



NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. 2019/ SY010

This site audit is a:

statutory audit

~~non-statutory audit~~

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name Brad May

Company Epic Environmental Pty Ltd

Address Level 9, 189 Kent Street, Sydney

Postcode 2000

Phone 1800 779 363

Email bmay@epicenvironmental.com.au

Site details

Address 68-96 Lilyfield Road, Rozelle, NSW

Postcode 2040

Property description

(Attach a separate list if several properties are included in the site audit.)

RY02: Lot 7 in Deposit Plan (DP) 1001928, Lot 13 DP 1226940, Lot 24 DP 1194941

Lot 6 DP 811040, Lot 7 DP 1001928, Lot 22/23/24/25 DP 863385, Lot 108 DP 1203811

GC01: Lot 1 in DP 746891

GC02: Lots 4 to 7, 9, 10, 13 and 17 in DP 255297 and part Lot 24 DP 1194941.

GC04: Lot 1 in DP 82619, Part Lot 2 in DP 63209, Part Lot 24 in DP 1194941, Part Lot 1 DP86948

Local government area: Inner West Council

Area of site (include units, e.g. hectares): 11.27 hectares

Current zoning Port and Employment Zone (Sydney Regional Environmental Plan No. 26 – City West)

Regulation and notification

To the best of my knowledge:

~~the site is~~ the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*, as follows: (provide the no. if applicable)

Declaration no.

Order no.

Proposal no.

Notice no.

the site is not the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

To the best of my knowledge:

~~the site has~~ been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*.

Site audit commissioned by

Name Charles Scarf

Company John Holland CPB Contractors Joint Venture

Site Audit Statement

Address L4, 410 Concord Rd, Rhodes

Postcode 2138

Phone 0438 247 725

Email charles.scarf@rozelleinterchange.com.au

Contact details for contact person (if different from above)

Name Ciara Moriarty

Phone 0417 738 136

Email ciara.moriarty@rozelleinterchange.com.au

Nature of statutory requirements (not applicable for non-statutory audits)

~~Requirements under the *Contaminated Land Management Act 1997*
(e.g. management order; please specify, including date of issue)~~

Requirements imposed by an environmental planning instrument
(please specify, including date of issue)

State Significant Infrastructure (SSI) 7485, specifies Conditions of Approval
for the WestConnex Stage 3B Rozelle Interchange, conditions relating to
contaminated sites (E181 to E185) and waste (E202 to E203).

~~Development consent requirements under the *Environmental Planning and
Assessment Act 1979* (please specify consent authority and date of issue)~~

~~Requirements under other legislation (please specify, including date of issue)~~

Purpose of site audit

~~A1 To determine land use suitability~~

~~Intended uses of the land: Commercial and Industrial~~

OR

A2 To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land: Parkland and public open space, including landscaped areas, sportsground, playgrounds, parkland and wetland ponds. The site will also include a sportsground amenity building and substation.

OR

~~(Tick all that apply)~~

~~B1 To determine the nature and extent of contamination~~

~~B2 To determine the appropriateness of:~~

~~an investigation plan~~

~~a remediation plan~~

~~a management plan~~

~~B3 To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*~~

~~B4 To determine the compliance with an approved:~~

~~**voluntary management proposal** or~~

~~**management order** under the *Contaminated Land Management Act 1997*~~

~~B5 To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.~~

~~Intended uses of the land:~~

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

Ramboll, AECOM, ADE Consulting, WSP

Titles of reports reviewed:

Table 1 – Primary reports:

Site Audit Statement

No.	Sub-site area	Report Reference	Finalised document title ¹	Finalised report date	Description
1	GC01	WSP (2020)	Letter report: 'Work Plan - Sub Site Area - GC01', PS117368-CLM-LTR-WP-GC01 RevB.docx, 18 May 2020	18 May 2020	Work plan for detailed assessment of GC01 area
2	GC04	WSP (2020a)	Letter report: 'Work Plan - Sub Site Area - GC04', PS117368-CLM-LTR-WP-GC04 RevB.docx, 18 September 2020	18 September 2020	Work plan for detailed assessment of GC04 area
3	RY02	WSP (2020b)	Letter report: 'Work Plan - RY02', PS117368-CLM-LTR-WP-RY02 RevB.docx, 6 October 2020	6 October 2020	Work plan for detailed assessment of RY02 area
4	RY02, GC01 and GC04	WSP (2021)	Letter report; 'Work Plan - Soil Vapour Assessment - Sub Site Areas RY02, GC01 and GC04', PS117368-CLM-LTR-WP-SV Assessment RevB_FINAL, 22 January 2021	22 January 2021	Work plan for soil vapour assessment
5	GC01	WSP (2021a)	'WestConnex Stage 3B - Rozelle Interchange - Sub Site Area - GC01 Detailed Site Investigation', PS117368-CLM-REP-GC01 RevD, 16 August 2021	16 August 2021	Detailed site investigation report for GC01 area
6	GC04	WSP (2021b)	'WestConnex Stage 3B - Rozelle Interchange SubSite Area - GC04 Detailed Site Investigation', PS117368-CLM-REP-GC04 RevD, 27 August 2021	27 August 2021	Detailed site investigation report for GC04 area
7	RY02, GC01 and GC04	WSP (2022)	'WestConnex Stage 3B - Rozelle Interchange Sub-Site Area - GC01, GC04, RY02 Soil Vapour Assessment', PS117368-CLM-REP-Soil Vapour Assessment-RevC, 10 January 2022	10 January 2022	Soil vapour investigation report
8	GC02	WSP (2022a)	'WestConnex Stage 3B - Rozelle Interchange Sub Site Area - GC02 Detailed Site Investigation', PS117368-CLM-REP-GC02, 2 June 2022	2 June 2022	Detailed site investigation for GC02 area
9	RY02	WSP (2023)	'WestConnex Stage 3B - Rozelle Interchange - Sub-Site Area RY02 Detailed Site Investigation', PS117368-CLMREP-RY02 RevD Final, 29 May2023	29 May 2023	Detailed site investigation for RY02 area
10	GC02, GC04	WSP (2023a)	'WestConnex Stage 3B - Rozelle Interchange Sub-site Areas GC02 and GC04 Remediation Action Plan', PS117368-CLM-RAP-GC02_GC04_RevI, 01 June 2023	01 June	Remediation Action Plan for GC02 and GC04 areas
11	GC02	WSP (2023f)	Letter report: 'WestConnex Stage 3B sub-site GC02 – sediment pond data gap investigation', PS117368-SYD-CLM-LTR-GC02SP Rev2, 23 October 2023	23 October 2023 (Rev4 Final)	Supplementary investigation of sediment pond, regarding tarry soils extent data gap
12	GC02/GC04	WSP (2023j)	Validation Report, WestConnex Stage 3B sub-sites GC02 and GC04, PS117368-CLM-REPGC02GC04_VAL RevD	30 November 2023	Validation of GC02/ GC04 sub-sites as suitable for proposed landuses
13	RY02	WSP (2023k)	Groundwater sampling event – September 2022 0 RY02 monitoring wells GW10, GW11 and GW12, Ref: PS117368-CLM-LTR-RY02-Sept 2022 GME-RevC	10 November 2023	Groundwater monitoring event at GW10 to GW12 undertaken to determine the status of groundwater at these locations and assess the potential for migration of hydrocarbon impacts observed in groundwater at sub-site GC02.
14	RY02/ GC01	WSP (2023l)	WestConnex Stage 3B – Rozelle Interchange Sub-Site Areas RY02 and GC01, Final Site Condition Report. Ref: PS117368-CLM-REPRY02 FSCR RevC	30 November 2023	Site condition report to demonstrate that the site is suitable for recreational open space landuse and that residual contamination can be managed under a long-

Site Audit Statement

No.	Sub-site area	Report Reference	Finalised document title ¹	Finalised report date	Description
					term environmental management plan (LTEMP).
15	RY02, GC01, GC02 and GC04	WSP (2023m)	Long Term Environmental Management Plan – Rozelle Interchange Sub-Sites RY02, GC01, GC02 and GC04. Ref: PS117368-CLM-REP-RIC EMP RevB	30 November 2023 (draft)	Long term environmental management plan for the rail yards area (all sub-sites)
16	RY02, GC01, GC02, GC04	ADE (2019)	'Soil Characterisation Assessment – Rozelle Interchange, Rozelle NSW', W/CX-08-15954 / SCA1 / v1d, 7 June 2019	7 June 2019	Characterisation of in-situ soils with regard to site health criteria (i.e HIL/ HSL D/ C) and preliminary waste classification.

