil Oil Australia Pty Ltd**

Drilling Contractor: **South Western Drilling**

Project No.: **43513895**

Location: **Spotswood**

Logged By: **TM**

Bore Size: **125 mm**

Relative Level (PVC) **9.53 mRL**

Drill Type: **NDD/Air Hammer**

Checked By: **KAP**

Total Depth: **8.70 m**

Coordinates: **5811057.31 mN**

Drill Model: **Geoprobe DB520**

Date Started: **3-4-13**

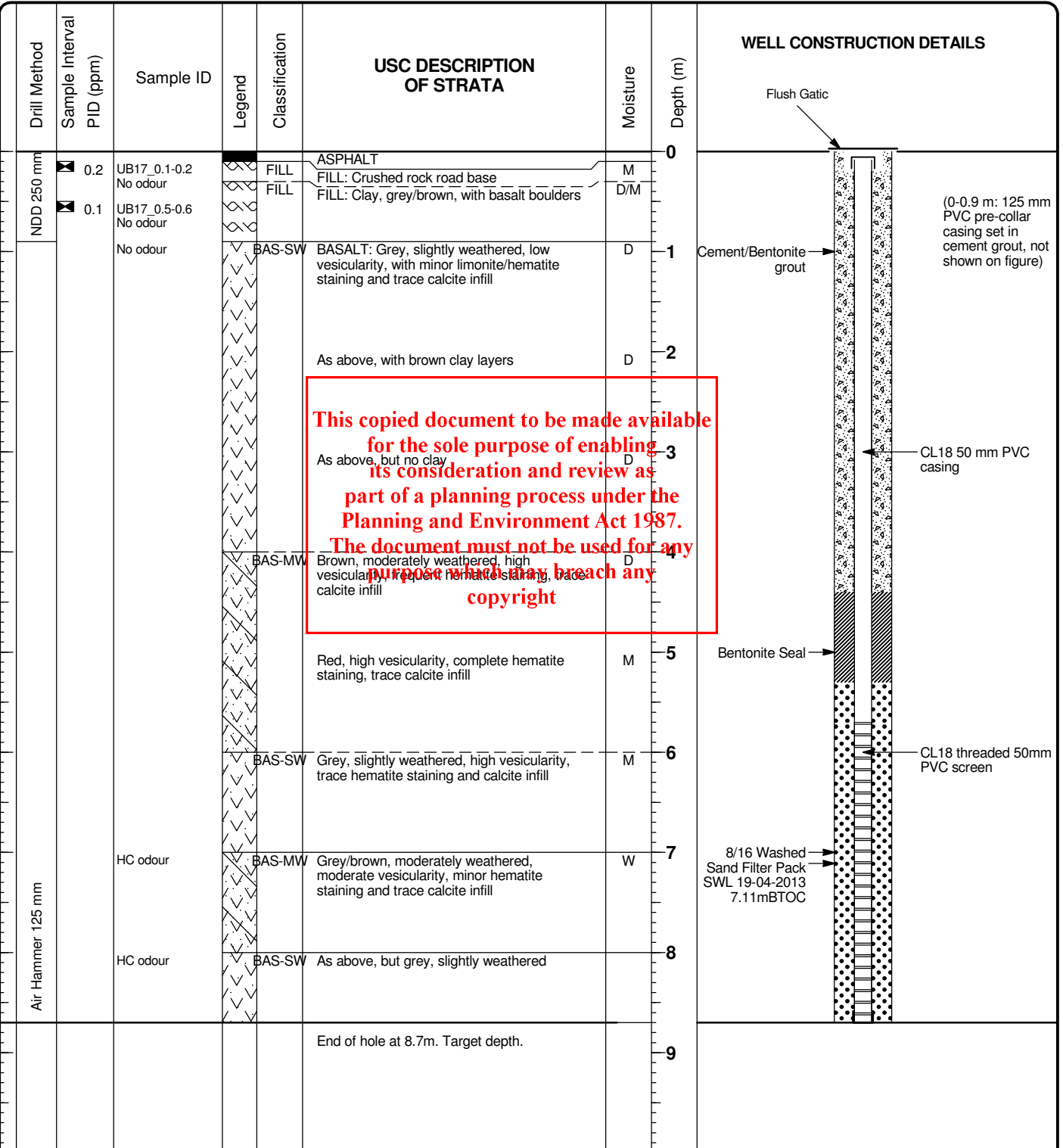
Casing Size: **50 mm**

314582.43 mE

Drill Fluid: **None**

Date Finished: **19-4-13**

Permit No: **WRK073956**



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APPENDIX E

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Golder has performed the Services in accordance with the Contract as a third party independent contractor qualified to provide certification by means of a direct expression of opinion as to the No Further Action status of a No Further Action Site (including any Contamination issues where applicable) and/or delivery of Interim Monitoring Services to and Interim Monitoring Site and that such reports have been commissioned on the basis not only for reliance by Mobil upon the opinions expressed but also for reliance by and the benefit of any purchaser from Mobil, any lender to a purchaser from Mobil, any lessor to Mobil, any assignee of a real estate interest from Mobil or any owner, occupier (howsoever described) or user of land or person otherwise affected by Covered Contamination (including, for example, a purchaser from an owner of the land, a lessee from an owner of the land or an assignee of a lessee from an owner of the land.)

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Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

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Attachment C
Site Management Plan (SMP)

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REPORT

Former Spotswood Terminal (31XX)

Site Management Plan

Submitted to:

Mobil Oil Australia Pty Ltd

Level 9, 664 Collins Street, Docklands, VIC 3008

Submitted by:

Golder Associates Pty Ltd

Level 11, 567 Collins Street, Melbourne, Victoria 3000
Australia

+61 3 8862 3500

1418584-405-R-Rev1

April 2023

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Revision Status

This Site Management Plan (SMP) is a “live” document to be reviewed and amended, as necessary, prior to future development and ground disturbance works to ensure any changes to the environmental conditions are recognised and that human health and environmental risks are managed appropriately. If there is a change to a more sensitive land use activity, professional advice should be sought from a suitably trained and qualified Environmental Consultant to reassess the potential risks. This may also require engagement of an EPA approved Environmental Auditor.

Updates of the SMP will be forwarded to the responsible parties listed in Section 4.0 and will be referenced with a successive version number. This SMP is ‘Rev0’ as per below.

Revision	Date of Revision	Revision Author
Rev0	April 2023	Golder

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Table of Contents

1.0	INTRODUCTION	1
1.1	Purpose	1
1.2	Objective of SMP	1
1.3	Regulatory Context	1
2.0	ENVIRONMENTAL SETTING.....	3
2.1	Site Description	3
2.2	Site History	3
2.3	Site Geology	4
2.4	Hydrogeological Setting	4
2.5	Sources of Known Residual Chemicals of Interest Onsite	4
2.5.1	Petroleum product storage and product pipelines	4
2.5.2	Historical quarrying and landfilling	5
2.5.3	Storage and use of chlorinated solvents	5
2.5.4	Use of asbestos	5
2.5.5	Use of PFAS	5
3.0	SITE CONTAMINATION CONDITIONS	6
3.1	Reference Documentation	6
3.2	Site Remediation	6
3.2.1	Primary source removal - decommissioning and demolition	6
3.2.2	Secondary source removal – chemicals of interest in soil	7
3.2.3	Secondary source removal - LNAPL and dissolved phase impacts in groundwater	7
3.3	Final Soil Condition	7
3.4	Final Groundwater Conditions – Onsite	11
3.5	Management Framework	11
4.0	RESPONSIBLE PARTIES	13
4.1	Site Owner	13
4.2	Contractors	13
4.3	Environmental Consultant	13
4.4	Environmental Auditor	14

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April 2023

1418584-405-R-Rev1

5.0	TRIGGERS AND MANAGEMENT ACTIONS	15
5.1	Triggers for action	15
5.2	General Management Actions	16
5.2.1	Overview	16
5.2.2	Site development trigger	16
5.2.2.1	Direct contact with impacted soils	16
5.2.2.2	Vapour intrusion	17
5.2.2.3	Underground infrastructure contacting impacted soils	17
5.2.2.4	Landscaped vegetation contacting impacted soils	18
5.2.3	Earthworks on site	18
5.2.3.1	Contact with impacted soils or vapour during excavations	18
5.2.3.2	Soil disturbance, management and disposal	18
5.2.3.3	Importation of soil	19
5.2.4	Installation of extraction wells	20
5.3	Contingency Actions	20
6.0	GENERAL ENVIRONMENTAL MANAGEMENT	21
6.1	Overview	21
6.2	Tendering for Construction or Development	21
6.3	General Environmental Management Obligations	21
6.4	Occupational Health and Safety	21
6.5	General Excavation Principles	22
7.0	DOCUMENTATION AND REVIEW	23
7.1	Records of Monitoring and Inspection	23
7.2	Review by Environmental Consultant	23
7.3	Revision of this SMP	23
8.0	IMPORTANT INFORMATION	24
9.0	REFERENCES	24

TABLES

Table 1: Site details	3
Table 2: Summary of final soil condition	8
Table 3: Management framework based on residual chemical impacts	12

Table 4: Trigger conditions for implementation of management actions.....	15
Table 5: Contingency actions	20

APPENDICES

APPENDIX A

Figures

APPENDIX B

Example Proforma

APPENDIX C

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1.0 INTRODUCTION

1.1 Purpose

This Site Management Plan (SMP) has been prepared on behalf of Mobil Oil Australia Pty Ltd (Mobil) to inform site owners and users of the ongoing management requirements for residual soil and groundwater contamination and soil vapour risks at the former Mobil Spotswood Terminal (Mobil Facility ID: 31XX), located at 44-76 Simcock Avenue, Spotswood, Victoria (the 'site') (Figure 1, Appendix A).

Mobil's intent is to divest the site and has undertaken assessment and remediation work to make the site suitable for ongoing commercial/industrial use. An Environmental Audit (0008005376) was completed by the appointed Environmental Auditor¹ ('the Auditor') for the site pursuant to Division 3 of the Environment Protection (EP) Act 2017. The Auditor determined that Clean Up So Far As Reasonably Practicable (CUSFARP) had been achieved and recommended that the authority identify the site as an area of restricted groundwater use.

The Environmental Audit (AEA, 2023) is the key information document related to the contamination status of the site and should be made familiar to all those implementing this SMP.

This SMP has been prepared to inform the on-going management of residual soil and groundwater contamination present within the boundary of the site as defined on Figure 1. On 11 June 2019 the West Gate Tunnel Project (WGTP) acquired the northern portion of the former Mobil terminal along with a small portion in the southeast corner adjoining Simcock Avenue. The site (and Audit) boundary was therefore amended to reflect the acquisition, as outlined in Figure 1.

This SMP should be updated to reflect any changes in site conditions, including but not limited to site redevelopment and or subdivision. Refer to Section 4.0 for responsible parties and Section 7.3 for requirements for revision of this SMP.

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1.2 Objective of SMP

The objective of this SMP is to inform site users, designers, development contractors, maintenance staff, maintenance contractors, occupiers and owners of the site of the conditions and control mechanisms for the management of known and potential human health and environmental risks of harm associated with residual soil and groundwater contamination and vapour intrusion risk at the site.

1.3 Regulatory Context

In 2017 the Environmental Protection Act 1970 (GoV, 1970) was repealed and replaced with Environment Protection Act 2017 (GoV, 2017). The cornerstone of the Environment Protection (EP) Act 2017 is the general environmental duty, which requires Victorian's to understand and minimise their risks of harm to human health and the environment, from pollution and waste. Section 35 of the Act outlines duties and requirements in relation to contaminated land and includes the following duties:

- The duty to manage.
- The duty to notify of notifiable contamination.

¹ Mobil engaged Mr Charlie Barber of Australian Environmental Auditors Pty Ltd (the Auditor), (CARMS No 68548-2, Service Order No 8005376) to undertake the Audit.

Further information in relation to these duties is outlined in the following EPA documents:

- EPA Publication 1977.1 'Guide to the duty to manage contaminated land' (EPA 2022a).
- EPA Publication 2008.2 'Guide to the duty to notify of contaminated land' (EPA 2022b).
- EPA Publication 1753.2 'Guide to the Environment Protection Regulations' (EPA 2021) provides further detail regarding the Environment Protection Regulations 2021 (effective from 1 July 2021) introduced to support the Environment Protection Act 2017.

The obligations and conditions set out in this SMP as well as the Environmental Audit apply to the current owner and their successors in title (the duty holder(s)). They inform the duty holder of minimum actions required to satisfy their obligations with respect to this SMP and the Duty to Manage Contaminated Land under Section 39 of the EP Act 2017. These actions do not necessarily fulfill the duty holder's general environmental duty.

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2.0 ENVIRONMENTAL SETTING

2.1 Site Description

The site details are provided in Table 1.

Table 1: Site details.

Item	Description
Site Identification	Former Mobil Spotswood Terminal
Mobil Facility ID	31XX
Site Address	44-76 Simcock Avenue, Spotswood, Victoria 3015
Title Identification Details	The site is described in the following titles: - Lot 1 on Title Plan 967396N (formerly known as part of Crown Allotment 70, Section 7, Parish of Cut Paw Paw) - Lot 1 on Title Plan 967395Q (formerly known as part of Crown Allotment 70A, Section 7, Parish of Cut Paw Paw) - Crown Allotment 78C, Section 7, Parish of Cut Paw Paw - Crown Allotment 78D, Section 7, Parish of Cut Paw Paw - Crown Allotment 78E, Section 7, Parish of Cut Paw Paw - Crown Allotment 78F, Section 7, Parish of Cut Paw Paw
Historical Land Use	Petroleum product and chemical storage and handling facility
Land Use	Vacant land
Proposed Land Use	Commercial/Industrial
Zoning	Industrial 1 Zone (I1NZ)
Site Area	Approximately 60 hectares

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2.2 Site History

The main use of the site was as a petroleum product and chemical storage and handling facility, with the facility operating from 1927 to 2009 (URS, 2012). Portions of the site have historically been used for other purposes such as a quarry, a 'Powder Co.', a hotel, an agricultural implement manufacturer, a bank and an area of landfilling (URS, 2010). The historical petroleum product terminal site layout is provided in Figure 2 attached to this SMP.

Petroleum products arrived by tanker at a dock on the Yarra River and products were piped to the terminal entering at the southeast corner, an area known as "Spaghetti Junction" URS (2012). Products were stored in several tank farms before being loaded to road tankers at the Tanker Truck Filling Stand (TTFS) for distribution. It is believed that prior to 1970, products were also transferred to rail cars via a former rail loading platform located along the southern boundary of the site. The CSR/Emoleum Area was a road making division and included a bitumen plant, laboratory and storage tanks along with other associated infrastructure (URS, 2010).

It was indicated that the products that have been handled through the terminal or chemicals used onsite have included:

- Fuels (premium, standard, unleaded, diesel, aviation and heating oil)
- Fuel and oil additives, such as methyl tert-butyl ether (MTBE)
- Lube based oils

- Bitumen
- Solvents such as methyl ethyl ketone (MEK)
- Small volumes of laboratory chemicals including 1,1,1-trichloroethane (1,1,1-TCA) and trichloroethene (TCE)
- The storage and use of PFAS (per- and polyfluorinated alkyl substances) in aqueous film forming foams (AFFFs) used in firefighting deluge systems.

2.3 Site Geology

The site is underlain by the basalt of the Newer Volcanics which is dark to light grey, coarsely vesicular and contains minor interbedded silty sand and baked soils (GSV, 1974). The basalt unit is approximately 30 m thick at the site and is underlain by Tertiary aged Brighton Group sediments.

The Royal Historic Society Victoria (in URS, 2012) indicated that a strip of land along the southern bank of Stony Creek (to the north of the site) was used as a 'Quarry Reserve' in the mid-1890s from which basalt was quarried with these quarried areas later filled in. The estimated extent of the former quarried areas within the site is presented on Figure 2.

Environmental investigations at the site have observed fill material present across the site overlying the Newer Volcanics basalt. Outside of the quarried areas, this material generally comprised sand/sandy clays and reworked natural clays (weathered Newer Volcanics basalt) and was between 1.0 m to 3.0 m in thickness (URS, 2012). Fill material in the quarried areas is variable and has been recorded up to 7.5 m in thickness immediately north of the site.