Table 2: Additional reports

No.	Sub-site area	Report Reference	Finalised document title ¹	Finalised report date	Description
1	GC02	WSP (2022b)	'Spoil Reuse – WAC318', Ref: PS117368-CLM-LTR-WAC318 Reuse-RevB	29 November 2022	Review of soil characterisation data generated by ADE, for beneficial reuse of spoil on site.
2	CWL	WSP (2022c)	'WestConnex Stage 3B – Rozelle Interchange Sub-site Area – City West Link, Site Status and Hydrogeology Report', 31 October 2022, PS117368-CLM-REP-CWL RevE.	31 October, 2022	Site status report for City West Link sub-site, includes reporting of water quality data for Rozelle Bay
3	GC02	WSP (2023b)	'GC02 UST – Sampling and Validation Report Rozelle Interchange - Sub-Site Area GC02', PS117368-CLM-REP-GC02 UST RevC Final, 24 October 2023	24 October 2023	Validation report following removal of GC02 UST
4	RY02	WSP (2023c)	'WestConnex Stage 3B - Rozelle Interchange Sub-Site Area - RY02 Soil status and capping specification', PS117368-CLM-REPRY02 SSC RevC, 10 November 2023	10 November 2023	Soil status and capping specification for RY02 sub-site
5	GC04	WSP (2023d)	'GC04 UPSS - Sampling and Validation Report – Rozelle Interchange – Sub- Site Area GC04', PS117368-CLM-REP-GC04 UST RevD, Final, 13 November 2023	13 November 2023	Validation report following removal of GC04 UST
6	GC01	WSP (2023i)	Letter report: 'GC01 Validation', PS117368-SYD-CLM-LTR-GC01VAL Rev1, 28 April 2023	28 April 2023	Validation of GC01 sub-site. This report was superseded by WSP (2023e)
7	GC01	WSP (2023e)	Letter report: 'GC01 soil status update', PS117368-SYD-CLM-LTR-GC01 Rev2, 15 November 2023	15 November 2023	Soil status update for GC01, based on previous assessment results (WSP 2021a) and review of construction works
8	RY02	WSP (2023g)	Email update from WSP (Mathew Vanderheyden WSP via Ciara Moriarty JHCPB): 'RY02 sump investigation', 14 July 2023	14 July 2023	Email update on sump investigation (unexpected find)
9	RY02	WSP (2023h)	Email update from WSP (Mathew Vanderheyden WSP via Ciara Moriarty JHCPB): 'RY02 diesel spill', 17 August 2023	17 August 2023	Email update on assessment of diesel spill area in RY02
10	GC01	WSP (2023n)	Letter: 'WestConnex 3B – sub site GC02 tar and pipework investigation', 14 October 2023	24 October 2023	Scope and findings of investigation of extent of tar impacts in northern part of GC02. Details included in WSP (2023j)

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No.	Sub-site area	Report Reference	Finalised document title ¹	Finalised report date	Description
11	RRY, GC01, GC02 and GC04	WSP (2023o)	Spoil Reuse – RRY, GC01, GC02 and GC04, ref: PS117368-CLM-LTR-Spoil Reuse-RevE,	19 April 2023	Review of soil characterisation data generated by ADE, for beneficial reuse of spoil on site.

Other information reviewed, including previous site audit reports and statements relating to the site:

- Johnstone Environmental Technology (JET) (1997), 'Stage 1: Preliminary Site Contamination Investigations Bay Precinct City West', 1997
- JET (1998), 'Preliminary Site Contamination Investigations Bays Precinct City West, 1998.
- Parsons Brinckerhoff (PB) (2003), 'Final Report, Environmental Site Assessment, Rozelle Marshalling Yards, Rozelle, NSW', 2003
- PB (2003), 'Final Report, Environmental Site Assessment, Rozelle Marshalling Yards, Rozelle, NSW', 2003.
- PB (2010), 'Asbestos Assessment, Rozelle Rail Yards, Rozelle, NSW', 2010
- AECOM (2016), 'M4 / M5 Link Technical and Environmental Advisor, WestConnex M4-M5 Link Rozelle Interchange, Stage 1 Preliminary Site Investigation', 19 May 2016, Doc No.: M4M5-REP-4000-EN-030A
- AECOM (2017), 'M4/M5 Link Tranche 1 and Tranche 2 Factual Contamination Assessment', 2017
- AECOM (2018a), 'Groundwater Monitoring Interpretative Report', August 2018
- AECOM (2018b), 'WestConnex GI Tranche 5.1 Factual Contamination Report', 2018
- AECOM (2018c), 'M4/M5 Link Rozelle Interchange, Tranche 6 and 7 Contamination and Acid Sulfate Data Report', 2017
- ADE (2018), 'Material Characterisation Assessment Report, Rozelle Rail Yard', May 2018
- Arcadis (2018), 'Data Gap Analysis Report', Rozelle Rail Yards, 2018
- Fulton Hogan (2018), 'Handover Plan Rozelle Rail Yard (RRY) Site Management Works', 2018
- ADE (2018), 'Material Characterisation Assessment Report, Rozelle Rail Yard, Rozelle NSW'. 2018
- ADE (2019), 'Soil Characterisation and Assessment Report', WCX-08-15954 / SCA1 v1f, 7 June 2019
- Ramboll (2019), 'WestConnex Stage 3B – Rozelle Interchange Contaminated Land – Sampling and Analysis Plan', (SAQP), Revision D2, August 2019, (Ramboll SAQP 2019), Appendices I, L, M and N: Site Specific SAQPs for RY02, GC01, GC02 and GC04
- PSM (2019), 'Hydrogeological Interpretive Report, Zone 00 – Package 10-21', Final RevB

Site audit report details

Title: WestConnex Stage 3B - Rozelle Interchange – Rozelle Railyards - Site Audit Report, Prepared for John Holland CPB Joint Venture. Dated 8 December 2023

Report no. SY180068.01_SAR_SY010_RY02_SectA_Rev0 Date 8 December 2023

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
 - (B1) the nature and extent of contamination, and/or
 - (B2) the appropriateness of an investigation, remediation or management plan¹, and/or
 - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
 - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
 - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

¹ For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ~~Residential, including substantial vegetable garden and poultry~~
 - ~~Residential, including substantial vegetable garden, excluding poultry~~
 - ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
 - ~~Day care centre, preschool, primary school~~
 - ~~Residential with minimal opportunity for soil access, including units~~
 - ~~Secondary school~~
 - ~~Park, recreational open space, playing field~~
 - ~~Commercial/industrial~~
 - ~~Other (please specify):~~
-

OR

- ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

Overall comments:

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan² (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ~~Residential, including substantial vegetable garden and poultry~~
- ~~Residential, including substantial vegetable garden, excluding poultry~~
- ~~Residential with accessible soil, including garden (minimal home grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
- ~~Day care centre, preschool, primary school~~
- ~~Residential with minimal opportunity for soil access, including units~~
- ~~Secondary school~~
- ✓ Park, recreational open space, playing field
- ~~Commercial/industrial~~
- ~~Other (please specify):~~

EMP details

Title: Long Term Environmental Management Plan – Rozelle Interchange Sub-Sites RY02, GC01, GC02 and GC04. Ref: PS117368-CLM-REP-RIC EMP RevB

Author: WSP

Date: 30 November 2023

No. of pages 82

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

- ~~requires operation and/or maintenance of **active** control systems³~~
- ✓ requires maintenance of **passive** control systems only³.

² Refer to Part IV for an explanation of an environmental management plan.

³ Refer to Part IV for definitions of active and passive control systems.

Purpose of the EMP:

The purpose of the Long-term Environmental Plan (LTEMP) is to manage potential adverse health and environmental impacts associated with soil contamination at the site. The LTEMP provides the passive management requirements to ensure the longevity of the installed capping system and to ensure any works that penetrate the capping system are appropriately controlled.

Description of the nature of the residual contamination:

- Hydrocarbons (predominantly heavier fractions) in fill material in the northern portion of GC02 sub-area
 - PAHs and heavy metals in fill material across the general site area
 - asbestos in fill material.
-
-

Summary of the actions required by the EMP:

- Environmental awareness and training
 - 6-monthly visual inspections of capped areas
 - Maintenance of capping
 - Sets out imported fill and VENM testing and validation requirements
 - Controls to be applied during minor sub-surface works (not involving breaching of capping layer)
 - Management controls for observed breaches of containment (either hardstand or capped landscaped areas)
 - Sets out procedures for subsurface works reinstatement to ensure protection of workers and future site users
 - Sets out Unexpected finds protocols
 - Incident and emergency procedures
 - Provides complaint and environmental incident procedures and register
 - Reporting and LTEMP review requirements
-
-

How the EMP can reasonably be made to be legally enforceable:

The Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental

Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) provides the primary mechanism for ensuring the LTEMP is enforced with respect to changes in the allowable land uses or material alterations to the site and surrounds. Future redevelopment work at the site is significant enough to require consent from the local council (Inner West Council) under the EP&A Act, which provides an avenue for enforcement as Council may require adoption of this LTEMP as a condition of development consent for the site.

The site owner (Transport for NSW) will be responsible for routine monitoring and maintenance of the LTEMP areas.

How there will be appropriate public notification:

As per condition E183 of the infrastructure approval, the Secretary of the NSW Department of Planning and Environment (or nominee) and Inner West Council (Council) are also to be provided a copy of the site audit statement. Council must provide a notification of the existence of the audit on the planning certificate/s for the site issued under section 10.7 of the EP&A Act.

Overall comments:

Section B

Purpose of the plan⁴ which is the subject of this audit:

I certify that, in my opinion:

(B1)

- ~~The nature and extent of the contamination **has** been appropriately determined~~
- ~~The nature and extent of the contamination **has not** been appropriately determined~~

AND/OR (B2)

- ~~The investigation, remediation or management plan **is** appropriate for the purpose stated above~~
- ~~The investigation, remediation or management plan **is not** appropriate for the purpose stated above~~

AND/OR (B3)

- ~~The site testing plan:

 - ~~**is** appropriate to determine~~
 - ~~**is not** appropriate to determine~~
 if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*~~

AND/OR (B4)

- ~~The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

 - ~~**have** been complied with~~
 - ~~**have not** been complied with.~~
 *voluntary management proposal no. _____
 **management order no. _____~~

AND/OR (B5)

- ~~The site **can be made suitable** for the following uses:

 - (Tick all appropriate uses and strike out those not applicable.)
 - ~~Residential, including substantial vegetable garden and poultry~~
 - ~~Residential, including substantial vegetable garden, excluding poultry~~~~

⁴ For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

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- Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- Day care centre, preschool, primary school
- Residential with minimal opportunity for soil access, including units
- Secondary school
- Park, recreational open space, playing field
- Commercial/industrial
- Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (attached):

*Strike out as appropriate

Plan title _____

Plan author _____

Plan date _____

No. of pages _____

SUBJECT to compliance with the following condition(s):

Overall comments:

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997*.

Accreditation no. 1603

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997*, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed 

Date 8 December 2023

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of the *Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms


In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**:
nswauditors@epa.nsw.gov.au or as specified by the EPA

AND

- the **local council** for the land which is the subject of the audit.



SURVEYOR	SEAN FOLEY	GENERAL NOTES / REFERENCES	ROZELLE INTERCHANGE WestConnex		DO NOT SCALE	DISCIPLINE SURV	ZONE CWL	CATEGORY LSC	DESIGN PACKAGE 00_20	PLOT DATE 1/12/23
	PROJECT SURVEY MANAGER		FOR INFORMATION ONLY							
SIGNATURE	Foley, Sean	AUDIT BOUNDARY : RED		AUDIT BOUNDARY		DRAWN BY SF	COORDINATE SYSTEM MGA94 Z56	HEIGHT DATUM A.H.D	SCALE AT ORIGINAL A3 SIZE 1:2500	SHEET 1 of 1
	PREPARED FOR : CIARA MORIARTY			ROZELLE RAIL YARDS						

Design
for a better
future /

JOHN HOLLAND CPB

LONG TERM
ENVIRONMENTAL
MANAGEMENT PLAN

ROZELLE
INTERCHANGE - SUB-
SITES RY02, GC01,
GC02 AND GC04

wsp

NOVEMBER 2023

Question today Imagine tomorrow Create for the future

Long Term Environmental Management Plan Rozelle Interchange - sub-sites RY02, GC01, GC02 and GC04



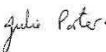
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ABBREVIATIONS

DSI	Detailed site investigation
HIL	Health investigation level
LTEMP	Long term environmental management plan
mbgl	metres below ground level
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999
NSW EPA	New South Wales Environment Protection Authority
PAH	Polycyclic aromatic hydrocarbon
POEO Act	Protection of the Environment Operations Act 1997
SWMS	Safe work method statement
TEQ	Toxic equivalence quotient
WCX3B	WestConnex Stage 3B
WHS	Work Health and Safety

1 INTRODUCTION

WSP Australia Pty Ltd (WSP) was commissioned by John Holland CPB Joint Venture (JHCPB) to prepare a long-term environmental management plan (LTEMP) for a portion of the WestConnex Stage 3B (WCX3B) Rozelle Interchange project. The portion of the WCX3B project pertaining to this LTEMP comprises the following sub-sites:

- RY02;
- GC01;
- Site C (referred to as ‘GC02’); and
- GC04.

For the purposes of this LTEMP, these sub-sites are herein referred to collectively as the ‘site’ (refer to Figure 1 of Appendix A for site location and Appendix E for site survey plans). Details pertaining to the respective property descriptions for these sub-sites are presented in Table 2.1.

1.1 BACKGROUND

Fill material, including soil containing heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and asbestos, was previously identified at the site during occupation by JHCPB for construction of the WCX3B project infrastructure. As part of the WCX3B project construction, clean soil or hardstand capping layers have been installed at the site. Additionally, construction of an impervious concrete plug within the GC02 sub-site stormwater drainage channel was undertaken to minimise potential off-site migration of hydrocarbon contaminants identified in groundwater in this portion of the site. Works have also been undertaken to remove redundant pipework containing tar in the GC02 sub-site and determine the potential extent of remaining pipework at the site.

1.2 PURPOSE

This LTEMP has been prepared to manage potential adverse health and environmental impacts associated with soil and groundwater contamination at the site.

This LTEMP provides the passive management requirements to ensure the longevity of the installed capping system and to ensure any works that penetrate the capping system are appropriately controlled. In addition, this LTEMP also documents the following:

- locations of residual soil contamination at the site to ensure that appropriate review of potential risks to future site users is implemented for any future changes in the site condition, layout and/or land use;
- locations of residual soil contamination at the site requiring management during potential future subsurface works in these areas;
- the location of the concrete plug for consideration as part of potential future site development; and
- the potential extent of redundant concrete pipework that may contain tar.

No active management is required for the site.

This LTEMP will apply indefinitely or until such a time that a site audit statement can be prepared by a NSW Environment Protection Authority (EPA) accredited site auditor stating that an EMP is not required for the site.

In handing over completed works to Transport for NSW (TfNSW), JHCPB has a contractual obligation under its Project Deed to provide all documentation that is required for TfNSW (and others) to operate and maintain the relevant works.

This LTEMP forms part of such deliverables that JHCPB must handover at completion along with a Certificate of Completion ensuring that handover is on the basis that TfNSW is aware of and complies with the LTEMP requirements.

1.3 OBJECTIVES

The objectives of this LTEMP are to:

- define appropriate management and mitigation measures to be implemented to manage potential environmental and health and safety risks associated with residual subsurface soil impacted by heavy metals, hydrocarbons, PAHs and asbestos, in addition to hydrocarbon impacted groundwater within the GC02 sub-site area;
- outline the monitoring and maintenance measures required to maintain integrity of the constructed capping systems;
- ensure activities associated with any future site works are managed in a way that minimises the potential impact to the surrounding environment (including with consideration to the stormwater drainage channel plug and known disused subsurface infrastructure); and
- ensure all personnel involved are aware of environmental issues associated with residual heavy metals, hydrocarbons, PAHs and asbestos in soil, and hydrocarbons in groundwater.

The objectives are to be achieved through the application of health and safety procedures as well as the application of controls during the maintenance of utilities, site planning/preparation work and potential future excavation and/or construction works at the site.

1.4 EMP CONTEXT

Key legislation relevant to the proposed works is listed below:

- *Contaminated Land Management Act 1997* (NSW)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cmlth)
- *Environmental Hazardous Chemicals Act 1985* (NSW)
- *Environmental Planning and Assessment Act 1979* (NSW)
- Landcom 2004, *Managing Urban Stormwater: Soils and Construction*
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM, as amended 2013)
- NSW EPA 2014, *Waste Classification Guidelines*
- *Protection of the Environment Operations Act 1997* (POEO Act; NSW)
- *Protection of the Environment Operations Regulation 2009* (POEO Regulation; NSW)
- SafeWork Australia, 2019 *Code of Practice - How to Manage Work Health and Safety Risks*
- SafeWork Australia, 2019 *Code of Practice - Construction Work*
- SafeWork Australia, 2020 *Code of Practice - Excavation Work*
- *Waste Avoidance and Resource Recovery Act 2001* (NSW)
- *Work Health and Safety Act 2011*
- *Work Health and Safety Regulation 2017*.

1.5 CURRENT/FUTURE LAND USE

The site land uses consist of recreational open space areas, including playing fields, wetland ponds, landscaped areas, playgrounds, parklands and sports ground amenities, in addition to pedestrian/bicycle pathways. The southern boundary of the site also comprises a concrete-lined drainage channel and part of the City West Link roadway.

The Urban Design Landscape Plan (UDLP) is provided in Appendix A and the surface landscape overview is shown on Figures 2A and 2B (Appendix A).

2 SITE DESCRIPTION

2.1 SITE IDENTIFICATION

The general property identification information is provided in Table 2.1 below. The location of the site is displayed on Figure 1 (Appendix A).