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2.4 Hydrogeological Setting

The aquifer directly beneath the site is the basalt of the Newer Volcanics. The depth to groundwater beneath the site has typically ranged from 7.0 to 10.0 m bgl in the southern central portion of the site, 5.0 to 9.0 m bgl near the eastern boundary, 5.0 to 8.0 m bgl near the northern boundary and 11.0 to 12.5 m bgl near the western boundary.

The highest groundwater elevations in the basalt aquifer are recorded in the southern central portion of the site, with groundwater flowing to the west, north and east from this area (Figure 3). The groundwater elevations southern central portion of the site are around 2.3 m Australian Height Datum (AHD) with elevations at the boundaries at around 1.3 m AHD to 1.5 m AHD.

Groundwater is considered to be discharging to Stony Creek to the northwest/north of the site and to the sewer to the northeast/east of the site (Figure 3).

2.5 Sources of Known Residual Chemicals of Interest Onsite

2.5.1 Petroleum product storage and product pipelines

Storage tanks and associated product pipelines running to the tanks were considered the primary source of soil contamination associated with the operation of the site as a petroleum product and chemical storage and handling facility. The former location of the various tanks and associated product pipelines are shown in Figure 2.

2.5.2 Historical quarrying and landfilling

A soil investigation was undertaken in 2014 (AECOM, 2014) to characterise the quarry fill and delineate the quarry boundaries. The fill was noted to comprise ash-containing silt, with fragments of brick, concrete, glass and ash resembling crystalline gas works waste (URS, 2012). No evidence of putrescible waste was observed within the areas subject to quarrying and filling (AECOM 2014). As such, it is considered that chemicals (and landfill gas) typically associated with putrescible waste do not form COIs for the site. The inferred extent of the quarry based on the investigation is shown in Figure 2.

2.5.3 Storage and use of chlorinated solvents

During a site inspection undertaken in 2009, URS (2010) noted that former degreasing infrastructure was identified and located in a parts cleaning shed of the former CSR/Emoleum Warehouse. In addition, a drum label likely indicative of the storage of trichloroethene (TCE) was found within proximity of the shed on top of a corroded drum (Figure 2, Grid Reference D8). URS (2010) concluded that chlorinated solvents were likely to have been used onsite as degreasing agents in this area of the terminal. No other areas of chlorinated hydrocarbon use were identified.

2.5.4 Use of asbestos

A hazardous materials assessment undertaken in 2007 identified the presence of confirmed or suspected asbestos containing materials (ACM) included vinyl floor tiles, cement sheeting and pipes, tar (zelemite) switchboard backing boards, gaskets, millboard, mastic and bitumen/malthoid insulation at various locations and within buildings (URS 2010).

2.5.5 Use of PFAS

Per- and poly-fluorinated alkyl substances (PFAS) have been used at the site in the fixed fire protection systems (AECOM 2016a). The foam house was located on the southern boundary (Figure 2, Grid Reference G8) with a mix of aboveground and underground foam pipelines running from the foam house to the former tank farms and former TTFS.

Additionally, firefighting exercises were undertaken with "FP70", a fluoro protein foam. No information was available on where these exercises occurred.

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3.0 SITE CONTAMINATION CONDITIONS

3.1 Reference Documentation

As noted in Section 1.0, the site was subject to an Environmental Audit. The key documents that document the final condition of the site and support the Audit are:

- Golder (2023a) CTC Program – 31XX Spotswood Terminal, Soil Condition Report (Report Reference 1418584-263-R-Rev1) dated March 2023.
- Golder (2023b) Updated Conceptual Site Model and Groundwater Condition Report (Report Reference 1418584-495-R-Rev1) dated February 2023.
- Golder (2023c) CTC Program – 31XX Spotswood Terminal, LNAPL CUSFARP Supporting Document (Report reference 1418584-401-R-Rev1) dated February 2023.
- Golder (2023d) CTC Program – 31XX Spotswood Terminal, PFAS and Metals CUSFARP Supporting Document (Report reference 1418584-506-R-Rev0) dated April 2023.

The outcome of the Environmental Audit was the issue of a set of recommendations with management conditions. The recommendations refer to this SMP to manage the installation and maintenance of physical barriers, vapour mitigation systems and onsite groundwater extraction.

3.2 Site Remediation

3.2.1 Primary source removal, decommissioning and demolition

The site had been operated since 1922 as a petroleum product and chemical storage and handling facility, with operations ceasing in early 2009. The site is vacant, with above and below ground fuel infrastructure removed over several stages from 2014 to 2022, as summarized below:

- Above ground infrastructure including warehouses, sheds, the laboratory, the Tanker Truck Filling Stand (TTFS) and tanks were demolished in 2013 (McMahon, 2014). McMahon also undertook the removal of the asbestos cement sheeting from roofs of numerous buildings.
- Excavation and removal (including disposal) of known underground infrastructure such as underground storage tanks (USTs), interceptor traps and pipework was subsequently undertaken between 2015 and 2016 (AECOM, 2016b). Onsite rail siding infrastructure (rail lines and timber sleepers) and ACM such as pipes, sheeting and impacted soil were also removed, where identified, during this time (AECOM, 2016b).
- In 2017 and 2021, additional ACM removal works were undertaken following the removal of remaining hardstand (Golder, 2023a).
- In February 2022, a concrete pit located near the eastern site boundary was removed. Hydrocarbon impacted water from inside the pit and soils from around the pit were also removed (Golder, 2023a).

Known above ground and below ground infrastructure relating to the site's operation as a petroleum storage facility has been removed with the exception of the following as shown on Figure 4:

- Deep concrete footings associated with bund walls in the north and northwest of the site
- Three backfilled in ground pits associated with runoff and spillage control in the TTFS.
- Parallel brick walls along the eastern boundary unearthed during the 2022 concrete pit removal. The brick walls are inferred to form part of a brick lined culvert historically containing oily water pipes (AECOM

2016b). A concrete plinth, inferred to have been used to secure product manifold valves formerly located adjacent to bulk tank T16 (refer J6 on Figure 2) was also located a depth of 0.2 - 0.3 m bgl at the northern exposed extent end of the wall.

Given the history of the site, there is the potential for other unidentified structures to exist below ground which may be encountered during site works that disturb the ground surface. The potential to encounter such structures is to be managed through the contingency actions outlined in this SMP (Section 5.3).

3.2.2 Secondary source removal – chemicals of interest in soil

In addition to the removal of the primary sources of potential impacts, localised areas of soil impacts were removed as summarised below:

- In February 2022, TCE impacted soils from a localised area along the southern boundary in the vicinity of the corroded drum with the TCE label were excavated and disposed off-site (Golder 2023a). Validation samples were collected from the final excavation surface and each validation sample collected was reported below the site assessment criteria.
- In February 2022, a test pitting program was undertaken to investigate the condition of the shallow soils at targeted locations (Golder, 2023a). From the results of the investigation hydrocarbon impacted soils from four locations were excavated and removed from the site, three near the former TTFS and one along the eastern boundary.
- Between August and October 2022, further investigation and remediation works were undertaken to remove hydrocarbon impacted soils from the area of the former Combustible Liquids Store and adjacent to the eastern site boundary between the former North East Tank Farm and South East Tank Farm. Approximately 590 t of impacted soil was excavated and disposed off-site during these works (Golder, 2023a).

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3.2.3 Secondary source removal - LNAPL and dissolved phase impacts in groundwater

Historical operational activities at the site have resulted in impacts to groundwater in the form of LNAPL and dissolved phase hydrocarbons, metals and PFAS, both on- and offsite. Groundwater remediation targeting three primary areas of LNAPL both on- and off-site occurred between 1992 to 2019 with approximately 430,000 L of total hydrocarbons removed via a combination of active and passive remediation efforts across the three primary LNAPL plumes (Golder, 2023c).

3.3 Final Soil Condition

An assessment of soil quality across the site following the assessment and remediation works is presented in the Soil Condition Report (Golder, 2023a). Overall, the assessment considered that while residual impacts associated with historical activities remained in soils on site (Table 2), these impacts did not present an unacceptable risk to applicable environmental values with respect to human health and environmental receptors.

The assessment of the final soil condition considered that implementation of a SMP was considered appropriate for the on-going management of remaining soil impacts and mitigating potential future risks to human health and environmental receptors.

Given the historical use of the site as a petroleum product and chemical storage and handling facility since the 1920s, there is the potential to encounter impacted soils. Primary areas of known residual impacts are summarised in Table 2 with the locations of these areas shown on Figure 5 to Figure 9.

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1418584-405-R-Rev1

Table 2: Summary of final soil condition.

Environmental Value	Exposure Pathway	Contaminant	Lateral Domain	Sample ID	Exceedance Depth (m bgl)	Assessment Outcome Summary
Maintenance of ecosystems	Direct exposure or uptake	Xylene, TRH F1 to F4 Fractions, BaP, metals, PFAS	Whole site	Between 1 and 147 samples for individual COIs	0.1 m bgl to 2.0 m bgl	Given the industrial / commercial land use, the overall potential ecological risk is unlikely to be realised as it is reasonable to assume that future redevelopment will result in the majority of the site being covered by structures or hardstand with limited areas of landscaped gardens. Residual ecological risk to landscaped areas can be managed through earthwork controls documented in a SMP. Figure 6 shows the areas of the site where exceedances of ecological criteria existed ranked by the hazard quotient² at each location. Figure 8 shows the distribution of PFAS (as PFOS and PFOS+PFHxS) across the site.
Human Health	Direct contact	Arsenic	Quarry West domain	GP17, GP23	Both at 0.5 m bgl	Concentrations in soil in the context of human health at the site were considered to be acceptable for general non-sensitive commercial/industrial land use. The potential hotspots can be managed through the SMP. Refer to Figure 5 for location of exceedances of direct contact criteria.
		Lead	Quarry West and Quarry Northwest domains	TP27, GP23	Both at 0.5 m bgl	
			CSR / Emoleum / Maintenance	GA22_TP22	0.25 m bgl	
	Vapour intrusion for inhalation	TRH F1 Fraction less BTEX	Combustible Liquid Store Area	EX05_S3 EX08_SB	1.4 m bgl 1.0 m bgl	Residual exceedances in soil were identified to be localised and not representative of overall soil quality in these areas which was assessed to not present an unacceptable risk based on general non-sensitive commercial/industrial land use. Residual exceedances located in area of site identified for vapour mitigation due to the presence of LNAPL.
			Northeast Tank Farm	OW100 EX06_CP EX06_E3 EX06_S3	0.2 m bgl 0.8 m bgl 1.5 m bgl 1.5 m bgl	

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April 2023

1418584-405-R-Rev1

Environmental Value	Exposure Pathway	Contaminant	Lateral Domain	Sample ID	Exceedance Depth (m bgl)	Assessment Outcome Summary
		Residual LNAPL	Unknown Location	P05	0.3 m bgl	Refer to Figure 7 for location of exceedances vapour intrusion criteria.
			Southeast Tank Farm	SVB03S	3.0 m bgl	
				SVB03D	7.0 m bgl	
	Inhalation	Asbestos	CSR / Emoleum / Maintenance	GA21_AS01/1007 GA21_AS01/1009 GA21_AS01/1001	Surface soils	Clearance certificates issued where visible ACM identified during assessment works and areas of known residual asbestos covered by clean hardfill. Given the historic use of the site and the indiscriminate nature of potential asbestos in soil at the site, there exists the potential to encounter unidentified asbestos across the site. Implementation of SMP with controls for earthworks considered appropriate to manage potential asbestos impacts. Refer to Figure 5 for sample locations of samples GA21_AS01/1007, GA21_AS01/1009 and GA21_AS01/1001.
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Building and Structures	LNAPL direct contact with underground structures	TRH C ₆ -C ₁₀ F1 Fraction	Southeast Tank Farm	PB01	12-13 m bgl	LNAPL and dissolved phase impacts in groundwater are stable and not migrating towards Stony Creek. The stability of the LNAPL infers that residual hydrocarbon impacts at or above LNAPL saturation limits in soils are not contributing significant amounts of LNAPL to groundwater. The site therefore has no sensitive receptors in the area of potential LNAPL impacts. Potential LNAPL impacts in shallow soils in the areas where Management Limit exceedances for LNAPL Formation may be degrading to future building foundations or underground structures that contact soils in these areas.
		TRH C ₆ -C ₃₄ Sum of F1-F3 Fractions	CSR / Emoleum / Maintenance	GA20_TP12	0.25-0.3 m bgl and 0.45-0.5 m bgl	
			Northeast Tank Farm	SB11_14 OW100	0.0-0.2 m bgl 0.2 m bgl	
			Northern Tank Farm	SB27_14	0.0-0.1 m bgl	

Environmental Value	Exposure Pathway	Contaminant	Lateral Domain	Sample ID	Exceedance Depth (m bgl)	Assessment Outcome Summary
			Unknown	S03 SP05	N/A	The risk to buildings and structures in these areas will need to be managed through the SMP.
		TRH C ₆ -C ₄₀ Sum of F1-F4 Fractions	CSR / Emoleum / Maintenance	GA20_TP12	0.45-0.5 m bgl	Refer to Figure 9 for the location of groundwater wells where LNAPL was detected or inferred to be present.
			N E Tank Farm	OW100	0.0-0.2 m bgl	
	Vapour intrusion for fire and explosive hazards ¹	TRH C ₆ -C ₁₀ F1 Fraction	NE Tank Farm	EX06_E3	1.5 m bgl	The risk of the build-up of vapours in enclosed buildings creating a fire or explosive risk can be managed through the same mitigation measures as the inhalation risk from vapour intrusion for human health.
			Southeast Tank Farm	PB01	12-13 m bgl	Residual exceedances located in area identified for vapour mitigation due to the presence of LNAPL.
		TRH >C ₁₀ -C ₁₆ F2 Fraction	NE Tank Farm	OW100	0.2 m bgl	
Aesthetics	Olfactory and visual impacts	Odorous or staining COIs	Northern Tank Farm	SB22_14	0.1-0.3 m bgl	Refer to Figure 7 for location of exceedances of vapour intrusion for fire and explosive hazard criteria.
			Whole site	N/A	N/A	Potential to encounter odorous soils during future construction or intrusive maintenance works. Impacts can be managed through the implementation of appropriate workplace health and safety practices and SMP. It is unlikely that general commercial/industrial workers will encounter odorous soils as it is reasonable to assume that most areas will be covered by buildings or hardstand with limited areas of landscaped gardens.

Notes:

¹ Noting that fire and explosive risk is also a human health risk if the building is occupied

² The hazard quotient is the ratio of the toxicity reference values (i.e., screening criteria) to the exposure concentration (or dose) of a chemical (i.e., the reported concentration in soil) and provides a measure of the safety or risk under a set of conditions. Refer to the final Soil condition Report for further details (Golder 2023a).

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3.4 Final Groundwater Conditions – Onsite

This SMP outlines the management requirements for soil, soil vapour and groundwater on-site/directly beneath the site. The risk to environmental values of groundwater off-site will be managed through the Offsite Groundwater Management Plan (GMP) (Golder, 2023e).

The key groundwater COIs associated with the site are considered to be LNAPL, MAHs, PAHs, PFAS, metals, resulting in the preclusion of environmental values of groundwater.

The following provides a summary of the final groundwater condition, which are discussed in further detail in the CUSFARP Supporting Documents (Golder, 2023c and 2023d) with respect to the requirement for on-going management of groundwater impacts:

- **Human health vapour intrusion:** Site assessment has identified the presence of LNAPL impacts beneath the site (Figure 9).

LNAPL impacts in the east of the site² are associated with historical storage of light hydrocarbon fraction products including petrol, diesel, kerosene, turpentine and methyl ethyl ketone (MEK). LNAPL associated with these products generally contains more volatile compounds (as indicated on Figure 10 in Golder (2023c)) and hence presents a higher potential risk with respect to vapour intrusion into buildings proposed to be constructed on-site.