Table 2.1 Site details

SITE INFORMATION	
Property owner	Transport for NSW
Property address	RY02 – 94-96 Lilyfield Road, Lilyfield GC01 – 68-76 Lilyfield Road, Rozelle GC02 – 92-94 Lilyfield Road, Rozelle GC04 – 80-86 Lilyfield Road, Rozelle
Legal identification	<u>RY02</u> Lot 7 Deposited Plan (DP) 1001928 Lot 13 DP 1226940 Part Lot 24 DP 1194941 Lot 6 DP 811040 Lot 7 DP 1001928 Lots 22 to 25 DP 863385 Lot 108 DP 1203811 Lot 21 DP791554 <u>GC01</u> Lot 1 DP 746891 <u>GC02</u> Lots 4 to 7, 9, 10, 13 and 17 DP 255297 Part Lot 24 DP 1194941 <u>GC04</u> Lot 1 DP 82619 Lot 2 DP 63209 Part Lot 24 DP 1194941
Area	Approximately 11.3 Ha
Current/future site use	The site land uses consist of recreational open space areas, including playing fields, wetland ponds, landscaped areas, playgrounds, parkland and sports ground amenities, in addition to pedestrian/bicycle pathways and roadways. The layout of the WCX3B Rozelle Interchange is shown on the UDLP in Appendix A.
Local authority	Inner West Council

SITE INFORMATION	
Zoning information	RE1 – Public Recreation (under <i>Leichhardt Local Environmental Plan 2013</i>)

2.2 SITE HISTORY SUMMARY

The site has historically comprised various commercial/industrial and rail uses.

Various rail and industrial uses have occurred at the RY02 sub-site since the 1800s, including the storage of disused railway wagons and passenger carriages (Roads and Maritime Services [RMS], 2016¹). The Rozelle Rail Yards were initially established as a feeder for the Darling Harbour goods yards. Property was acquired from landowners between 1910 and 1912, and the Rozelle Rail Yards were commissioned in 1916, with the addition of a number of rail sidings up to 1952. Portions of the RY02 sub-site adjoining Lilyfield Road and the City-West Link were utilised for commercial/industrial land uses including a rail yard workshop, cold store facility and warehouses.

The *Review of Environmental Factors* (REF) prepared by RMS (2016) noted that much of RY02 consists of reclaimed land, with the source of fill used to build up ground levels being unknown. The RY02 sub-site remained unused for many years prior to the 2016 REF. Infrastructure present at the site during 2016 included rail infrastructure such as railway lines, ballast and sleepers, redundant and live utility services, and redundant and active structures and buildings. The site was decommissioned during 2017 and 2018 by Fulton Hogan, which included the removal of all infrastructure, stockpiles, rail lines, ballast, sleepers and fill material to a maximum depth of 0.5 m below ground level (BGL) across the majority of the Rozelle Rail Yards (refer to Section 3 for further detail).

The GC01, GC02 and GC04 sub-sites have historically comprised various commercial/industrial land uses since at least the 1930s. Historical land uses have included a timber yard, repair and maintenance shop, pet food manufacturer, transport and logistics, warehousing, crane yard and garage, and an emoleum plant.

An electroplating and metal polishing facility was formerly located at 51 Lilyfield Road off-site to the north of the site. The electroplating site surrendered its Environment Protection Licence (EPL; 6733) for Hazardous, Industrial or Group A Waste Generation or Storage in June 2000, which allowed storage of acidic solutions or acids in solid form and cyanides (organic). A remediation action plan (RAP) for the property was previously obtained from Inner West Council² which noted that cyanide and trichloroethene (TCE) was present in groundwater at the property, including high concentrations of TCE at the site boundary that is likely to be migrating off-site. Based on available information, it is unknown if remediation or management of groundwater impacts at the former electroplating facility was undertaken.

Further information pertaining to the history of the site is presented in the respective WSP detailed site investigation (DSI) reports.

2.3 ENVIRONMENTAL SETTING

2.3.1 SOILS AND GEOLOGY

A review of the Sydney 1:100,000 scale geological map (sheet 9130, edition 1, 1983) from Resources and Energy data NSW indicated that the site is located in the vicinity of the following primary geological units:

- Holocene aged silty to peaty quartz sand, silt and clay including ferruginous and humic cementation in places with common shell layers; and

¹ Roads and Maritime Services (2016) *Rozelle Railyards – Site Management Works, Review of Environmental Factors*.

² Aargus Environmental (2013) *Remediation Action Plan, 47-51 Lilyfield Road* (15 May 2013).

- Middle Triassic aged medium to coarse-grained quartz sandstone, very minor shale and laminite lenses.

Subsurface conditions encountered during pre-construction investigation works and the DSIs conducted by WSP generally comprised fill material to depths of up to 4.5 mBGL, overlying alluvial soils and/or sandstone bedrock.

The CSIRO Australian Soil Resource Information System (ASRIS) indicates that ASS have a low to extremely low probability of occurrence across the site. However, assessment of ASS parameters at the site during the WSP DSIs and historical investigations indicated that PASS are likely to be present in alluvium material at the site.

2.3.2 HYDROGEOLOGY

Based on the conditions encountered during the WSP DSIs, in addition to the findings of the *Groundwater Monitoring Interpretive Report* previously prepared by AECOM Australia Pty Ltd (AECOM; 2018³), groundwater at the site is present in two main units consisting of a shallower alluvium, typically encountered around the banks of Rozelle Bay and Whites Creek, and deeper Hawkesbury Sandstone generally present further inland. Significant dewatering activities were undertaken as part of the WCX3B tunnelling works in the vicinity of the site, with a reduction in water levels apparent in both aquifers throughout the duration of groundwater gauging conducted during the DSIs.

The nearest downgradient surface water body is Rozelle Bay, approximately 100 m south/south-east of the site. Rozelle Bay is surrounded by a number of commercial properties (including marine brokerage and maintenance facilities).

A review of the WaterNSW online groundwater bore database⁴ was conducted on 18 May 2023 for registered bores within 500 m of the site. No registered bores were identified within 500 m of the site.

³ AECOM (2018) *Groundwater Monitoring Interpretive Report – August 2018*.

⁴ <https://realtimedata.watarnsw.com.au/>

3 SUMMARY OF CONTAMINATION AND REMEDIATION

3.1 SUMMARY OF CONTAMINATION STATUS

3.1.1 SOIL

Fill material containing hydrocarbons, PAHs, heavy metals and asbestos has been retained on the site beneath soil or hardstand capping layers (refer to Section 3.2 for a description of capping remediation activities). The areas of retained soil contamination are shown on Figure 4 (Appendix A) and are summarised as follows:

- hydrocarbons (predominantly heavier fractions) in fill material in the northern portion of GC02;
- PAHs and heavy metals in fill material across the general site area; and
- asbestos in fill material.

Observations of asbestos in the RY02 sub-site have generally consisted of intermittent observations within fill material throughout the WCX3B project. Encountered asbestos impacted soils were generally removed as required during construction and capped as part of the project landscaping requirements. The likelihood of significant, widespread asbestos in soil at the RY02 sub-site is likely to be low, however, it should be assumed that asbestos may be present in fill material beneath the capping layer and appropriate management controls be implemented. Elevated concentrations of asbestos in soil have been identified in the GC01, GC02 and GC04 sub-site areas (refer to Figure 4 in Appendix A).

Risks to subsurface workers

Some areas of soil contamination retained beneath the capping/landscaping layer may present a potential risk to subsurface workers should the capping/landscaping layer be breached and these materials be disturbed. Implementation of the management controls outlined in Table 5.1 is required during subsurface maintenance/construction works in these areas to manage risks to workers. These areas are shown on Figure 4 (Appendix A) and summarised as follows:

- lead in the approximate centre of the site;
- PAHs in the approximate eastern portion of the site (GC02 playing field); and
- likely occurrence of asbestos in fill material (sitewide), in addition to three locations of known elevated concentrations of asbestos in the GC01, GC02 and GC04 sub-site areas.

Risks to recreational site users

Retained soil contamination is considered to present a low risk to recreational users of the site based on the current site layout and subject to ongoing maintenance of the capping layer (refer to Table 5.1 for details regarding capping maintenance). However, to enable appropriate review of risks to site users for any potential future changes in the site condition, layout and/or land use, the locations of identified exceedances of human health criteria⁵ at the site have been shown on site aerial photographs in Appendix F. Any such review should be undertaken by a suitably qualified environmental consultant and be reviewed by a NSW EPA accredited site auditor. Proposed changes to the site condition, layout and/or land use should not be enacted until such time that a SAS can be prepared by the auditor stating that the site is suitable for the proposed use.

⁵ Exceedances of human health criteria for recreational/open space only have been documented in Appendix F based on current zoning.

3.1.1.1 AESTHETIC CONSIDERATIONS IN SOIL – GC02 SUB-SITE AREA

Aesthetic considerations for subsurface maintenance/construction works that may breach the cap in the northern portion of the GC02 sub-site include:

- Disused concrete pipework potentially containing tar – encountered at approximately 2 mBGL during WCX3B construction in the central-northern portion of the GC02 sub-site (playing field) and removed to the extent practical. The removed concrete pipework and potential extent of remaining concrete pipework in GC02 is shown on Figure 10 (Appendix A).
- Potential tarred steel rails in fill material (locations of previously encountered tarred rails are shown on Figure 9 in Appendix A).
- Potential tar fragments in fill material.