LNAPL impacts in the western half of the site³ are associated with historical releases of lubricant oils, heating oils and fuel oils. These products generally comprise heavy hydrocarbon fractions that have low volatility (as indicated on Figure 10 in Golder (2023c)). As such, these LNAPL impacts are unlikely to present a vapour intrusion risk.

- **Extractive environmental values:** Site assessment has identified the presence of key groundwater COI at concentrations that preclude groundwater environmental values based on extraction for irrigation, stock watering, water based recreation (i.e., swimming pools), and industrial and commercial use. Groundwater at the site is not currently realised for these environmental values.
- Further assessment concluded that it was not practicable to clean up this groundwater contamination and recommended that an area of restricted groundwater use⁴ be implemented to control the future extractive use of groundwater (Figure 10).

3.5 Management Framework

Based on the final soil and groundwater condition on-site, a management framework was developed (Table 3) to guide the implementation of management requirements for residual chemical impacts. Under the management framework, the site has been divided into areas with differing management requirements based on the nature of the residual impacts.

The four management areas are shown on Figures 11A to 11D and are based on the following:

- Area A (Figure 11A) primarily relates to areas where soil concentrations may pose an unacceptable risk to human health through dermal contact, ingestion and/or inhalation.

² Identified as the MEK Plume and SEC Plume (Golder 2023b).

³ Identified as the Lube Plume (Golder 2023b).

⁴ Previously identified as a Groundwater Quality Restricted Use Zone (GQRUZ).

- Area B (Figure 11B) comprises the area of LNAPL at the groundwater table and shallow soil impacts associated with historical storage of light fraction hydrocarbons that present a potential vapour intrusion risk.
- Area C (Figure 11C) comprises the area where soil hydrocarbon impacts exceed management limits
- Area D (Figure 11D) recognises the presence of residual soil impacts across the site that require consideration with respect to controlling discharges from earthworks, implementation of appropriate occupational health and safety controls, disposal of surplus material generated during earthworks and potential risks to workers in trenches. Area D also recognises that the site has been identified as an area with groundwater unsuitable for extractive use.

The parties responsible for implementation of the management framework are outlined in Section 4.0. The triggers for the requirement of active management of residual contamination are discussed in Section 5.0.

Table 3: Management framework based on residual chemical impacts.

Area	Management	Residual Soil Contamination Management Required	Residual Groundwater Contamination Management Required	Vapour Management Required
Area A	Separation layer required	✓	✓	✗
Area B	Vapour mitigation system required	✓		✓
Area C	LNAPL forming management area	✓		✗
Area D	Soil management area Landscaping management area	✓		✗
	Trench worker management area	✓		✓
	Area of groundwater unsuitable for extraction	✗		✗

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4.0 RESPONSIBLE PARTIES

4.1 Site Owner

The overall ongoing management of the site will be the responsibility of the Site Owner (or delegate) to ensure that procedures and reporting requirements as set out in this SMP are adhered to.

It is the Site Owner's responsibility to:

- Ensure that all site works are undertaken in accordance with this SMP.
- Maintain all site records related to implementation of this SMP.
- Monitor changes in site conditions that may trigger the need for management actions for residual contamination (Section 5.0).
- Ensure that the required parties such as Contractors, Environmental Consultants and an Environmental Auditor (if required) are engaged to implement the requirements of the SMP.
- Engage an Environmental Consultant and Environmental Auditor, as required, to assess issues that arise from implementation of this SMP that require management actions.
- Manage the implementation of any recommendations made by an Environmental Consultant or Environmental Auditor in relation to work undertaken in accordance with this SMP.
- Provide all persons contracted to perform any maintenance activities at the site with a copy of the SMP to alert them to the condition of the site.
- Ensure any delegate informs the owner of any non-conformances with the procedures and requirements of this SMP.
- Ensure rectification of any non-conformances with the procedures and requirements of this SMP.

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As noted in Section 1.0, the obligations, responsibilities and conditions set out in this SMP inform the duty holder of minimum actions required to satisfy their obligations with respect to this SMP and the Duty to Manage Contaminated Land under Section 39 of the EP Act 2017. These actions do not necessarily fulfil the duty holder's General Environmental Duties under the EP Act 2017.

4.2 Contractors

All Contractors conducting building design, earthworks, construction, and maintenance works on the site must implement the SMP fully as it relates to their activity and be aware of the risks and obligations indicated in the document.

The SMP must be referenced as part of the Contractor induction to the site so all designers, operators and workers on the site are aware of their requirements, the risks involved and the reporting of any breaches of the SMP.

4.3 Environmental Consultant

Responses to issues, reviews and reporting activities must be conducted by a suitably trained and qualified Environmental Consultant ("Environmental Consultant") who is capable of identifying and assessing soil contamination issues. A suitably qualified Environmental Consultant is considered someone who possesses a Certified Environmental Practitioner (CEnvP) Site Contamination certification or is an EPA approved Environmental Auditor. The Environmental Consultants' role is to include but not limited to:

- Advising and ensuring works are compliant with this SMP and the Environmental Audit Statement Conditions.
- Communicate to the Site Owner when the Environmental Auditor is required.
- Assess and further investigate issues as they arise related to observations of contamination, odours and vapours through maintenance works or future works.

If any changes are proposed to this SMP, the changes must be reviewed and verified by an Environmental Consultant and Environmental Auditor (refer to Section 4.4) to confirm that the changes are appropriate to manage the risk.

4.4 Environmental Auditor

The Environmental Auditor's role includes, but is not limited to, response to select issues, review, reporting and verification relating to:

- The reduction in extent of any area requiring management as presented in Figure 11A to Figure 11D.
- Verification of a proposed Separation Layer or any changes to an approved and verified Separation Layer including its physical removal.
- Verification of a proposed Vapour Mitigation System design or any changes to an approved and verified Vapour Mitigation System design.
- Periodical review of the SMP, if requested by the Site Owner.
- Amendment or revision of the SMP.

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5.0 TRIGGERS AND MANAGEMENT ACTIONS

5.1 Triggers for action

As discussed in Section 3.5, a change of site conditions may trigger the need for management actions related to residual contamination to mitigate risk of harm to human health, ecological and/or groundwater related receptors. The key conditions for triggering management actions are presented in Table 4 below. The actions to be implemented for each trigger are outlined in Sections 5.2 as referenced in Table 4.

Table 4: Trigger conditions for implementation of management actions.

Trigger Condition	Potential Risk to Receptor	Description of Risk to be Managed	SMP Section
Site development	Direct contact with impacted soils by site users	Lead and arsenic in shallow soils exceeding direct contact assessment criteria. Soils in Area A may pose an unacceptable risk to human health through dermal contact, ingestion and/or inhalation in the absence of control measures.	Section 5.2.2.1
	Vapour intrusion into: - New enclosed and occupiable spaces (including buildings with basements) - New enclosed structures	Petroleum hydrocarbons in soil and soil vapour exceeding vapour intrusion assessment criteria with the following potential risks if not mitigated appropriately: - Vapour intrusion risks into future occupiable spaces constructed within Area B. - Explosion risk associated with vapour accumulating within enclosed structures in Area B if an ignition source is present.	Section 5.2.2.2
	Building foundations, buildings slabs, basement constructions or underground infrastructure in contact with impacted soils	Petroleum hydrocarbons impacts in soils above management limits. Potential effects on buildings or underground infrastructure in Area C needs to be considered where utilities or other infrastructure are potentially in contact with significantly impacted soils.	Section 5.2.2.3
	Landscaped vegetation in contact with impacted soils	Soil contaminant concentrations exceeding ecological criteria across the site. Landscaped vegetation may be adversely impacted by concentrations of petroleum hydrocarbons in the soil.	Section 5.2.2.4
Earthworks and subsurface maintenance on site	Exposure to workers and site users to chemicals of interest through direct contact with excavated impacted soils	Lead and arsenic in shallow soils exceeding direct contact assessment criteria. Soils in Area A may pose a potential risk to human health through dermal contact, ingestion or inhalation in the absence of control measures.	Section 5.2.3.1
	Exposure of subsurface workers to vapours in excavations	Soil impacts representing potential risks to subsurface works via exposure to vapour have not been identified in the assessment work undertaken. However, given the history of the site, there is the potential for excavation works within Area D to encounter hydrocarbon impacts across the site that may result in vapour accumulation in trenches.	Section 5.2.3.1
	Asbestos in soils	Known ACM has been removed from the site during demolition works and clearance certificates issued for areas where asbestos identified to be present. Given the historic industrial use of the site and the known areas of industrial backfilling, soils impacted by asbestos in unknown locations may occur across Area D (refer to Section 3.3). Asbestos encountered during earthworks may	Section 5.2.3.1

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April 2023

1418584-405-R-Rev1

Trigger Condition	Potential Risk to Receptor	Description of Risk to be Managed	SMP Section
		pose an unacceptable risk to site users if exposed.	
	Soil management practices resulting in an increased level of risk to receptors	Uncontrolled excavations and the associated storage, stockpiling, containment, reuse and disposal of impacted soils may result in an unacceptable risk to human health or ecological receptors i.e., redistribution of impacted material closer to a receptor, ponded water that may increase leaching to groundwater or direct runoff of impacted material from a stockpiled area to surface water. This includes but is not limited to PFAS impacted soils most likely to be encountered in Area D.	Section 5.2.3.2
Installation of extraction wells	Exposure of site users to impacted groundwater	Should a groundwater well be installed at the site in future for extractive uses, groundwater concentrations may pose an unacceptable risk to users.	Section 5.2.4

5.2 General Management Actions

5.2.1 Overview

The management actions for the trigger conditions presented in Table 4 are discussed in the following sections.

5.2.2 Site development trigger

5.2.2.1 Direct contact with impacted soils

For the site development trigger, any future design for development in Area A must consider the need for the installation of a physical barrier to ensure that the risk to human health is acceptable. This must include:

- Design and implementation of a physical barrier suitable to the desired land use (e.g., access road, pavement, landscaping) to achieve acceptable levels of risk and subject to the conditions required in the Statement of Environmental Audit (0008005376).
- Verification of the physical barrier design by an Environmental Auditor prior to implementation, with this verification advised to the EPA and the planning authority in writing.
- Appointment of an Environmental Consultant to validate the construction of the physical barrier as per the design.
- Appointment of an Environmental Consultant to update this SMP with measures to monitor and maintain physical barriers.
- Appointment of an Environmental Auditor to verify the final construction of the physical barrier and any changes to this SMP.

The design of a physical barrier could include a layer of clean fill of 0.5 m depth or placement of concrete or road pavement or other physical barriers as agreed with an Environmental Auditor. The following physical barriers are usually acceptable:

- Concrete pavements of a minimum thickness of 100 mm
- Asphalt pavements of minimum 100 mm thickness including a gravel base

- c) Pavers mounted on a minimum of 100 mm of gravel or on a concrete base to avoid to the potential for movement between pavers
- d) A minimum thickness of 500 mm of imported soil meeting the chemical requirements of:
 - a. Fill Material as described in Section 5.2.3.3 (and guidelines replacing it).
 - b. Site adopted human health investigation levels (HILs) and ecological investigation levels (EILs) in line with the NEPM (2013).
 - c. A Marker Layer (constructed of Nonwoven Geotextile) placed directly underneath the soil physical barrier which is of suitable strength, durability, and visibility.

Other physical barriers may be acceptable as long as they meet the following key principles:

- Provide a cover over the contaminated soils.
- Be robust such that it prevents routine access.
- Be generally low maintenance in relation to erosion.
- Promote surface water runoff.
- Be approved in writing by an Environmental Auditor.

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5.2.2.2 Vapour intrusion

For the site development trigger, any future design and construction of occupiable spaces in Area B must consider the need for installation of a vapour mitigation system to ensure that the risk to human health is acceptable. This must include:

- An assessment of vapour intrusion risk to the proposed building or occupiable space by an Environmental Consultant, dependent upon whether the building will be slab on grade or have a basement.
- Design and implementation of a vapour mitigation system including preparation of a construction quality assurance plan by a suitably qualified professional, if required, to achieve an acceptable level of risk. The works must be installed by a suitably competent contractor and supervised by a suitably qualified professional.
- Verification of the vapour mitigation system design by an Environmental Auditor prior to implementation, with this verification advised to the EPA and the planning authority in writing.
- Appointment of an Environmental Auditor to validate that the vapour mitigation system is constructed and/or operating as per the design.
- Appointment of an Environmental Consultant to update this SMP with measures to monitor and maintain vapour mitigation systems if implemented.
- Appointment of an Environmental Auditor to verify the changes to the SMP.

5.2.2.3 Underground infrastructure contacting impacted soils

For the site development trigger, any future design for the development in Area C must consider the risk to underground infrastructure, building foundations or structural footings to ensure the risk to the structure or infrastructure is acceptable. This must include:

- An assessment of corrosive risk to the proposed underground infrastructure, building foundations or structural footings by a suitably qualified person such as a geotechnical or civil engineer.

- Where required, construction of underground infrastructure, building foundations or structural footings with materials designed to withstand the impacted soil conditions and in accordance with relevant Australian Standards.

5.2.2.4 Landscaped vegetation contacting impacted soils

For the site development trigger, future landscaping design and any undeveloped areas of the site must be constructed with at least 0.5 m thickness of clean fill material below the finished surface to support future root growth and protect vegetation from contact with residual contamination in soils.

Fill imported for this purpose must be suitable for the site and consistent with soil classified as 'fill material' in accordance with the Environment Protection Regulations 2021, EPA Publication 1828.2 (or equivalent regulatory guidance at the time) and evidence of compliance provided to EPA or the planning authority.

5.2.3 Earthworks on site

The general principles related to earthworks undertaken on the site as follows:

- Disturbance of soils and wastes at the site should be minimised
- Excavation at the site should be undertaken in accordance with specific OH&S Protocols developed for the work undertaken;
- Should asbestos be uncovered during excavation works, an occupational hygienist should be on-call to manage the potential risk posed by asbestos
- Generation of excess soils and wastes from the site should be minimised
- Any off-site disposal of soils or waste from the site should be undertaken in accordance with this SMP and
- Movement of soils should be tracked to manage the knowledge of the contamination status of soil on-site.

For the earthworks trigger condition, the following management actions for risks identified must be implemented.

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5.2.3.1 Contact with impacted soils or vapour during excavations

The following management actions are required when conducting earthworks or excavating trenches, pits or deep holes for construction in Area D:

- An Occupational Health and Safety (OH&S) Plan must be prepared and reviewed by an occupational hygienist for excavation works with reference to this SMP and the plan must consider potential risks posed by the known soil, soil vapour and groundwater contamination as well as unexpected finds of contaminated soil at the site.
- If any soils displaying objectionable aesthetics such as odours, vapours, wastes, potential asbestos containing material or discolouration are encountered, stop work and assess conditions with respect to the OH&S plan. These soils must not be left at the surface following completion of the earthworks.

5.2.3.2 Soil disturbance, management and disposal

The disturbance of soils on site has the potential to result in increased risks to receptors, and particularly environmental receptors where not undertaken in a controlled manner. In particular, undertaking bulk earthworks in an uncontrolled manner has the potential to result in increased rates of leaching of PFAS from site soils or the uncontrolled discharge of PFAS impacted surface water from the site.

It should be noted that although the PFAS concentrations in soil may be below human health criteria for continued industrial/commercial use, criteria applicable to groundwater and surface water receptors are several orders of magnitude lower. Therefore, PFAS in soil still represents a risk to groundwater/surface water receptors (via leaching/runoff) if not managed appropriately.

The following procedures should be followed as a minimum when excavating soil at the site within Area D (along with specific controls as noted below):

- Subsurface soils beneath physical barriers (Area A) should be assumed to be contaminated (unless demonstrated otherwise)
- Excavations should be kept as shallow as practicable
- Excavations should be left open for the minimum possible length of time
- Excavations should be undertaken in a staged manner to reduce the area of exposed disturbed soil and minimise the potential for the generation of standing water in large excavations.

For storage, stockpiling, containment, or reuse of soils on site, the Environmental Consultant must evaluate whether additional management measures are required such as managed stockpiles, vapour mitigation or a screening risk assessment for PFAS impacted soils. This SMP must then be updated with these measures.

An Environmental Consultant must be engaged to classify the soil for off-site disposal, treatment or reuse. Soil must be sampled in accordance with EPA Publication IWRG702 'Soil Sampling', dated June 2009 (or equivalent regulatory guidance at the time) and analysed for potential contaminants and classified in accordance with the following guidance (or equivalent regulatory guidance at the time):

- EPA Publication IWRG702, "Soil Sampling", June 2009
- EPA Publication 1968.1, "Guide to classifying industrial waste", April 2021
- EPA Publication 1828.2, "Waste Disposal Categories – Characteristics and Thresholds", March 2021
- EPA Publication F127, "Application for waste designation", July 2021
- Government of Victoria, "Gazette No. S26 Designation of the Authority under regulation 86(1) of the environment protection regulations 2021 Classification of PFAS-impacted soil", 20 January 2022
- HEPA 2020, "PFAS National Environmental Management Plan Version 2.0 – January 2020", January 2020

Contaminated soil and waste transport, disposal and tracking must be completed in accordance with EPA Publication 1828.2, dated March 2021 (or equivalent regulatory guidance at the time).

5.2.3.3 Importation of soil

All soil imported onto the site during construction must meet the definition of 'Fill Material' as set out in EPA Publication 1828.2, dated March 2021 (or equivalent regulatory guidance at the time). Soil must be sampled at a rate in accordance with EPA Publication IWRG702 'Soil Sampling' (or equivalent regulatory guidance at the time).

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5.2.4 Installation of extraction wells

Groundwater at the site is contaminated and is not suitable for the extractive environmental values listed in Section 3.4. As noted in Section 3.4 the site is within an area of restricted groundwater use⁵ (Figure 10).

Groundwater must not be extracted and used without the groundwater quality being tested and the result reviewed by an Environmental Consultant to confirm its suitability for the proposed use. Groundwater may be extracted for the purpose of environmental monitoring.

5.3 Contingency Actions

Table 5 identifies contingency actions to be implemented in the event of unexpected exposure of site occupants or visitors to contamination on the site or the potential for exposure occurs.

Table 5: Contingency actions

Trigger	Action
Unauthorised excavations	If excavations are in process: - Stop work and contact the Site Manager and Site Owner. - Assume excavated materials are contaminated until proven otherwise. - Stockpile excavated material on an impervious surface (concrete slab or minimum two layers of builders plastic), cover stockpile and bund to prevent surface water run-off. - Site Manager to engage an experienced environmental consultant and /or occupational hygienist to assess exposure of workers to potentially contaminated materials. If excavations have occurred and the area has been reinstated: - Assess condition of surface soils in the work area against appropriate land use criteria and ensure contaminated soils do not remain on the site. - Instigate preventative action to limit the potential for reoccurrence.
Unexpected Finds. Identification of unexpected, contaminated materials during excavation works on the site	If unexpected contamination⁶ is encountered during excavation works, the following actions must be taken: - Stop work and contact the Site Manager and Site Owner. - Stockpile suspected contaminated material which has been excavated on an impervious surface (concrete slab or minimum two layers of builders plastic), cover stockpile and bund to prevent run-off. - Site Manager to engage an experience environmental consultant to assess potentially contaminated materials. - Update the SMP. Adverse conditions which may warrant action include: - Highly malodorous soils or seepage water (e.g., strong residual petroleum odours) - Hydrocarbon sheen on surface water - Discoloured chemical deposits or soil staining with chemical waste other than of a minor nature - Presence of cinder or glass like material - Presence of objects which may indicate the presence of chemical contamination, such as drums, tanks or other such storage items - Presence of asbestos containing materials (ACM).
Other	Liaise with Site Manager / Site Owner to determine appropriate actions to mitigate adverse impacts from the event.

⁵ Previously identified as a Groundwater Quality Restricted Use Zone (GQRUZ).

⁶ Contamination may include, but not be limited to, hydrocarbons, PFAS, metals and asbestos.

6.0 GENERAL ENVIRONMENTAL MANAGEMENT

6.1 Overview

Notwithstanding the trigger conditions and management actions previously discussed, the following general health and safety and site management issues must be followed as a minimum when works are conducted within the subsurface at the site.

6.2 Tendering for Construction or Development

All Contractors tendering for the work scope of any future construction or development must be provided a copy of this SMP. The tender must specifically request a response on how the tenderer proposes to manage their obligations under this SMP.

6.3 General Environmental Management Obligations

As discussed in Section 1.0 the cornerstone of the Environment Protection (EP) Act 2017 is the general environmental duty, which requires Victorians to understand and minimise their risks of harm to human health and the environment, from pollution and waste. Section 35 of the Act outlines duties and requirements in relation to contaminated land and includes the duty to manage and the duty to notify of notifiable contamination. The general environmental duty applies to all stages of development and to site owners and their contractors.

Good environmental management procedures followed by all contractors working on the site. It is the responsibility of the site contractors to manage their works to minimise the potential impacts on the site and the surrounding environment. Such procedures must include:

- Appropriate chemical and fuel storage
- Refuelling of equipment to reduce the risk of spillage
- Appropriate waste control and disposal methods
- Minimise dust generation
- Minimise off-site tracking of soil
- Control, management and discharge of stormwater

The above environmental management obligations are common to all development sites in Victoria and so have not been further documented as part of this SMP. The environmental management procedures adopted for the works must be documented by the contractor in accordance with this SMP.

6.4 Occupational Health and Safety

Managers, contractors and subcontractors who might disturb soil, soil vapour and groundwater contamination during works on this site remain responsible for all health and safety issues associated with their activities and development of appropriate health and safety procedures. In particular:

- An Occupational Health and Safety (OH&S) Plan must be prepared and reviewed by an occupational hygienist for such works with reference to this SMP. The Plan must consider potential risks posed by the

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known soil, soil vapour and groundwater contamination as well as unexpected finds of contaminated soil at the site.

- A site induction must be provided for all workers involved in these activities to inform them of the specific health and safety issues and relevant procedures of the works to be undertaken.

6.5 General Excavation Principles

The general principles related to earthworks undertaken on the site are as follows:

- Disturbance of soils and wastes at the site must be minimised.
- Excavation at the site must be undertaken in accordance with specific OH&S Protocols developed for the work undertaken. Protective personal equipment (PPE) to be used by site workers during excavation will be specified dependent on the type and purpose of excavation.
- If objectionable odours, vapours, wastes, potential asbestos containing material in soil, or discoloured soil are encountered, then work at the location must cease and the Site Owner or delegate must be contacted. The Site Owner or delegate must contact an Environmental Consultant or Occupational Hygienist to confirm any additional actions that must be taken beyond the requirements of the SMP.
- Generation of excess soils and wastes and off-site disposal of soils or waste from the site must be minimised. Such off-site disposal must be undertaken in accordance with this SMP.
- All works which involve the detection of an unexpected find during construction or maintenance must be documented as to their compliance with the requirements of this SMP and if necessary, this SMP updated to reflect any change in the understanding of potential risk of harm

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7.0 DOCUMENTATION AND REVIEW

7.1 Records of Monitoring and Inspection

Records of all construction, earthworks or maintenance activities undertaken in accordance with this SMP must be kept in one place at a location nominated by the Site Owner so that the information can be easily reviewed.

An example pro-forma for intrusive earthwork tasks specific to this SMP has been provided in Appendix B. The tasks specific to the SMP must be approved by the Site Owner. The SMP must be followed throughout the intrusive works and documentation regarding compliance must be made in accordance with the requirements outlined in the SMP.

7.2 Review by Environmental Consultant

Every 5 years, the SMP must be reviewed by an Environmental Consultant to confirm that it remains consistent with current environmental legislation and guidance.

From time to time, the Site Owner may also request an Environmental Consultant or an Environmental Auditor to review the SMP and its associated documentation with a view to changing the SMP to improve its efficiency or effectiveness in achieving the required objectives.

7.3 Revision of this SMP

The SMP will remain in place until such time as:

- An Environmental Auditor has verified in writing that the SMP is no longer required, and
- Environmental Auditor verification is provided to EPA and the relevant planning authority.

Any changes to this SMP shall be reviewed by an Environmental Auditor. Revision 0 of this SMP dated March 2023 has been prepared post site remediation as summarised in Section 3.2 and is relevant to management of risks post demolition of the petroleum storage facility. Management of risks as part of any future construction is to be undertaken by any development contractor engaged in the future.

It would be prudent for the Site Owner to update this SMP post development works to ensure that residual contamination representative of the site post development is current to inform future management requirements.

Should the land use change or the site be redeveloped in the future, a new assessment or revised SMP would need to be implemented depending on the proposed use and/or the type of remediation or development undertaken.

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8.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled - "Important Information Relating to this Report-Mobil", which is included in Appendix C of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client

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9.0 REFERENCES

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Signature Page

Golder Associates Pty Ltd



Tracey Main
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Andrew Hart
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APPENDIX A

Figures

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LEGEND

Area Retained by Mobil

Land acquired by Westgate Tunnel Project in June 2019

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REFERENCE(S)
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2. ROAD DATA © THE STATE OF VICTORIA, DEPARTMENT OF ENVIRONMENT, WATER, LAND AND PLANNING, 2015.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 14/09/2022.

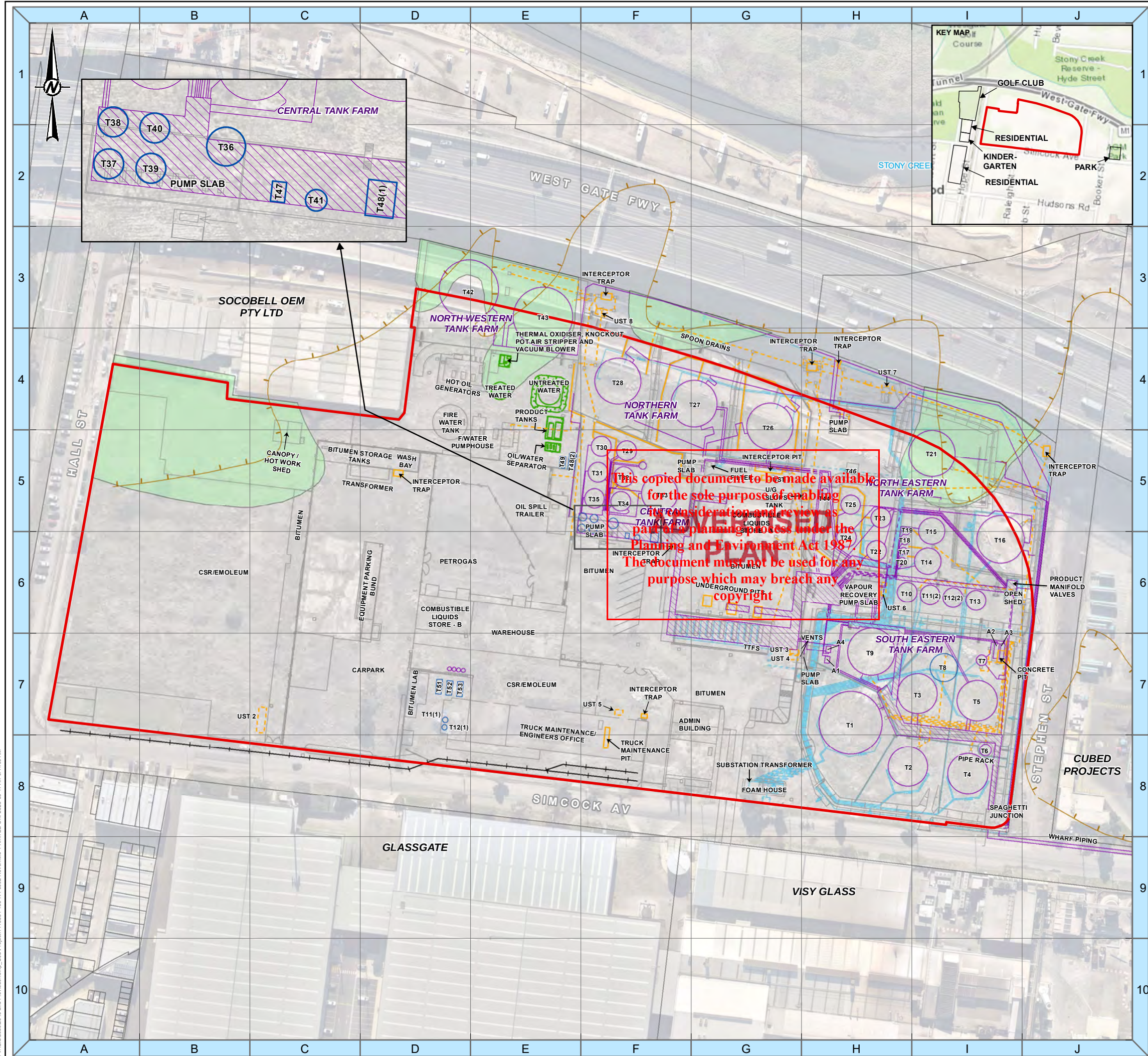
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
SITE LOCATION PLAN

CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 1



- LEGEND**
- Site Boundary
 - Cadastre Boundary
 - Railway
 - Former Quarry
 - Former General Infrastructure
 - Former Fuel Infrastructure (Above Ground)
 - Former Fuel Infrastructure (Underground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Historical Tank Location 1970 - 1991
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)

Tanks					
Feature	Grid Ref	Feature	Grid Ref	Feature	Grid Ref
T1	H-7	T21	I-5	T42	D-3
T2	H-8	T22	H-6	T43	E-3
T3	I-7	T23	H-5	T44	H-5
T4	I-8	T24	H-6	T46	H-5
T5	I-7	T25	H-5	T47	F-6
T6	I-8	T26	G-4	T48 (1)	F-6
T7	I-7	T27	G-4	T48 (2)	E-5
T8	I-7	T28	F-4	T49	E-5
T9	H-7	T29	F-5	T51	D-7
T10	H-6	T30	F-5	T52	D-7
T11 (1)	D-7	T31	F-5	T53	D-7
T11 (2)	I-6	T32	F-5	BT1	D-7
T12 (1)	D-7	T33	F-5	BT2	D-7
T12 (2)	I-6	T34	F-5	UST 1	G-5
T13	I-6	T35	F-5	UST 2	C-7
T14	I-6	T36	F-5	UST 3	G-7
T15	I-6	T37	F-5	UST 4	G-7
T16	I-6	T38	F-5	UST 5	F-7
T17	H-6	T39	F-5	UST 6	H-6
T18	H-6	T40	F-5	UST 7	H-4
T19	H-6	T41	F-6	UST 8	F-3
T20	H-6				

Additional Site Features	
Spaghetti Junction	I-8
Combustible Liquids Store A	G-5
Combustible Liquids Store B	D-6
Bitumen Storage Tanks	D-5
Foam House	G-8
TTFS	G-7
Hot Oil Generators	D-4
Rail Sidings	A8-F8



NOTE(S)
PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
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SPOTSWOOD TERMINAL (31XX)