3.1.2 GROUNDWATER

In general, contamination identified in groundwater at the site is not considered to present a potentially unacceptable risk to human health or the environment. However, hydrocarbon impact (including apparent free-phase product) has been identified in perched groundwater within a narrow band of alluvium sand on the GC02 sub-site. The alluvium sand is underlain by alluvium clay and is situated at a depth of between approximately 2.5 and 3.5 mBGL. Groundwater assessments conducted by WSP indicate that the extent of the hydrocarbon impacted perched groundwater is delineated to the GC02 sub-site (refer to Figure 9 in Appendix A). Appropriate management measures should be implemented during subsurface works in this area of the site that may extend ≥ 2.5 mBGL. Management measures for the disturbance of material within the perched groundwater layer are provided in Table 5.1.

3.2 REMEDIATION ACTIVITIES AND CAPPING

The remediation activities and capping undertaken at the site are summarised below.

3.2.1 SITEWIDE CAPPING

To address the PAH, hydrocarbon, lead and asbestos impacts in soil, the following capping works were conducted at the site:

- placement of a basal layer of permeable coloured synthetic geotextile material or coloured mesh in unsealed areas of the GC02 and GC04 sub-site (i.e. portions of these sub-sites reserved for turfing or landscaping);
- placement of a capping layer across the site, generally comprising the following:
 - GC02 and GC04:
 - validated soil and a surficial layer of either turf or mulch overlying the geotextile/mesh; or
 - concrete and/or asphalt pavement in the portions of these sub-sites encompassing the pedestrian footpaths/cycleways. The geotextile/mesh marker layer was generally not installed beneath hardstand.
 - RY02 and GC01:
 - validated soil and a surficial layer of either turf or mulch; or
 - constructed wetland pond sediments overlying geotextile and pond liner (RY02 only); or
 - concrete and/or asphalt pavement in the portions of these sub-sites encompassing the pedestrian footpaths/cycleways.

In general, landscape areas in the south-western portion of the site consist of capping material thicknesses ≥ 1 m and/or on soils on structure (e.g. cut & cover structures). Landscape areas in the central and most eastern portions of the site generally comprise ≥ 0.5 m and/or on structure, with the exception of the following:

- massed planting and turf areas adjoining the Sydney Trains switching station (including the playing field area) and along the north-eastern site boundary (adjacent to Lilyfield Road) ranging between 300 and 500 mm; and
- along the southern playing field boundary (along City West Link roadway) ranging between 150 and 300 mm.

The site remediation capping layout is provided on Figures 3A to 3C (Appendix A) and the landscape design and associated surface finishing specifications (including cross-sections where available) are provided in Appendix A (drawing references RIC-HSL-DRG-20-UD-150-201 to RIC-HSL-DRG-20-UD-150-204). Survey data documenting the capping thickness is provided in Appendix E. The approximate extent of the marker layer is shown on Figure 11 (Appendix A).

3.2.2 *REMOVAL OF HYDROCARBON IMPACTED SOIL (GC02)*

As noted in Section 3.1.1, hydrocarbon impacts have been identified in soil in the northern portion of the GC02 sub-site. During construction of the stormwater drainage channel intersecting the GC02 and RY02 sub-sites, hydrocarbon impacted material was removed to depths of up to 4 mBGL and disposed off-site in order to reduce the mass of hydrocarbons in soil and the potential for these materials to act as an ongoing source of contaminants to groundwater. The location of the stormwater drainage channel is shown on Figures 4 and 9 (Appendix A).

3.2.3 *INSTALLATION OF CONCRETE CHANNEL BARRIER*

To minimise potential off-site migration of residual groundwater impacts within GC02 via the stormwater drainage channel, an impervious concrete barrier was constructed surrounding the stormwater drainage infrastructure. The barrier was constructed using poured concrete and is approximately 9 m length \times 1 m width and extends from approximately 1.3 mAHD to the depth of channel excavation. A survey plan showing the location of the barrier is provided in Appendix E and the approximate location is shown on Figure 9 (Appendix A).

4 RESPONSIBILITIES

4.1 IMPLEMENTATION OF THE LTEMP

Table 4.1 provides a summary of the responsibilities for the implementation and management of the LTEMP. The list of responsibilities does not replace any regulatory, planning, or licensing responsibilities of the parties in undertaking works at the property. In any instance where an inconsistency arises between this LTEMP and environmental law, the environmental law will take precedence over the LTEMP.

Table 4.1 Responsibilities

STAKEHOLDER	RESPONSIBILITIES
Property owner (Transport for NSW)	<ul style="list-style-type: none"> — Provide the LTEMP to the parties responsible for site management and maintenance (if separate to property owner, such as Council and asset/utility owners) and attach the LTEMP to all ground maintenance contracts commissioned for the site. — Provide the LTEMP to Before You Dig Australia for implementation during intrusive works by asset/utility owners or their contractors. — Attach a copy of the LTEMP to any lease or contract for sale of the site. — Liaise with Council to include the LTEMP on any Section 10.7 planning certificate (i.e. zoning certificate) applicable to the site.
Property owner (Transport for NSW) or delegated authority (e.g. Council)	<ul style="list-style-type: none"> — Incorporate the LTEMP into any other management plans implemented at the site. — Review the effectiveness of the LTEMP annually and following any incident or other event that suggests the LTEMP is ineffective. — Implement and communicate improvements and amendments to the LTEMP as needed. — Provide sufficient resources, where needed, to comply with the requirements of this LTEMP. — Brief contractors of the existence of this LTEMP, and their roles within it. — Maintain records of maintenance and/or reports related to the site.
Council	<ul style="list-style-type: none"> — Attach a copy of the LTEMP to the Section 10.7 planning certificates. — Inform TfNSW if any reports are received through the Council Transport Management Centre relating to the site.
Site occupants, including lessees and sub-lessees (if any)	<ul style="list-style-type: none"> — Provide the LTEMP to any maintenance worker (who is engaged under the direction of the occupant). — Comply with the LTEMP during occupation of the property. — Inform the property owner if disturbance of impacted soil may occur and/or if potential exposure to impacted soil is identified (e.g. existing containment barrier is compromised) or may result in the future. — Inform the owner if disturbance of the impervious drainage channel barrier may occur and/or if disturbance/damage to the barrier is identified or may result in the future.

STAKEHOLDER	RESPONSIBILITIES
Asset/utility owners Maintenance workers (including Council)	<ul style="list-style-type: none"> — Comply with the LTEMP, including relevant legislation and guidance (including the <i>Work Health and Safety Act 2011</i> and <i>Work Health and Safety Regulation 2017</i> or relevant legislation current at the time of the works) when conducting works at the property. — Inform the owner/occupant if disturbance of impacted soil may occur and/or if potential exposure to impacted soil is identified (e.g. existing containment barrier is compromised) or may result in the future. — Inform the owner/occupant if disturbance of the impervious plug may occur and/or if disturbance/damage to the plug is identified or may result in the future.

This LTEMP is prepared with the assumption that any future works on the site shall be undertaken in accordance with relevant regulations, guidelines and laws current at the date works, in NSW including but not limited to those referred to in Section 1.4.

4.2 ENVIRONMENTAL AWARENESS AND TRAINING

All site owners, occupants and maintenance workers should be made aware of this LTEMP and the requirements it contains. In particular, maintenance workers should complete the following:

- a site induction;
- familiarisation with the requirements of the LTEMP; and
- environmental emergency response training.

A record of completion of the LTEMP induction should be recorded in the log in Appendix B and a checklist of LTEMP requirements for maintenance workers is presented in Appendix D.

4.3 NON-COMPLIANCES AND LTEMP REVIEW

Any non-compliance with this LTEMP should be recorded on the non-compliance register in Appendix C2 and communicated to the site owner.

This LTEMP will apply indefinitely or until such a time that a site audit statement can be prepared by a NSW EPA accredited site auditor stating that an EMP is not required for the site.

Review of this LTEMP by the site owner (and other parties where delegated by the site owner) should be conducted every 12 months, and would include but not be limited to the following aspects:

- review non-compliances and corrective actions during the period;
- ensure inspections have been undertaken, including during and subsequent to any maintenance works conducted at the site, in addition to regular inspections to confirm that the capping layer is intact (refer to Table 5.1 for further details);
- ensure maintenance recommended (if any) during inspections and/or intrusive works has been completed;
- review whether proposed changes to land use may conflict with the LTEMP (including consideration of residual soil contamination at the site, as documented in Section 3.1); and
- review and update this LTEMP to meet changes in applicable regulatory requirements.

4.4 APPROVAL AND CONSENT REQUIREMENTS

The need for approvals or consent for any maintenance works to be undertaken at the site should be assessed by the contractors undertaking the works.

4.5 REGULATORY FRAMEWORK AND ENFORCEMENT

In order for the LTEMP to be effective it must be practical and enforceable. With respect to environmental management of the subject site, the activities identified as needing to be controlled include:

- protection of the health risk of maintenance staff involved in future subsurface works;
- ensuring subsurface works are reinstated to suitable standard for protection of future site users; and
- consideration of environmental risk as part of any future redevelopment of the site.

The WCX3B infrastructure approval⁶ requires that “*Contaminated land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement is obtained that declares the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.*” This LTEMP has been prepared to fulfill the conditions of the site audit statement, specifically to facilitate suitability of the site for purpose subject to compliance with this LTEMP. The WCX3B infrastructure approval is subject to regulation by the NSW Department of Planning, Industry and Environment.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55) provides the primary mechanism for ensuring an LTEMP is enforced with respect to changes in the allowable land uses or material alterations to the site and surrounds. Of the above identified activities, future redevelopment work at the site is significant enough to require consent from the local council (Inner West Council) under the EP&A Act, which provides an avenue for enforcement as Council may require adoption of this LTEMP as a condition of development consent for the site.

The NSW Department of Urban Affairs and Planning (DUAP; now the Department of Planning, Industry and Environment) produced a guidance document titled *Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land* (NSW DUAP, 1998) which also provides guidance for Council or other planning authorities in how to assess if the land is contaminated through applying the NSW EPA investigation processes and guidelines. Along with SEPP 55, the NSW DUAP (1998) guideline also makes provision for consent authorities to require a site audit statement to be prepared by a NSW EPA accredited site auditor if the consent authority consider it necessary in order for them to make their decision.

With respect to ensuring maintenance staff are protected during works and that the site surface is appropriately restored upon completion it is necessary to rely on the responsibility of Transport for NSW as the current owner of the site, and by delegation, their facilities management subcontractors. Both these parties have responsibilities under work health and safety (WHS) legislation which will require them to appropriately manage the risks during future subsurface maintenance works. Workers can be protected by provisions of the *Work Health and Safety Act 2011* provided they are notified of the presence of this LTEMP. Under Section 3.1 of the *Work Health and Safety Regulation 2017* a person who has a duty under the regulation to manage risks to health and safety must comply with requirements to manage risk, identify reasonably foreseeable health and safety hazards, eliminate risks to health and safety as far as practicable or if not reasonably practicable then minimise those risks. They must also maintain and review any control measures that are in place to protect worker health and safety. Risk assessment on construction projects is managed at the task level by preparation of work method statements and at the project level by preparation of WHS plans. Therefore, provided there is

⁶ Number SSI 7485.

an adequate method for notification of the presence of the LTEMP, its recommendations can be readily built into the health and safety management of any construction project. Compliance with relevant WHS legislation is mandatory.

4.6 PUBLIC NOTIFICATION OF THIS LTEMP

The remediation of this site has been undertaken under the infrastructure approval (SSI 7485) and, under approval condition E182, the site is subject to a site audit. When a site audit statement states that the site is suitable for a particular use if managed in accordance with an EMP, the plan must be attached to the site audit statement and included in the site audit report. As per condition E183 of the infrastructure approval, the Secretary of the NSW Department of Planning and Environment (or nominee) and Inner West Council are also to be provided a copy of the site audit statement. Council must provide a notification of the existence of the audit on the planning certificate/s for the site issued under section 10.7 of the EP&A Act.

5 RISK MANAGEMENT ACTIVITIES AND CONTROLS

Risk from soil and groundwater contamination retained on the site may arise when contaminated soils are disturbed, including where the geotextile marker layer and hardstand capping is breached, or where contaminated groundwater is encountered. These risks include:

- potential exposure of workers to contamination via direct contact or ingestion of soil/groundwater and/or inhalation of dust;
- potential erosion/discharge of contaminated soils or groundwater to drains and waterways; and
- inappropriate disposal or placement of excavated contaminated soils or groundwater.

Management controls will be required to be implemented for any ground disturbance activities within areas of retained contamination at the site. The capping management system to be maintained at the site is presented in Section 5.1 and controls for areas of retained contamination are discussed in Section 5.2.

5.1 CAPPING DESIGN

The soil capping constructed at the site is described below and is shown on Figures 3A to 3C (Appendix A). The landscape design and associated surface finishing specifications (including cross-sections where available) are provided in Appendix A (drawing references RIC-HSL-DRG-20-UD-150-201 to RIC-HSL-DRG-20-UD-150-204). The approximate extent of geofabric at the site (i.e. within the GC02 and GC04 sub-sites) is shown on Figure 11. Topographic surveys and cross-sections showing the site surface level and capping thickness for each of the RY02, GC01, GC02 and GC04 sub-sites are also included in Appendix E.

Grass/vegetative areas

- basal layer of permeable coloured synthetic geotextile material or coloured mesh layer (overlying existing soils) – **GC02 and GC04 sub-sites only;**
- capping layer comprising validated soil and surficial layer (approximately 300 mm thickness) of either turf or mulch.

General cap arrangement drawings for unsealed/landscaped areas of the site showing details of the marker layer and soil cap construction in GC02 and GC04 are presented in Figure 5.1 below. Examples of the geotextile marker layer and mesh marker layer⁷ are shown in Figure 5.2 and Figure 5.3, respectively.

The geotextile fabric covered the majority of the GC02/GC04 sub-site areas, except for beneath the elevated seating terraces constructed in the southern portion of the site (refer Section 01 in Appendix E, approximate offset 0 m to 25 m). Terraced retaining walls have been constructed to provide a stepped platform with approximately 0.5 m high incremental seating terraces. The retaining walls have been backfilled using validated imported soil. The finished surface level (FSL) of the terraces range between 1.7 and 6.3 m above pre-construction level.

A geotextile marker layer was not installed in the RY02 and GC01 sub-sites.

It is noted the location of known asbestos impacted soil at sub-site GC01 has been capped with shotcrete as part of the WCX3B project construction works, followed by placement of backfill and landscape material.

⁷ Mesh marker layer installed in GC02 sub-site only.

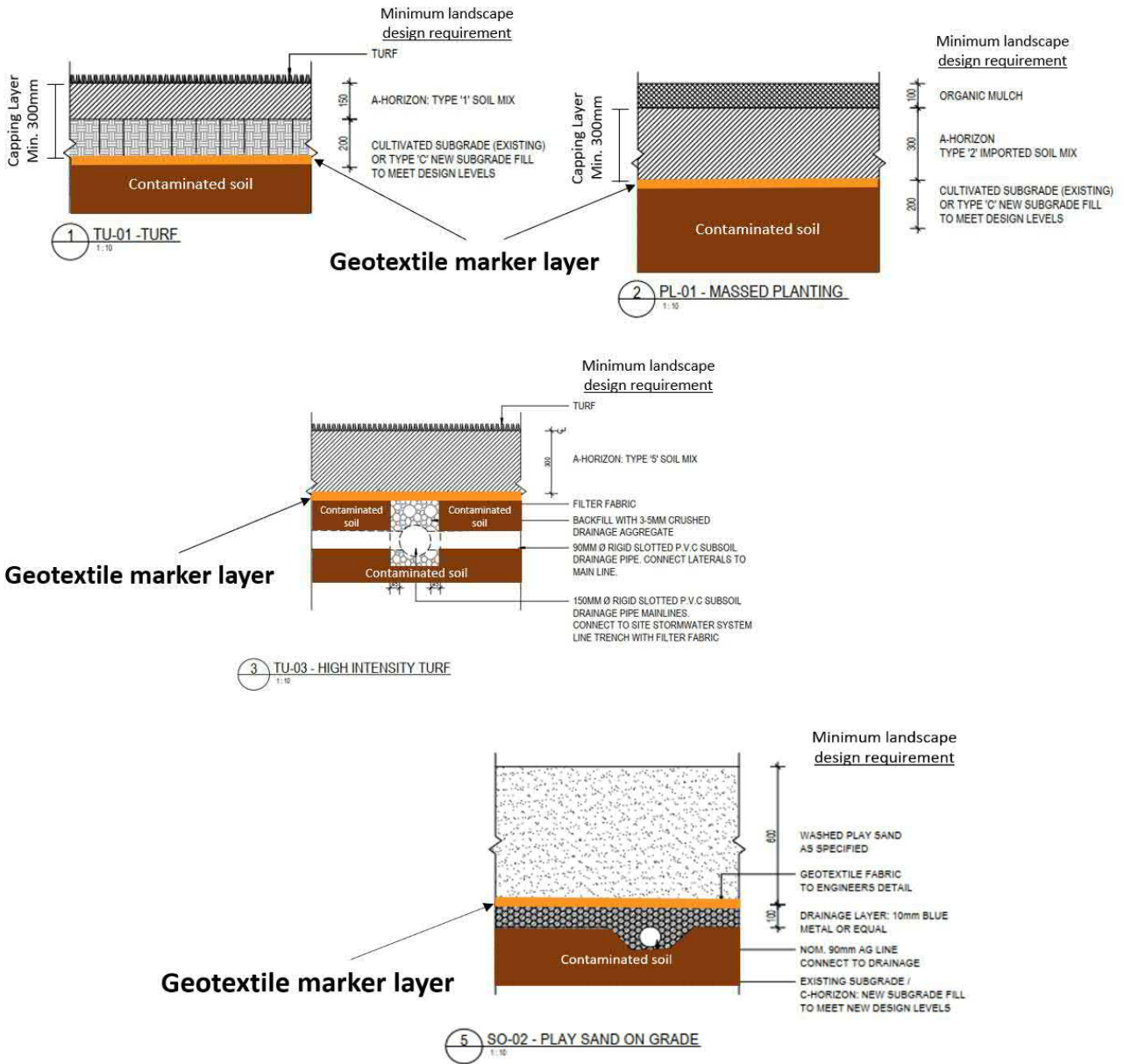


Figure 5.1 GC02 and GC04 capping specifications



Figure 5.2 Geotextile marker layer



Figure 5.3 Mesh layer present at select locations beneath GC02 playing field

Pavement/roadway

The pavement capping comprises an impervious layer of concrete and/or asphalt – a geotextile layer was not installed below concrete or asphalt pavement at the site.