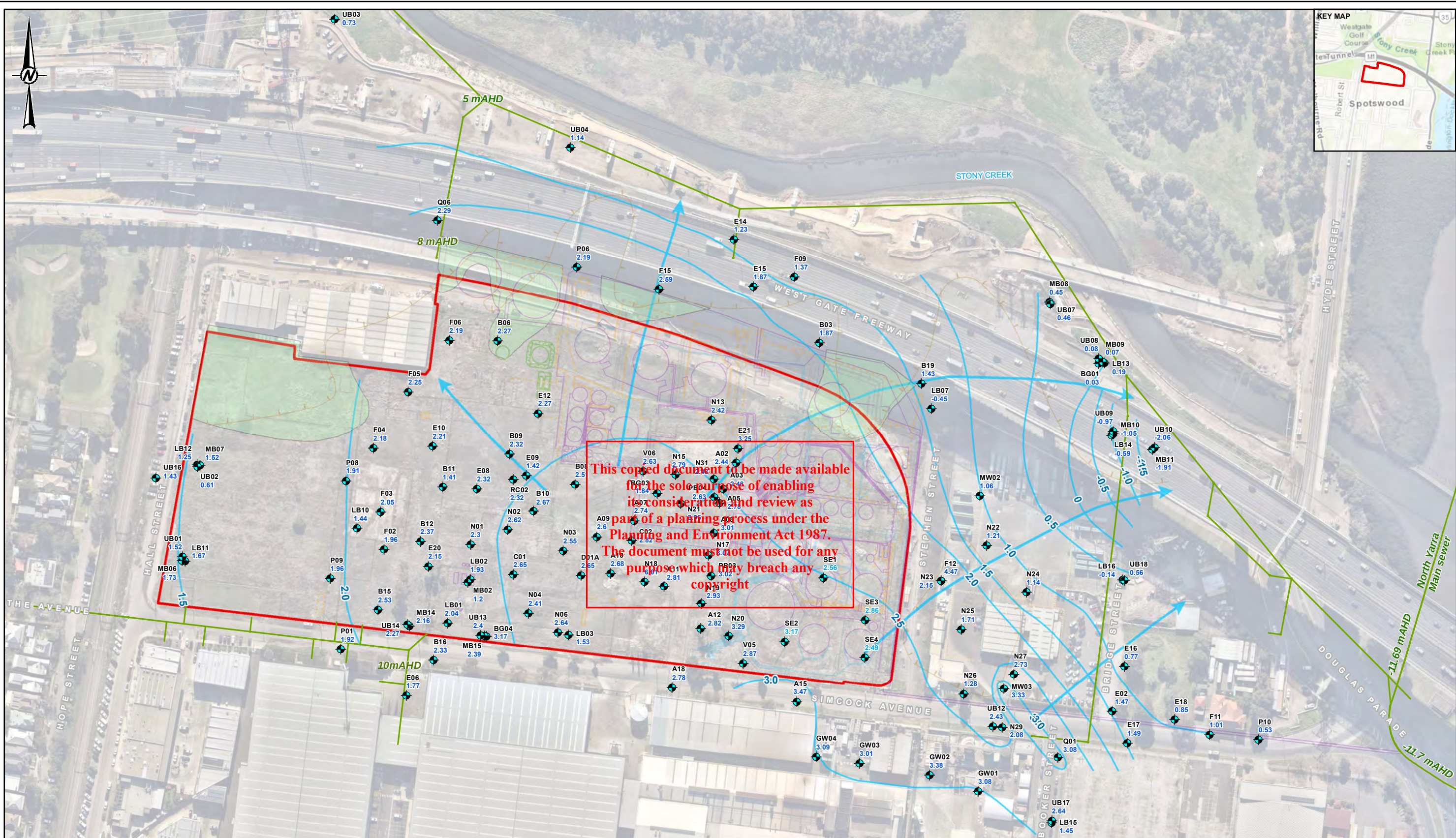
TITLE
FORMER SITE LAYOUT AND INFERRED EXTENT OF FORMER QUARRIES

CONSULTANT	YYYY-MM-DD	2023-03-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

PROJECT NO. 1418584 **CONTROL** 405-R **REV.** 0 **FIGURE** 2

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3



- LEGEND**
- Site Boundary
 - Sewer
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)

- Jan/Feb 2022 Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction
- Upper Basalt Groundwater Well
- 2.12 Jan/Feb 2022 Groundwater Elevation (m AHD)
- 2.12 Sep 2022 Groundwater Elevation (m AHD) - Not Used In Contour Plot

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MOBIL OIL AUSTRALIA PTY LTD

CONSULTANT	YYYY-MM-DD	17/03/2023
DESIGNED	-	
PREPARED	MAH/LG	
REVIEWED	CM	
APPROVED	JMM	

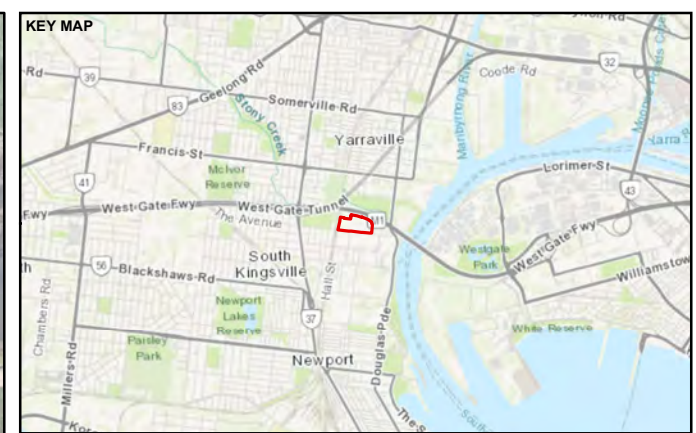
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REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
4. INFORMATION ON SEWER LOCATION AND INVERT LEVELS IMMEDIATELY SURROUNDING THE SITE TAKEN FROM THE ENVIRONMENTAL AUDIT REPORT (CARDNO, 2012).
5. INFORMATION ON MAIN TRUNK SEWER LOCATIONS AND INVERT LEVELS PROVIDED BY CITY WEST WATER.

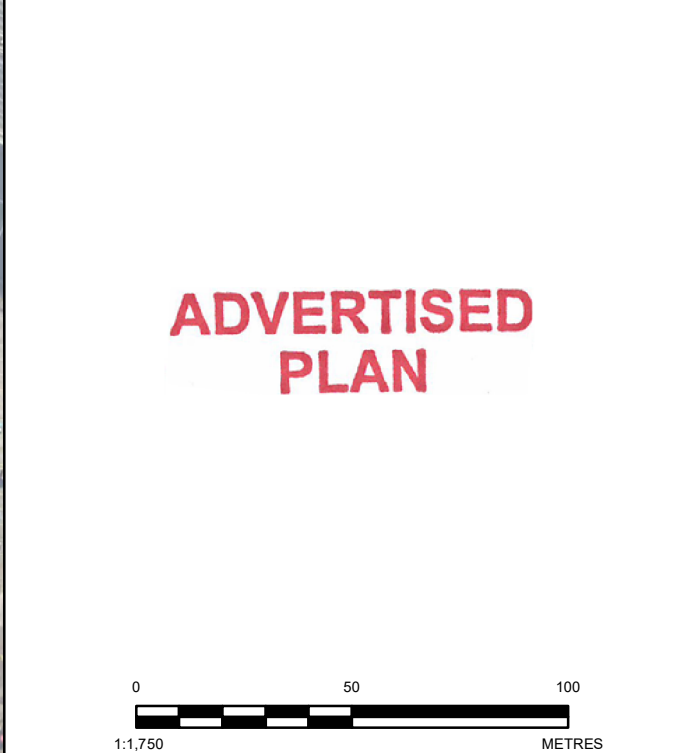
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
GROUNDWATER CONTOUR PLOT JAN/FEB 2022
UPPER BASALT

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	405-R	0	3



- LEGEND**
- Site Boundary
 - Land Acquired for Road Construction
 - Deep Concrete Footing
 - Underground Pit
 - Concrete Slab
 - Brick Walls Delineated
 - Brick Walls Inferred



NOTE(S)
PROJECTION: GDA 1994 MGA ZONE 55

- REFERENCE(S)**
- KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
 - STATE REFERENCE DATA SOURCED FROM DATA.VIC.GOV.AU.
 - AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 14/09/2022.

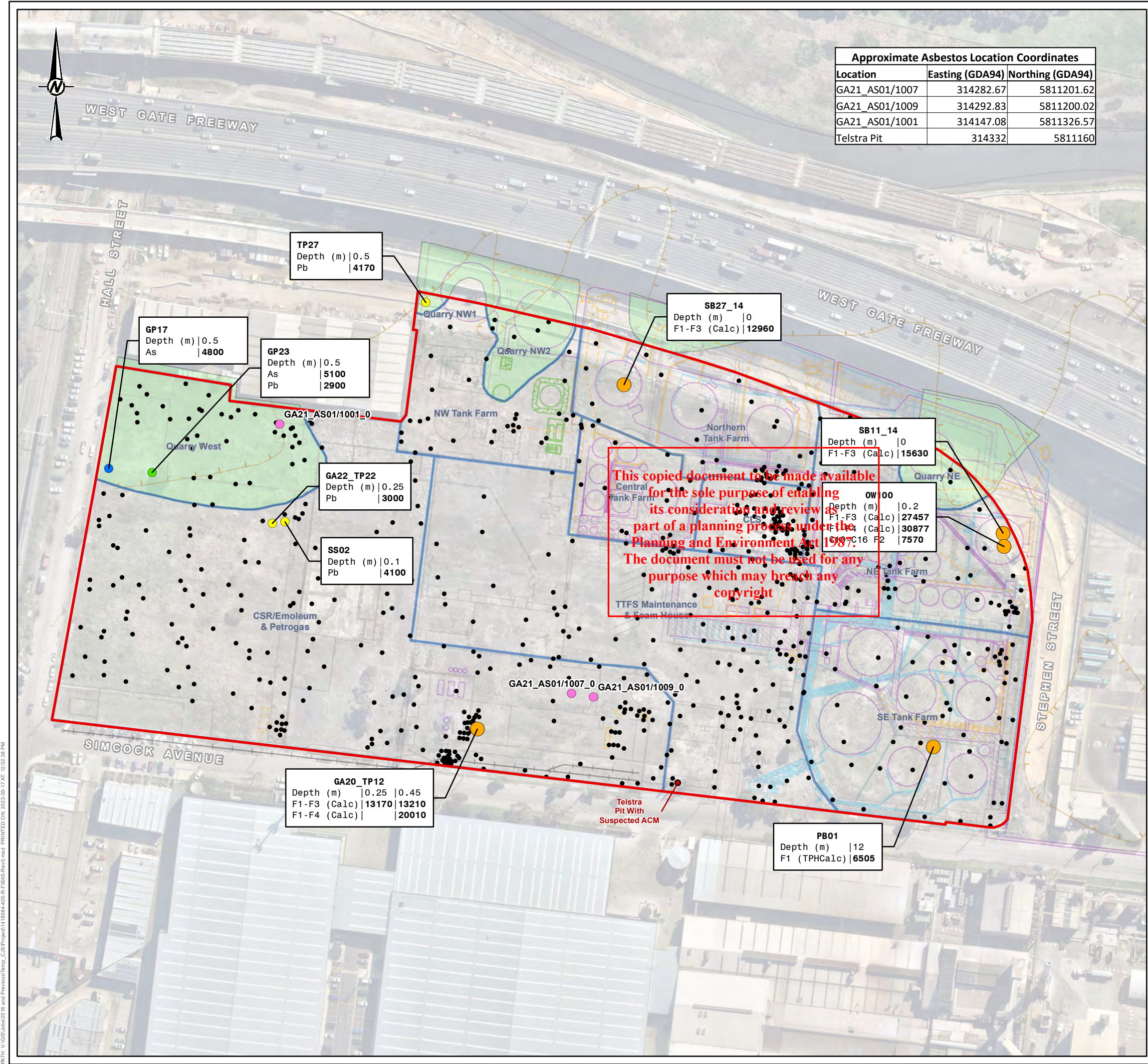
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
KNOWN INFRASTRUCTURE REMAINING ONSITE

CONSULTANT	YYYY-MM-DD	2023-03-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 4



KEY MAP

LEGEND

- Site Boundary
- Soil Assessment Domain Boundary
- Former Fuel Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Underground)
- Former Remedial Infrastructure
- Former Foam Line
- Former Quarry
- Former General Infrastructure
- Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
- Suspected Asbestos Location
- Soil Sample Not Exceeding Criteria

Management Limits TPH Exceedance - Free Phase Formation

-

NEPM HIL Direct Contact Exceedances

- Arsenic Exceedance
- Arsenic and Lead Exceedance
- Lead Exceedance

Asbestos in Soil Exceedance

-

ADVERTISED PLAN

0 50 100
1:1,750 METRES

NOTE(S)

- PROJECTION: GDA 1994 MGA ZONE 55.
- ONLY CHEMISTRY RESULTS EXCEEDING CRITERIA ARE SHOWN. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

- AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 14/09/2022.
- STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
- KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

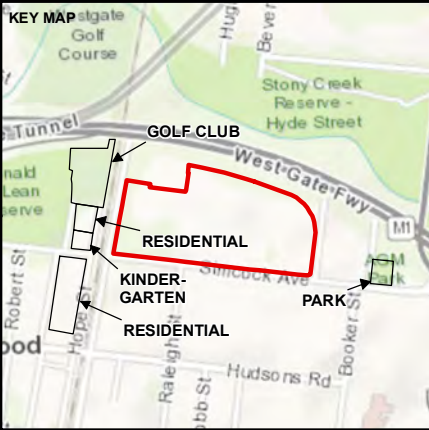
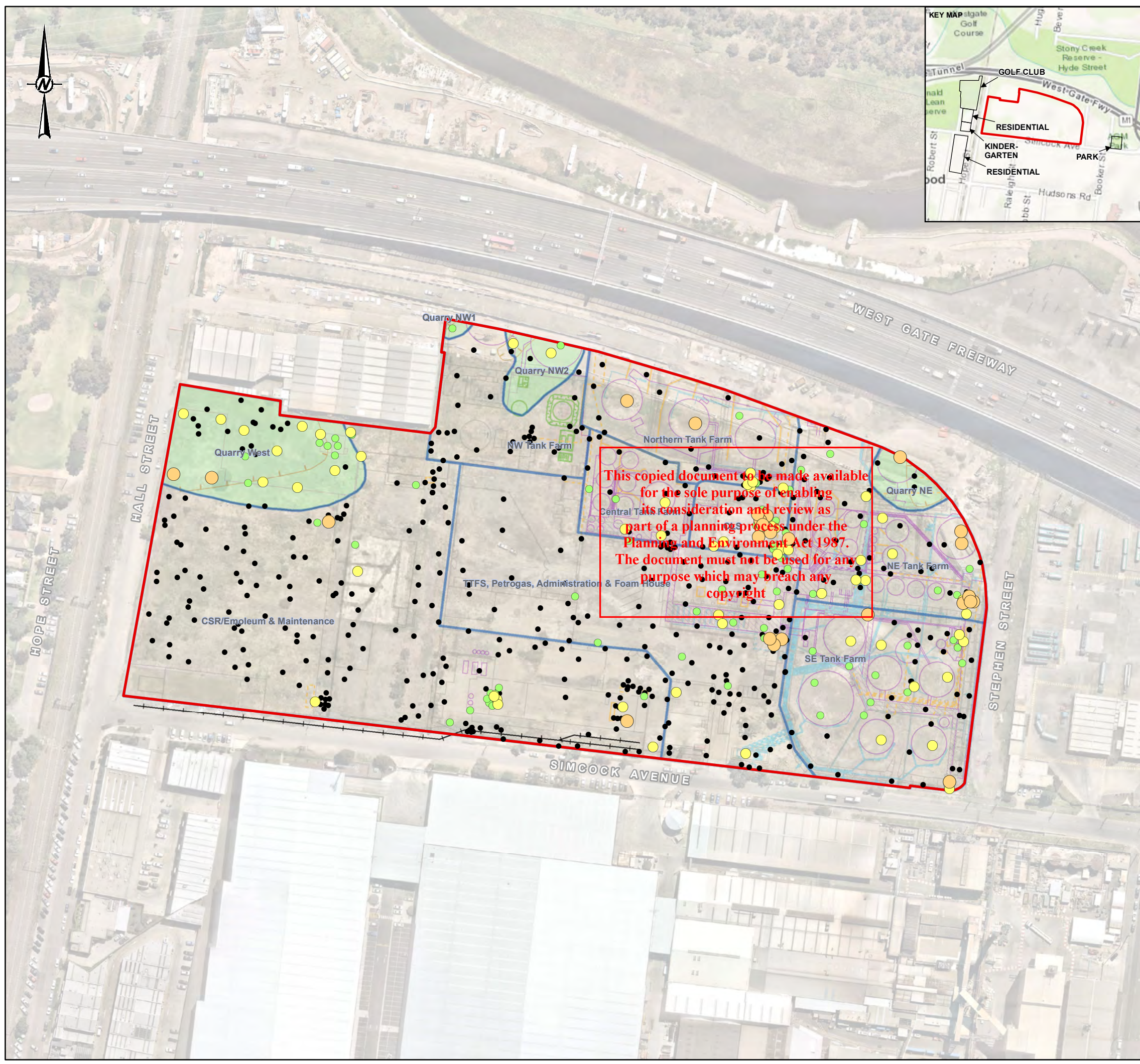
TITLE
HUMAN HEALTH AND TPH MANAGEMENT LIMITS
SCREENING CRITERIA EXCEEDANCE LOCATIONS IN SOILS

CONSULTANT	YYYY-MM-DD	2023-03-17
DESIGNED	-	
PREPARED	MAH	
REVIEWED	CM	
APPROVED	JMM	

PROJECT NO. 1418584 **CONTROL** 405-R **REV.** 0 **FIGURE** 5

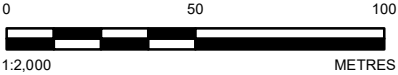
RATH: V:\GIS\Jobs\2016 and Previous\Temp_CIS\Project\1418584-405-R-F005-Rev0.mxd PRINTED ON: 2023-03-17 AT: 2:02:38 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3 297mm



- LEGEND**
- Site Boundary
 - Soil Assessment Domain Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
- Ecological Criteria Exceedance Risk Rating**
- All Results Below Ecological Criteria (Hazard Quotient 1 Or Below)
 - Low To Negligible Risk (Hazard Quotient >1 - 3)
 - Moderate Risk (Hazard Quotient >3 - 10)
 - Moderate To High Risk (Hazard Quotient >10)

**ADVERTISED
PLAN**



NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55
2. MAXIMUM HAZARD QUOTIENT IS SHOWN FOR EACH LOCATION.