5.2 MANAGEMENT CONTROLS

Management controls will be required to be implemented for any ground disturbance activities within areas of retained contamination at the site, in addition to activities that may result in contact with localised hydrocarbon impacted groundwater present in the GC02 sub-site. The controls for these areas are outlined in Table 5.1 below and in Appendix D.

In addition to the locations of known residual soil contamination shown in Figure 4 (Appendix A), the potential exists for contamination to be present in fill material in other areas of the site, including asbestos. As such, the unexpected finds procedure documented in Section 5.3 should be implemented during works in all site areas.

All activities/tasks that require the engagement of contractors should be undertaken in accordance with current regulatory requirements, in particular the *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2017* (or relevant legislation current at the time of the proposed works).

A summary of the main legislation, planning instruments and guidelines that relate to the management of contaminated land in NSW at the time of preparation of the LTEMP is provided in Section 1.4. This list should be reviewed for currency at the time of any proposed works. The advice of a suitably qualified environmental consultant, the NSW EPA, and/or Council should be sought where there is uncertainty as to the regulatory requirements.

5.3 UNEXPECTED FINDS PROCEDURE

An unexpected finds procedure shall be implemented during intrusive works at the site to ensure the health and safety of staff, contractors, and visitors with regards to potential unidentified contamination. The objective of the unexpected finds procedure is to describe procedures minimising exposure of all site users to possible contamination at the site through the development and implementation of the management systems outlined herein. It is the responsibility of the site owner to ensure that each time an action is undertaken, that the action is recorded and signed off.

Typical indicators of contamination include but are not limited to:

- unusual odours;
- stained soil;
- sheens on soil or water;
- unusual colours;
- crystalline or powdery substances;
- presence of drums
- fragments of asbestos containing material; and,
- underground storage tanks.

In the interests of ensuring worker health and safety, and protection of the environment, any unexpected findings should be handled with care including segregation of the area from general site workers and the public and obtaining specialist advice on the handling and disposal of the material.

Where unexpected finds are encountered, the following management measures shall be immediately conducted:

- Cease any further ground disturbance in the area of the find(s).

- Do not remove or unnecessarily disturb the area of the find(s).
- The discoverer of the find(s) will notify workers in the immediate vicinity of the find(s) so that work can be temporarily halted.
- The site owner will be informed of the find(s), including details regarding the location and nature of the find.
- Notify authorities needed to obtain emergency response for any health or environmental concerns (e.g. fire brigade).
- Notify any of the authorities that the site owner is legally required to notify (e.g. NSW EPA, Council).
- Restrict access to the area via placement of barricades to ensure that the area of the find(s) is adequately marked as a no-go area for workers and machinery or further disturbance and that the potential for accidental impact is avoided.
- Where feasible, ensure that any excavation/area of disturbance remains open so that the finds can be recorded and verified. Excavation/area of disturbance may be backfilled if this is necessary to comply with work safety requirements. An excavation/area of disturbance that remains open should only be left unattended if it is safe and adequate protective fencing is installed around it.

Following the immediate response outlined above a contingency plan is to be implemented. The contingency plan for the site should generally include:

- Suitably qualified environmental consultant (or occupational hygienist as appropriate) is to inspect the issue of concern and determine the nature of the issue and the appropriate approach to assessing or managing the issue.
- The environmental consultant (or occupational hygienist as appropriate) is to undertake an assessment considered necessary to determine the management strategy for the area. Assessment of occupational, public and environmental risk should be considered, particularly potential explosive or toxic gases, toxic chemicals and buried unexploded ordnance.
- If unexpected contamination is found and remediation action is considered necessary, a remediation strategy for the area is to be prepared by the environmental consultant.
- Excavated material is to be placed back into the excavation or removed from the site. Any material to be removed from site must be placed in labelled skip bins or stockpiled as instructed by the environmental consultant and tested for subsequent disposal to a licenced facility.

Development works in the area of the find(s) may re-commence, if and when outlined by the management strategy, developed in consultation with, and approved by the environmental consultant.

Table 5.1 Management controls

MANAGEMENT CONTROL	PERSON RESPONSIBLE
MAINTENANCE AND MONITORING	
Visual inspection of capping	
<ul style="list-style-type: none"> — All surfaces of the site (paved and unpaved) must be visually inspected every 6 months for breaches in containment. The inspection should document the condition of the grass surface or soil cover/planting and also record if any orange geofabric or mesh layer is visible in the GC02/GC04 sub-site areas. — Grass in good condition Y / N — Evidence of soil erosion Y / N — Orange geofabric or mesh layer visible Y / N — Where deterioration of the grass cover or soil surface/planting is recorded corrective landscape works should be undertaken within a 3-month period. — Where a breach is observed that may result in exposure to residual soil, repairs are to be conducted as soon as practicable. 	Site owner
Maintenance of capping	
<p>General capping detail</p> <p>Landscaped areas on the site incorporate a cap comprising the following:</p> <ul style="list-style-type: none"> — a barrier layer of coloured geofabric or mesh impermeable to root penetration to confine the impacted material (GC02 and GC04 sub-sites only – refer to Figure 11 in Appendix A); — a layer of validated soil with minimum thickness 150 mm (instated above the geofabric/mesh layer where present); and — surface layer of grass or mulch. <p>Paved areas incorporate a cap comprising hardstand (no geofabric layer is installed beneath hardstand capping).</p> <p>Maintenance</p> <ul style="list-style-type: none"> — Where additional material is required to maintain the capping layer, additional certified virgin excavated natural material (VENM¹) or excavated natural material (ENM) shall be imported to the site. — If the imported fill requires testing to validate it as suitable, samples should be collected by a suitably qualified environmental consultant and analysed for heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN), polycyclic 	Site owner

MANAGEMENT CONTROL	PERSON RESPONSIBLE
<p>aromatic hydrocarbons (PAHs), organochlorine and organophosphate pesticides (OCPs and OPPs), polychlorinated biphenyls (PCBs), per- and poly-fluoroalkyl substances (PFAS) and asbestos.</p> <ul style="list-style-type: none"> — If VENM is imported to the site, 1 sample per 250 m³ or a minimum of 4 samples will be analysed per source site (whichever is greater). If more than 1,000 m³ is imported to the site, one additional sample shall be obtained per 1,000 m³. — If ENM is imported to site the material will be tested in accordance with the NSW EPA resource recovery exemption for ENM. <p>Should additional material be required to be imported to the site for landscaping purposes (such as topsoil, mulch, compost, etc.), these materials should be tested to validate as suitable for the site use. Sampling should be conducted at a frequency consistent with Table 3 of NSW EPA (2022) <i>Contaminated Land Guidelines: Sampling design part 1 – application</i> for volumes <200 m³ and as per <i>Column 3 – Minimum number of samples for 95% UCL</i> of Table 4 NSW EPA (2022). Samples will be analysed for heavy metals, TRH, BTEXN, PAHs, OCPs and OPPs, PCBs, PFAS, asbestos, foreign materials and/or pathogen indicators (as required). Results will be compared to the applicable human health criteria outlined in the NEPM (2013), HEPA (2020) PFAS NEMP 2.0, NSW EPA <i>The compost order 2016</i> and/or Australian Standard 4454:2012 <i>Composts, soil conditioners and mulches</i>.</p>	
MINOR WORKS (landscaping, subsurface works unlikely to breach cap/marker layer or encounter hydrocarbon impacted groundwater in GC02)	
<p>During minor subsurface works the following tasks must be undertaken:</p> <ul style="list-style-type: none"> — The site owner must inform all personnel who may undertake subsurface work that hydrocarbons, PAHs, heavy metals and asbestos may be present within soil across the site. — The extent of the geotextile and plastic mesh marker layer must be communicated to all personnel who may undertake subsurface works. — A safe work method statement (SWMS) must be prepared for the work. — Appropriate work health and safety measures must be developed and implemented to minimise risk of exposure to contamination. <p>The SWMS shall include the following contamination control measures (as a minimum):</p> <ul style="list-style-type: none"> — employ confined space entry procedures for excavations and utility pits prior to entry; — workers wear appropriate personal protective equipment (PPE), e.g. gloves, eye and respiratory protection, disposable overalls which should be worn and disposed of appropriately at completion of each work shift, and use of a boot wash; — workers avoid creating dust (e.g. use of light water sprays, avoid working in hot and windy conditions). Where dust is unavoidable wear respiratory protection; — workers do not eat, drink, or smoke during works; — workers wash hands and face immediately after works; 	<p>Site owner</p> <p>Maintenance workers</p>