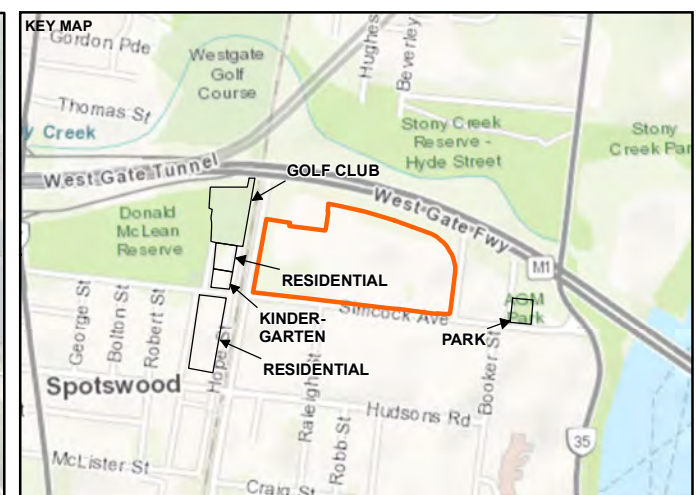
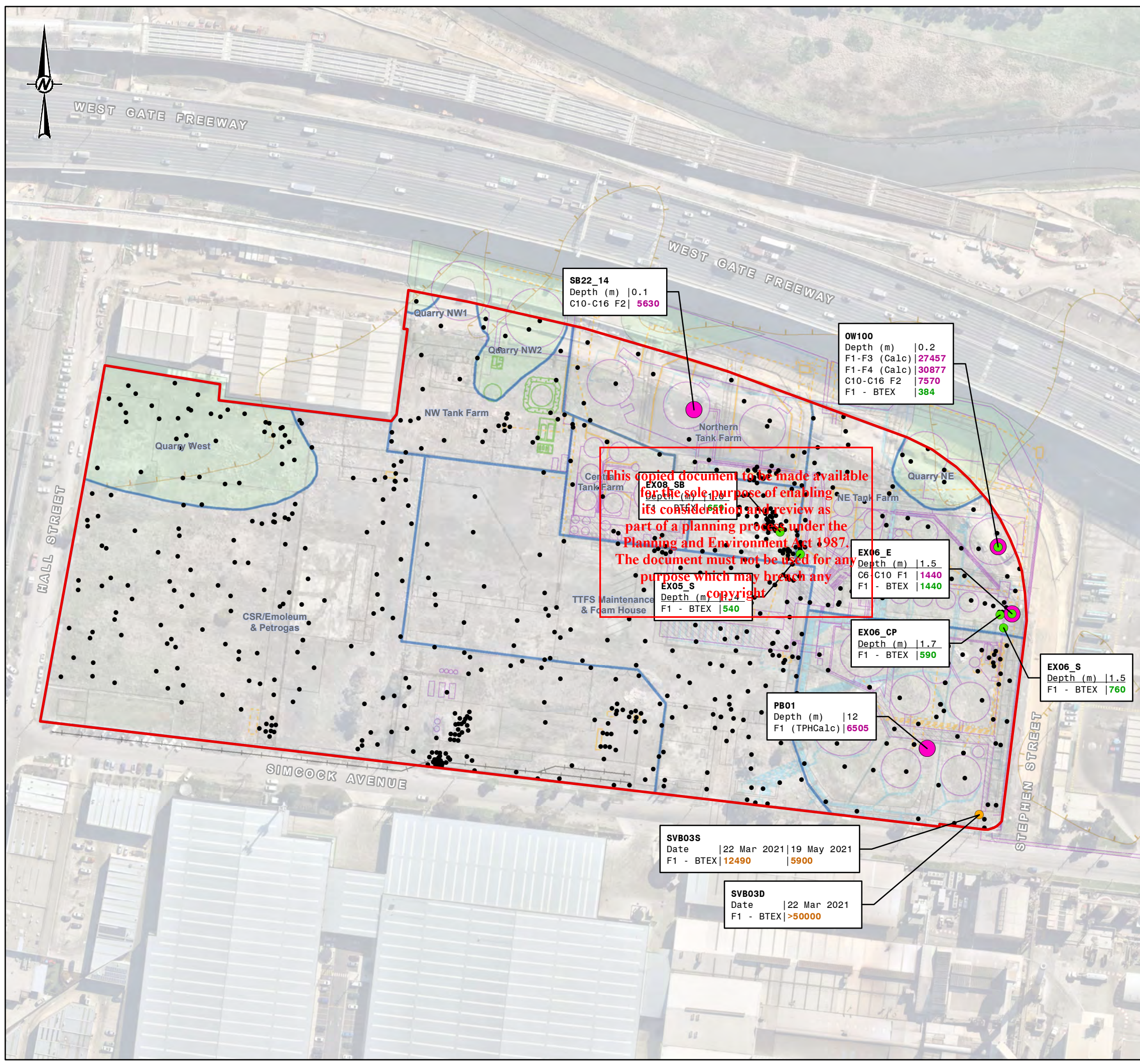
REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 27/10/2021.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
ECOLOGICAL CRITERIA EXCEEDANCES RISK RANKING

CONSULTANT 	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM



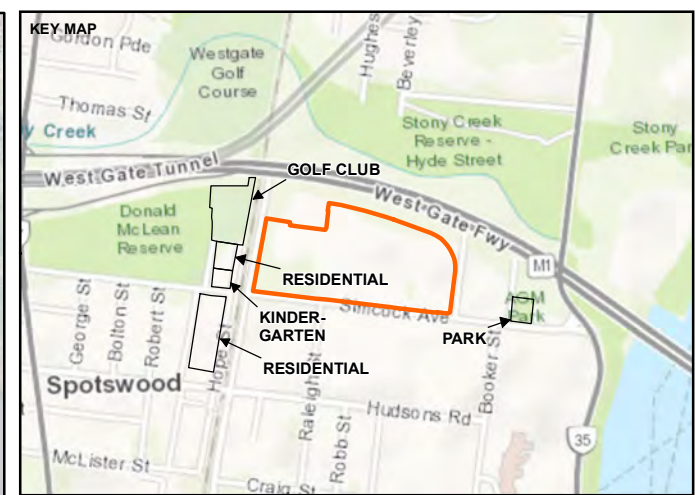
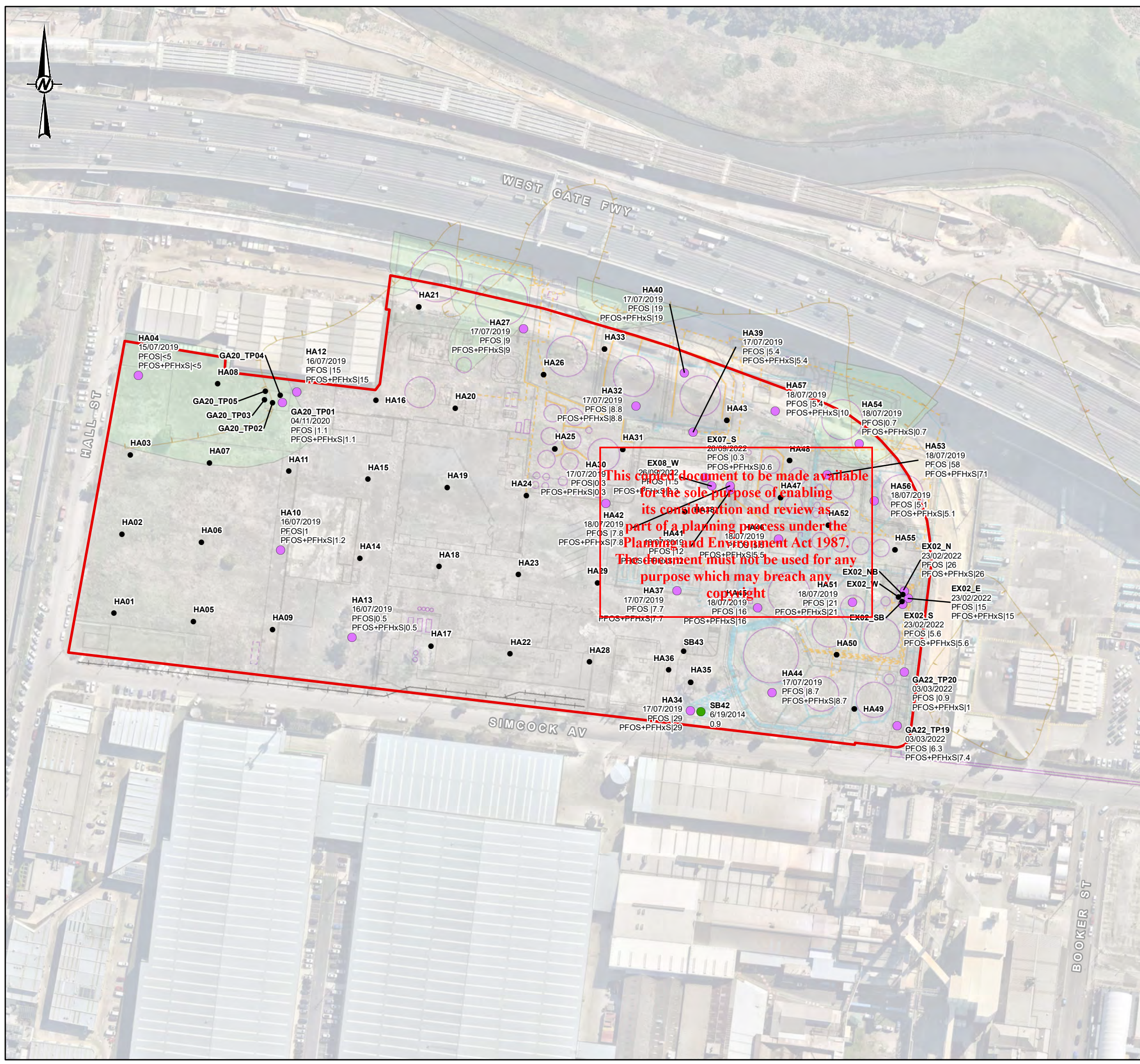
- LEGEND**
- Site Boundary
 - Soil Assessment Domain Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Soil Sample Not Exceeding Criteria
 - Management Limits Exceedance - Fire and Explosive Hazards
 - NEPM HSL Soil Vapour Intrusion Exceedance
 - Soil Vapour Risk-Based Criteria Exceedance

ADVERTISED PLAN

0 50 100
1:1,750 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.
2. ONLY CHEMISTRY RESULTS EXCEEDING CRITERIA ARE SHOWN. REFER TO REPORT TABLES FOR THE FULL DATASET. SOIL RESULTS IN MG/KG, VAPOUR RESULTS IN MG/M³.
REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 14/09/2022.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT MOBIL OIL AUSTRALIA PTY LTD		
PROJECT COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)		
TITLE VAPOUR INTRUSION CRITERIA EXCEEDANCE LOCATIONS IN SOIL, SOIL VAPOUR AND GROUNDWATER		
CONSULTANT 	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
PROJECT NO. 1418584	CONTROL 405-R	APPROVED JMM
	REV. 0	FIGURE 7



- LEGEND**
- Site Boundary
 - PFAS Below Limit of Reporting
 - PFAS Detected in Soil (ug/kg)
 - Historic Soil PFOS Sample (ug/kg)
- PFOS+PFHXS = Sum of PFHXS and PFOS (lab reported)

ADVERTISED PLAN

0 50 100
1:2,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55
2. SOIL CONCENTRATIONS ARE THE MAXIMUM CONCENTRATION RECORDED AT LOCATION.

REFERENCE(S)
1. IMAGERY & KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. FOAM LINE INFORMATION SOURCED FROM FIGURE 5A, URS (2012B).
3. ROAD DATA © THE STATE OF VICTORIA, DEPARTMENT OF ENVIRONMENT, WATER, LAND AND PLANNING, 2015.

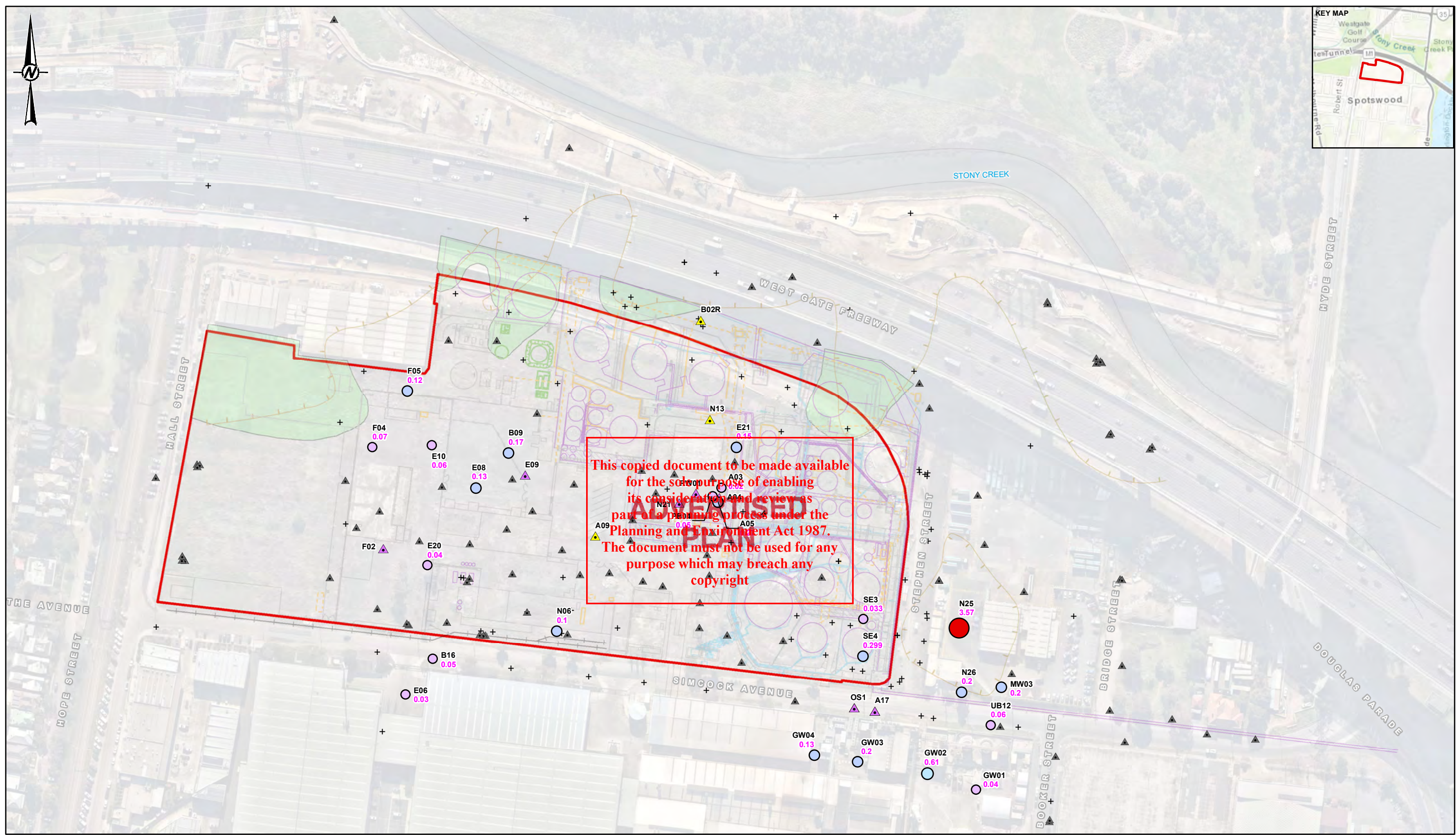
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
SOIL PFOS AND PFOS + PFHXS CONCENTRATIONS

CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 8

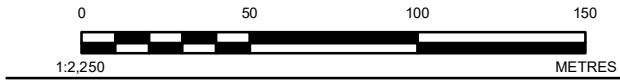


LEGEND

- Site Boundary
- Former Fuel Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Above Ground)
- Former Waste and Runoff Collection Infrastructure (Underground)
- Former Remedial Infrastructure
- Former Foam Line
- Former Quarry
- Former General Infrastructure
- Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
- LNAPL Not Measurable With Interface Probe But Observed With Bailer

- 2.12 Jan/Feb 2022 Apparent LNAPL Thickness (m)
- Indirect Evidence of LNAPL
 - LNAPL Not Encountered At Most Recent Gauging
 - Monitoring Well Decommissioned/Lost/Destroyed

Apparent LNAPL Thickness (m)			
0.0 - 0.1	1.5 - 2.0	3.5 - 4.0	
0.1 - 0.5	2.0 - 2.5	4.0 - 4.5	
0.5 - 1.0	2.5 - 3.0	4.5 - 5.0	
1.0 - 1.5	3.0 - 3.5		



CLIENT
MOBIL OIL AUSTRALIA PTY LTD

CONSULTANT	YYYY-MM-DD	17/03/2023
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

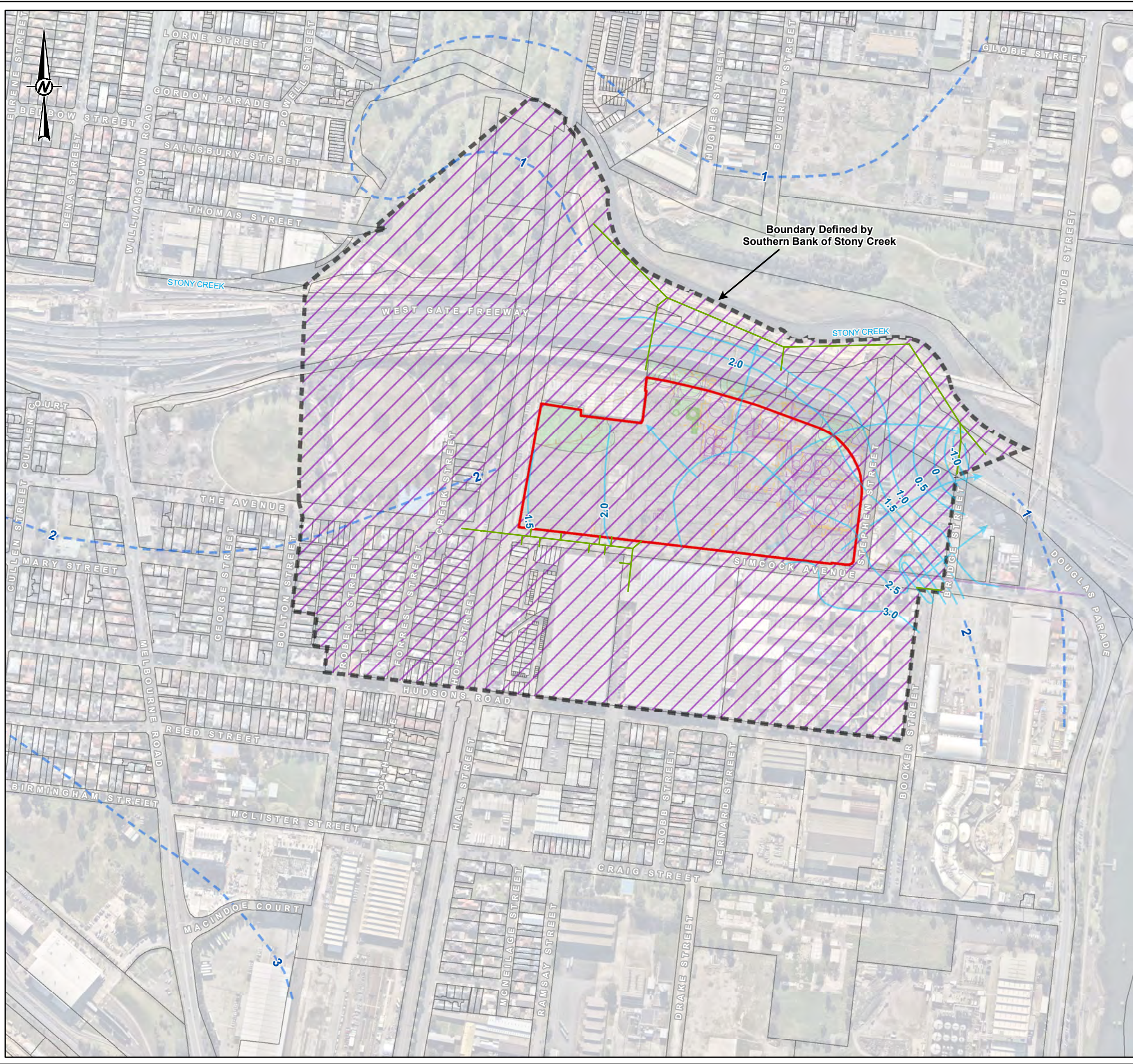
wsp **GOLDER**

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55
2. ALL LNAPL DATA OBTAINED DURING THE JAN/FEB 2022 GME WITH THE EXCEPTION OF SE1-SE4 DATA OBTAINED IN SEP 2022.

REFERENCE(S)
1. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.

COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)
TITLE
APPARENT LNAPL THICKNESS 2022

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	405-R	0	9



- LEGEND**
- Site Boundary
 - Cadastre Boundary
 - Proposed Area of Restricted Groundwater Use
 - Former Fuel Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Quarry
 - Former General Infrastructure
 - Sewer
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Jan/Feb 2022 Upper Basalt Groundwater Elevation Contour (m AHD)
 - Inferred Groundwater Flow Direction
 - Approximate Regional Groundwater Elevation Contour (m AHD) - Westgate Tunnel EES

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ADVERTISED PLAN



NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/07/2022.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

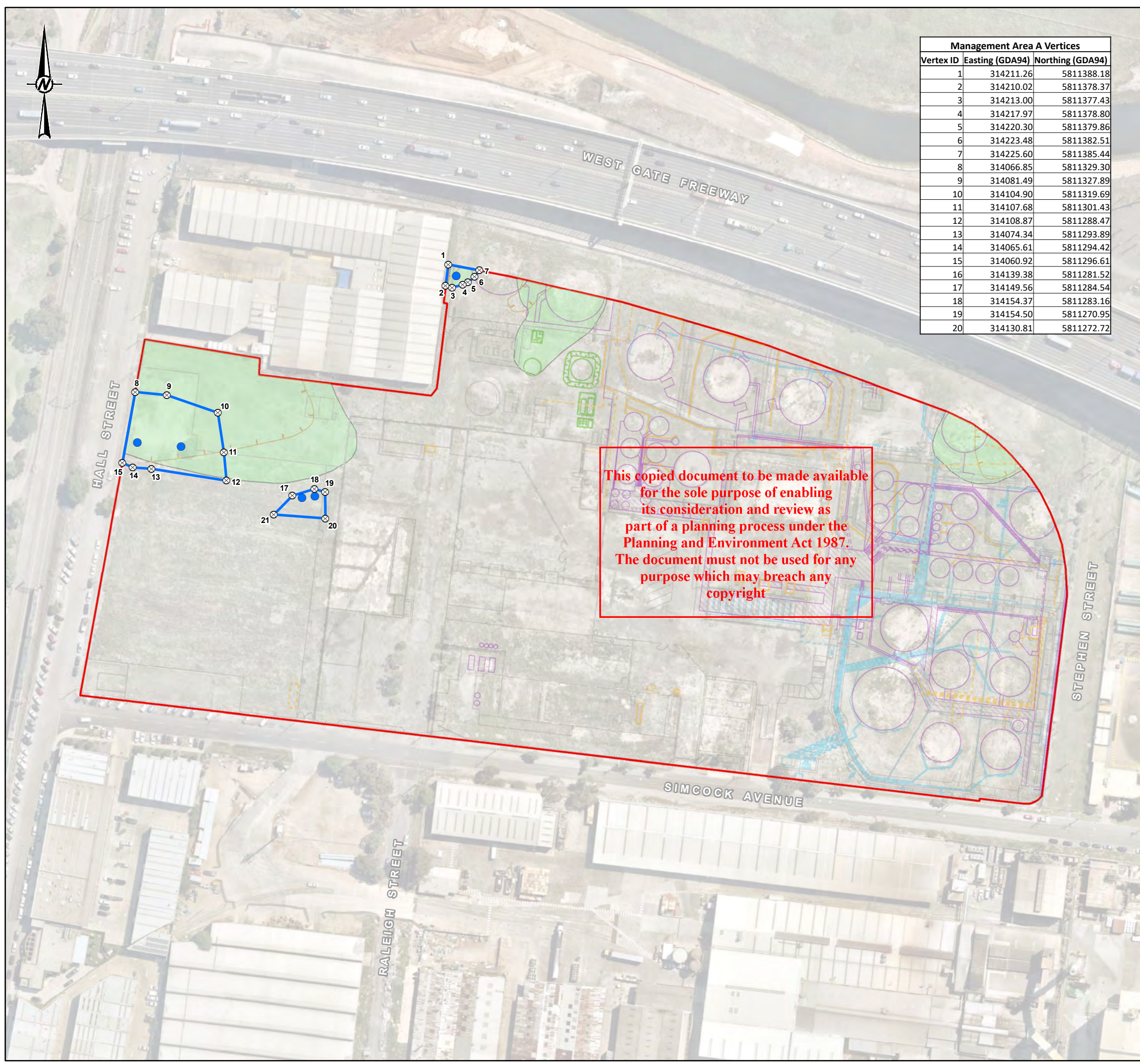
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)

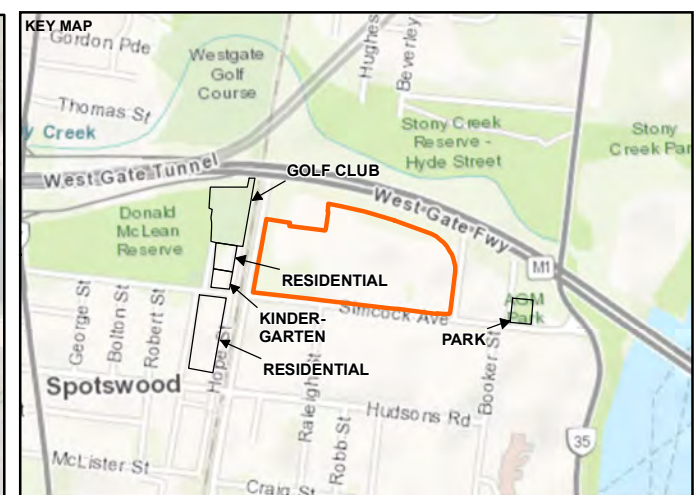
TITLE
AREA OF GROUNDWATER UNSUITABLE FOR USE

CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO.	CONTROL	REV.	FIGURE
1418584	405-R	0	10



Management Area A Vertices		
Vertex ID	Easting (GDA94)	Northing (GDA94)
1	314211.26	5811388.18
2	314210.02	5811378.37
3	314213.00	5811377.43
4	314217.97	5811378.80
5	314220.30	5811379.86
6	314223.48	5811382.51
7	314225.60	5811385.44
8	314066.85	5811329.30
9	314081.49	5811327.89
10	314104.90	5811319.69
11	314107.68	5811301.43
12	314108.87	5811288.47
13	314074.34	5811293.89
14	314065.61	5811294.42
15	314060.92	5811296.61
16	314139.38	5811281.52
17	314149.56	5811284.54
18	314154.37	5811283.16
19	314154.50	5811270.95
20	314130.81	5811272.72



- LEGEND**
- Site Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Fuel Infrastructure (Underground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Management Area A - Separation Layer Required
 - Human Health Direct Contact Exceedance
 - Management Area A Vertex

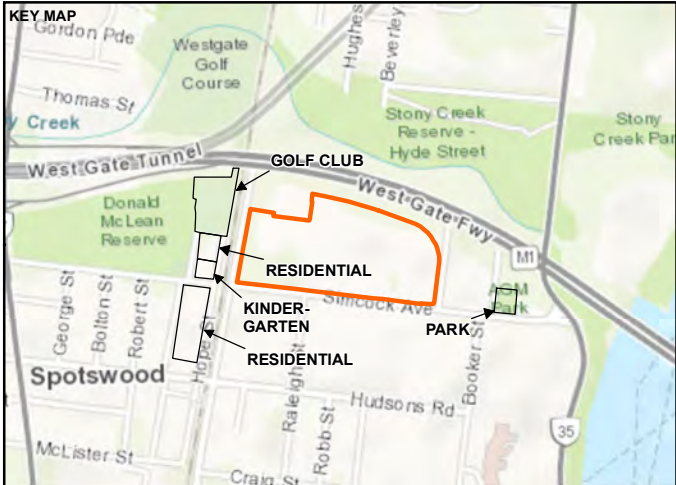
ADVERTISED PLAN

0 50 100
1:1,750 METRES

NOTE(S) PROJECTION: GDA 1994 MGA ZONE 55		
REFERENCE(S) 1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 17/02/2020. 2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU. 3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.		
CLIENT MOBIL OIL AUSTRALIA PTY LTD		
PROJECT COST TO CLOSURE SPOTSWOOD TERMINAL (31XX)		
TITLE MANAGEMENT AREA A		
CONSULTANT 	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM
PROJECT NO. 1418584	CONTROL 405-R	REV. 0
		FIGURE 11A

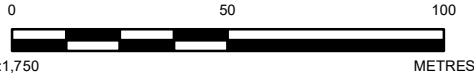


Management Area B Vertices		
Vertex ID	Easting (GDA94)	Northing (GDA94)
1	314210.00	5811364.27
2	314284.49	5811355.34
3	314281.76	5811332.07
4	314287.61	5811329.64
5	314280.85	5811274.35
6	314327.02	5811269.11
7	314321.85	5811225.29
8	314375.27	5811218.65
9	314373.92	5811205.87
10	314397.41	5811147.54



- LEGEND**
- Site Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Fuel Infrastructure (Underground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Area B - Vapour Mitigation System Required
 - Vapour Intrusion and/or Fire/Explosive Hazard Exceedance
 - Management Area B Vertex

ADVERTISED PLAN



NOTE(S)
PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 17/02/2020.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

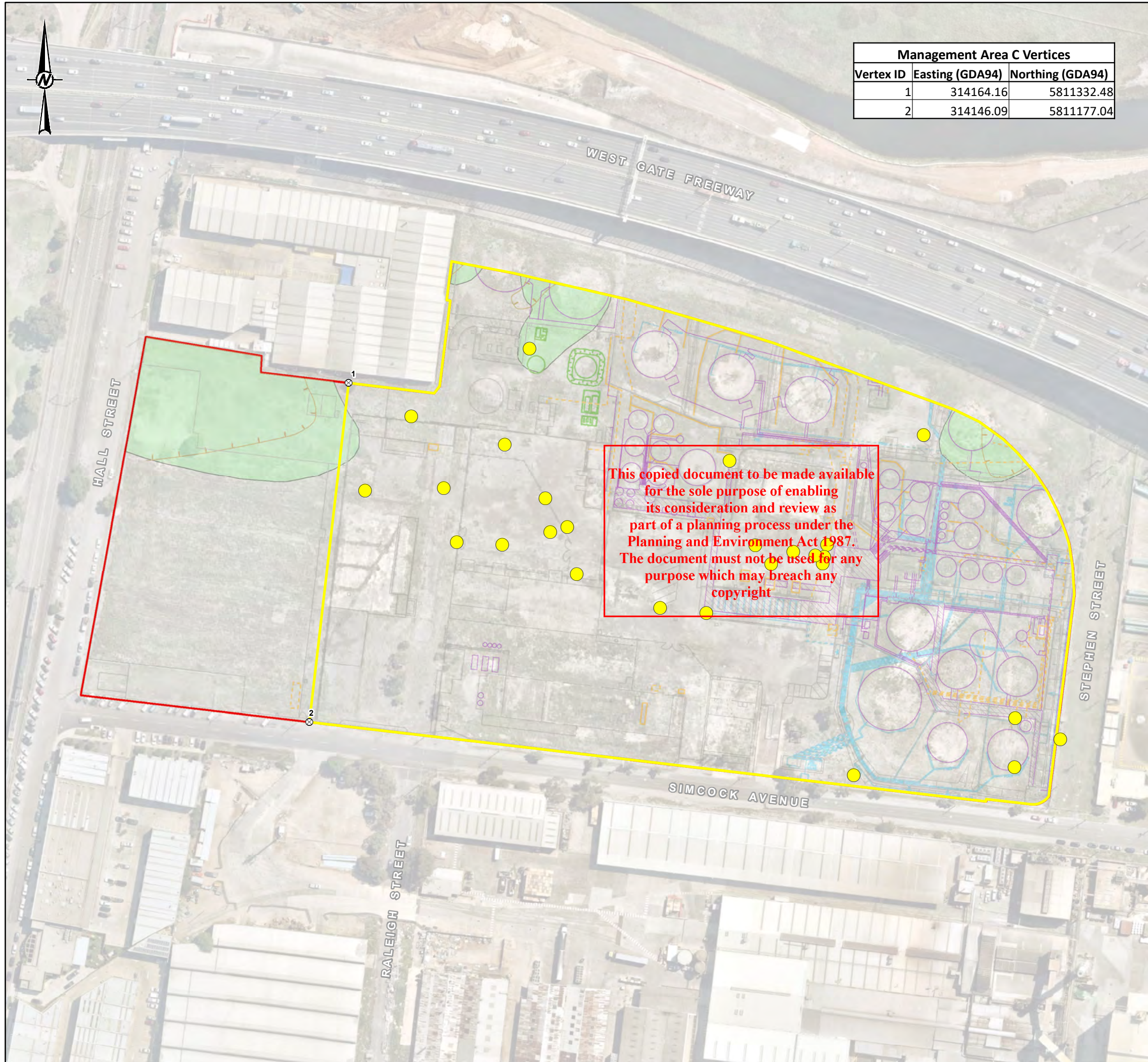
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
MANAGEMENT AREA B

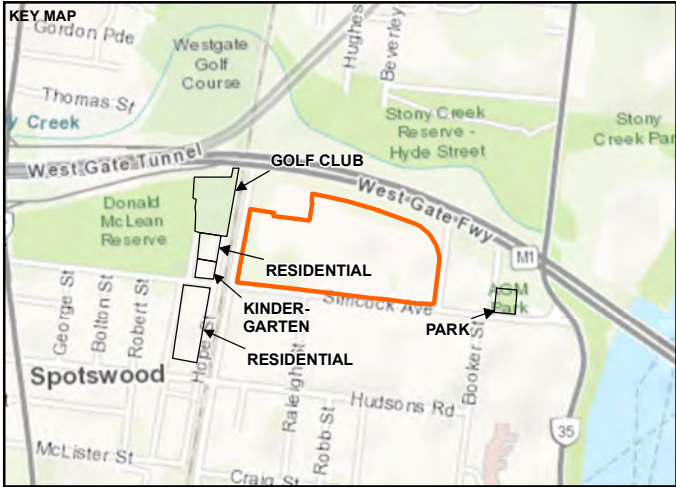
CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 11B



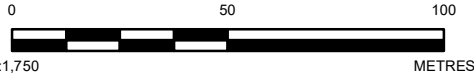
Management Area C Vertices		
Vertex ID	Easting (GDA94)	Northing (GDA94)
1	314164.16	5811332.48
2	314146.09	5811177.04

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- LEGEND**
- Site Boundary
 - Former Fuel Infrastructure (Above Ground)
 - Former Fuel Infrastructure (Underground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Area C - Potential LNAPL Forming Management Area
 - Evidence of LNAPL
 - Management Area C Vertex

ADVERTISED PLAN



NOTE(S)
PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 17/02/2020.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

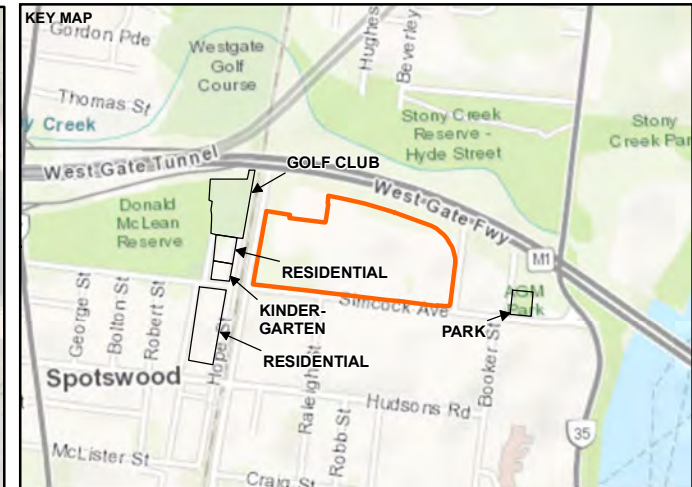
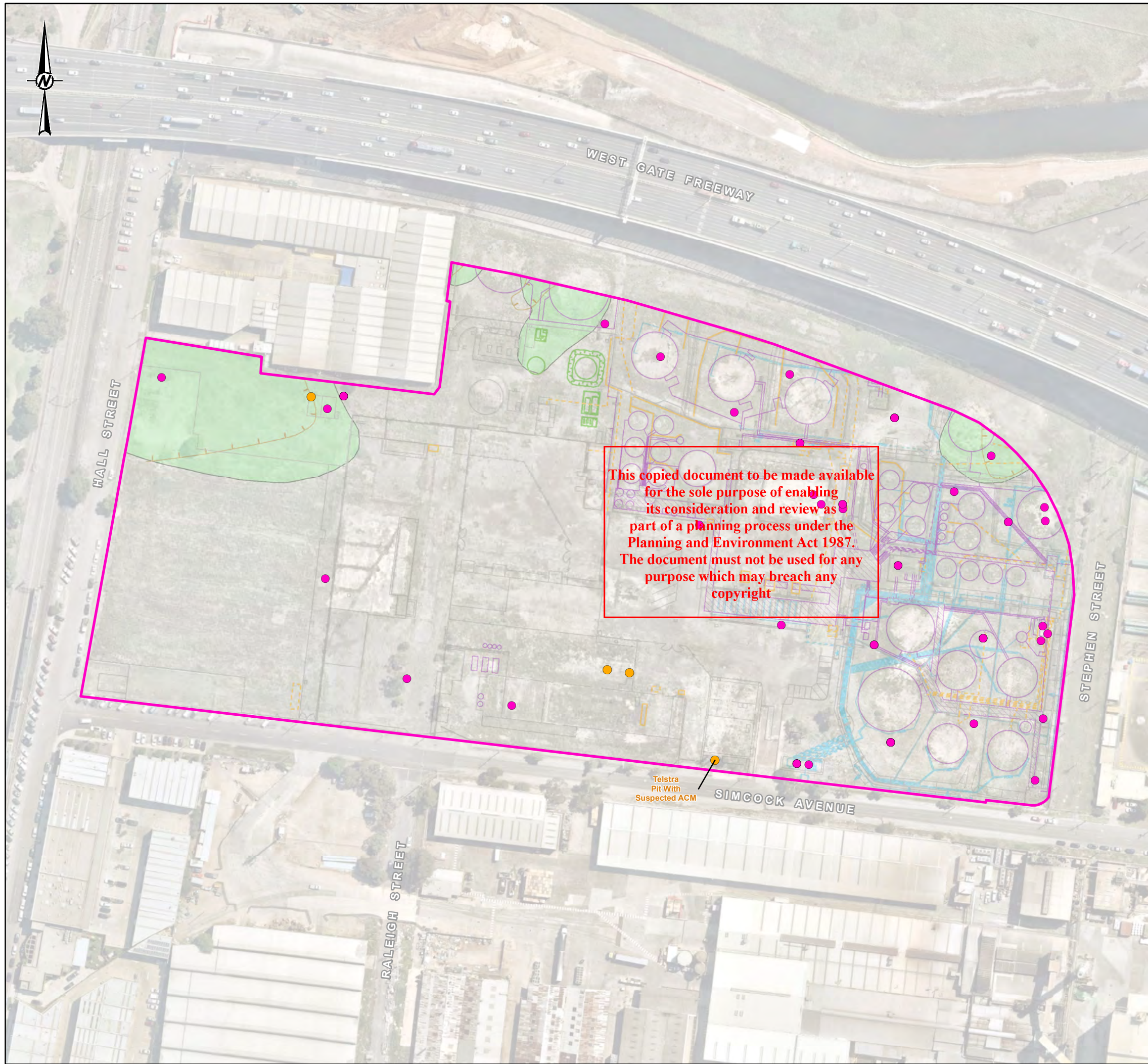
CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
MANAGEMENT AREA C

CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 11C



- LEGEND**
- Former Fuel Infrastructure (Above Ground)
 - Former Fuel Infrastructure (Underground)
 - Former Waste and Runoff Collection Infrastructure (Above Ground)
 - Former Waste and Runoff Collection Infrastructure (Underground)
 - Former Remedial Infrastructure
 - Former Foam Line
 - Former Quarry
 - Former General Infrastructure
 - Inferred Quarry Extent – Stage 1 Assessment (AECOM, 2014)
 - Area D - PFAS, Trench Worker, Asbestos and Groundwater Extraction and Site Boundary
 - PFAS Above Detection or Management Limit For Free Phase Formation Exceedance
 - Known/Suspected Asbestos Location

ADVERTISED PLAN



NOTE(S)
PROJECTION: GDA 1994 MGA ZONE 55

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 17/02/2020.
2. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.
3. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.

CLIENT
MOBIL OIL AUSTRALIA PTY LTD

PROJECT
COST TO CLOSURE
SPOTSWOOD TERMINAL (31XX)

TITLE
MANAGEMENT AREA D

CONSULTANT	YYYY-MM-DD	2023-03-17
	DESIGNED	-
	PREPARED	MAH
	REVIEWED	CM
	APPROVED	JMM

PROJECT NO. 1418584 CONTROL 405-R REV. 0 FIGURE 11D

APPENDIX B

Example Proforma

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PLAN**

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44-76 Simcock Avenue, Spotswood, Victoria – Task Specific Contamination Management Plan

Works Personnel:

Phone no:

Proposed Date of Works: Proposed Duration of Works:

ITEM	ACTIONS
1	Locations and Depth of Works (Attach Plan showing intended location) Location: Depth:
2	Description of Works: This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright
3	Procedures for Management of Soil During Excavation (See overleaf for requirements - Attach additional pages if extra procedures are required.)
4	Procedures for Management of Excess Soil Determination of Waste Classification (Fill Material, CAT D, CAT C, CAT B, CAT A, PFAS Impacted): Disposal by Licensed Waste Contractor (Y/N): Contractor Company Name: Tel No: (Attach copy of EPA waste transport certificates and weighbridge dockets)
5	Specific Occupational Health, Safety and Environmental Management Considerations and Personal Protective Equipment Requirements

ITEM	ACTIONS
6	Importing Soil/Material to site Is soil being imported to site – (Y/N)? Provide details of the soil quality verification procedure? (e.g. attach analytical results and waste classification) (Attach evidence of imported soil e.g. weighbridge dockets)

PRE-WORKS SIGN OFF	
Prior to Work – Approval of Task Specific SCMP	
Name (Print)	
Signed: (Site Manager)	Date.....
NO WORK IS TO TAKE PLACE UNLESS PART 1 HAS BEEN COMPLETED AND SIGNED OFF.	

POST-COMPLETION SIGN-OFF	
Work Completed and soil disposed of appropriately (attach supporting documentation) and Surface Repaired.	
Name (Print).....	
Signed: (Site Manager)	Date.....
<i>On completion of works this form should be retained by the Site Manager</i>	

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ADVERTISED PLAN

SUMMARY OF SCMP REQUIREMENTS

- Excavations should be as small as practicable.
- The following Separation Layers are acceptable:
 - Concrete pavements of a minimum thickness of 100 mm
 - Asphalt pavements of minimum 100 mm thickness including a gravel base
 - Pavers but due to the potential for movement between pavers they should be either mounted on a minimum of 100 mm of gravel or on a concrete base
 - A minimum thickness of 500 mm of imported soil meeting the chemical requirements of Fill Material (EPA Publication IWRG 1828.2, 2021) (or guidelines replacing it). A Marker Layer (constructed of Nonwoven Geotextile with a minimum mass per unit area of 120 g/m²) shall be placed directly underneath the soil
 - Separation Layer and should be of suitable strength, durability, and visibility
- Soil excavated below the Separation Layer (indicated by the Marker Layer) should be placed onto a sheet of builder's plastic laid down beside the excavation and covered with plastic.
- Should waste, odours, or stained soil be encountered within the depths of works then the Site Environmental Manager should be contacted. The Site Manager shall contact an Environmental Consultant to confirm any additional actions that should be taken beyond the requirements of the SCMP.
- Excavations should be left open for the minimum possible time required.
- Soil generated from the excavations should be placed back into the hole in approximately the same order that it was excavated, i.e. deep soil should be placed back into the hole at depth.
- The Separation Layer should be reinstated over the excavated area to meet the original construction standards or better in terms of placement and material contamination status.
- Excess soil should be disposed of to an appropriate location off site following testing with disposal in accordance with EPA Publication IWRG 1828.2 Waste Disposal Categories – Characteristics and Thresholds (2021) and Government of Victoria, "Gazette No. S26 Designation of the Authority under regulation 86(1) of the environment protection regulations 2021 Classification of PFAS-impacted soil (or guidelines replacing them). Copies of testing results and Waste Transfer records should be copied and attached to this Task Specific Contamination Management Plan
- Where additional soil is required to be imported to backfill the excavation, clean soil that meets the Fill Material criteria outlined in the EPA Publication IWRG 1828.2 (2021) (and guidelines replacing it) and site adopted assessment criteria should be used.

APPENDIX C

Important Information

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IMPORTANT INFORMATION RELATING TO THIS REPORT – MOBIL

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to Mobil Oil Australia Pty Ltd ("Mobil") under and subject to a contract between Golder and Mobil ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to Mobil under the Contract. Terms defined in the Contract have the same meaning in this section of this Report.

Golder has performed the Services in accordance with the Contract as a third party independent contractor qualified to provide certification by means of a direct expression of opinion as to the No Further Action status of a No Further Action Site (including any Contamination issues where applicable) and/or delivery of Interim Monitoring Services to and Interim Monitoring Site and that such reports have been commissioned on the basis not only for reliance by Mobil upon the opinions expressed but also for reliance by and the benefit of any purchaser from Mobil, any lender to a purchaser from Mobil, any lessor to Mobil, any assignee of a real estate interest from Mobil or any owner, occupier (howsoever described) or user of land or person otherwise affected by Covered Contamination (including, for example, a purchaser from an owner of the land, a lessee from an owner of the land or an assignee of a lessee from an owner of the land.)

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At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

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account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

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