MANAGEMENT CONTROL	PERSON RESPONSIBLE
<ul style="list-style-type: none"> — brush/wash excavation tools at end of each work shift. Ensure surplus materials returned to stockpile areas and avoid spreading potentially contaminated materials across site; — waste materials are managed so as not to generate dust; — during excavation works (including stormwater system maintenance works) all soil/fill materials should be considered to be potentially contaminated with hydrocarbons, PAHs, heavy metals and asbestos irrespective of visual/olfactory observations; — all stockpiled soil/fill materials excavated from the site be placed on sealed ground with bunds and sediment retention measures put in place immediately after the stockpile is formed; and — potentially contaminated stockpiled soil must be sampled, assessed and classified for disposal off-site at an appropriately licensed waste facility by an approved contractor in accordance with the requirements of NSW EPA (2014) waste classification guidelines. 	
MAJOR WORKS (major civil/utility works likely to breach cap/marker layer or encounter hydrocarbon impacted groundwater in GC02)	
<p>More stringent management requirements to those listed above are a possible requirement of the Planning Authority (e.g. Council) as part of the Development Application process. These requirements may include investigation or remediation of the hydrocarbon, PAH, heavy metals and asbestos contaminated soils, and/or hydrocarbon impacted groundwater in GC02.</p>	Maintenance workers
<p>Management controls for an observed breach of containment (hardstand or landscaped areas) will include immediate temporary cover of the affected area with clean material or geofabric (where practicable) and fencing off of the area. For repair of the containment/cap all subsurface maintenance controls are to apply.</p> <p>Where major works are undertaken in locations of known asbestos impacted material (refer to Figure 4 in Appendix A), an Asbestos Management Plan should be developed to ensure appropriate management controls are implemented.</p> <p>During any planned works on the site that breaches the cap it is important that the planning documentation be reviewed, and the progress and status on completion of the works should be inspected by the site owner or representative. The inspections are to be carried out on a daily basis during works and at completion of works. The inspector(s) shall note at least:</p> <ul style="list-style-type: none"> — Date and personnel on site; — Activities being undertaken; — That works are being undertaken in accordance with an approved SWMS; — Level of compliance with the SWMS; and — Condition of all environmental controls. 	<p>Site owner</p> <p>Maintenance workers</p>

MANAGEMENT CONTROL	PERSON RESPONSIBLE
<p>In the event of a non-conformance this information will be documented, and corrective actions implemented in a timely manner. Where no issues are identified the record should be kept for reference purposes.</p> <p>Should contaminated material be disturbed, this material shall be disposed off-site under appropriate waste classification or be placed/maintained beneath the marker layer and/or hardstand cap. The marker layer and/or cap shall be subsequently reinstated as per the procedure outlined below.</p> <p>Upon completion of work that breaches the cap, validation of the containment/recapping shall be conducted by a suitably qualified environmental consultant. Records demonstrating that the re-capping has been adequately installed to the correct thickness and integrity shall be maintained these records should include details of material validation and location of the re-capping. The following steps must be followed:</p> <ol style="list-style-type: none"> 1 Temporarily cover and fence area; 2 Notify site owner; 3 Engage contractor to repair hardstand or capping; 4 Site owner to engage a suitably qualified environmental consultant if repair to capping (geofabric or mesh layer and clean soil) is required; 5 Contractor to engage surveyor if repair to capping (geofabric/mesh and clean soil) is required to demonstrate that a sufficient thickness of material has been reinstated; 6 Environmental consultant to provide validation letter to site owner; and 7 Site owner to inspect and document that all hardstand areas have been adequately reinstated. <p><u>Management of groundwater – GC02 (eastern site area)</u></p> <p>Given the presence of residual hydrocarbon contamination in groundwater at the GC02 sub-site, proposed subsurface works that are likely to encounter groundwater in this area should consider the potential for exposure to hydrocarbons to occur and have control measures in place to protect construction/maintenance workers. Depth to the perched groundwater in this area of the site is approximately 2.5 mBGL.</p> <p>During subsurface works in this area of the site, it is recommended that monitoring of any open excavations be undertaken at the boundary of the work zone using a photo-ionisation detector (PID) to assess the presence of volatile compounds in ambient air. A PID concentration of 15 ppm in ambient outdoor air should be used as a trigger value to modify controls or engage an occupational hygienist to assess risk level to workers. In the absence of other criteria, in accordance with SafeWork Australia, <i>Workplace Exposure Standards for Airborne Contaminants</i> a time weighted average for benzene (a volatile carcinogenic compound used in hydrocarbon fuels) is 1 ppm. The 15 ppm detectable volatiles by PID adds a further degree of conservatism to ensure a 1 ppm benzene ambient air concentration is not reached. PID monitoring shall be recorded by site personnel and submitted for review on a daily basis.</p> <p>Where any level of odours are present half-face respirators should be kept on hand and used by any staff that are concerned or indicate the odours to be causing them headaches, etc. Respirators should be fitted with an A1P2 and/or E1 cartridge that filters both particulates and organics.</p>	

MANAGEMENT CONTROL	PERSON RESPONSIBLE
<p>Mitigation measures to be employed to control odour and/or exposure to chemical vapours during any subsurface works encountering hydrocarbon impacted groundwater may include the following:</p> <ul style="list-style-type: none"> — site personnel will be supplied with and wear appropriate protective clothing including disposable overalls, gloves and face masks to prevent contact with volatile chemicals and their breakdown products; — application of odour suppressants such as ‘Biosolve’ to reduce odours; — periodic vapour monitoring during excavation works; — excavation activities are to be undertaken in favourable weather conditions (i.e. low wind and heat), where practicable; — exposed surfaces covered overnight or during periods of low excavation activity; — plan excavation works to minimise off-site nuisance odours; — minimise exposed surface area of stockpiles and excavation cuts; and — dispose of any odorous material to a licenced landfill facility as soon as practicable. <p>Excavation surfaces should be left open for short durations only, where possible, to minimise the potential of any surface water entering work areas. If dewatering of shallow excavations is required due to rainfall or groundwater ingress, these works should be carried out by a licenced waste management contractor and pumped water should be collected in appropriate drums or tankers for off-site disposal with supporting waste transport documentation.</p> <p>It is noted that there is to be no extraction of groundwater for any purposes other than for monitoring (if required in future) or as required during construction of any on-site development, with appropriate regulatory approval for the management and disposal of any groundwater encountered.</p> <p><u>Impervious barrier (stormwater channel)</u></p> <p>Works that may disturb the impervious concrete barrier within the stormwater channel shall be undertaken in consultation with a suitably qualified environmental consultant and/or NSW EPA accredited auditor.</p>	
REPORTING REQUIREMENTS	
Annual capping inspection report to be provided to site owner.	Site owner Maintenance workers
Importation suitability report (as required) to be provide to site owner prior to material import.	Site owner Maintenance workers

¹ The *Protection of the Environment Operations Act 1997* (POEO Act) defines virgin excavated natural material (VENM) as ‘natural material (such as clay, gravel, sand, soil or rock fines): (a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and (b) that

does not contain any sulfidic ores or soils or any other waste, and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.’

6 INCIDENT AND EMERGENCY PROCEDURES

Emergency procedures will be detailed and explained at the start up induction for any works being undertaken. These will include:

- the name(s) of the first aider/s on site;
- the location of first aid kits and fire extinguishers;
- emergency procedure details for the site, including contact details for emergency services and the nearest hospital;
- site addresses details and map with route to nearest hospital highlighted; and
- location of the site assembly area.

6.1 INCIDENT/EMERGENCY RESPONSE

All unplanned events, irrespective how minor, shall be reported at the first opportunity to the site owner (and other parties where delegated by the site owner). In the event that an environmental incident occurs which results in non-compliance with environmental requirements the incident will be classified as an emergency.

Any pollution or other environmental incident which occurs should be immediately managed and contained as much as can be safely done. The severity of the incident should be assessed and notification made to the appropriate parties:

- The site owner (and other parties where delegated by the site owner) should be notified of all environmental incidents.
- Appropriate regulatory authorities, such as the NSW EPA, SafeWork NSW, Council etc., should be notified as required.

Emergency contacts are listed in Table 5.1.

Table 6.1 Emergency contacts

PERSON/AGENCY	PHONE NUMBER
Site owner (Transport for NSW)	131 782
EMERGENCY SERVICES	
Emergency	000
Police – non-emergency (Balmain Police Station)	+61 2 9556 0624
Ambulance – non-emergency (Rozelle Ambulance)	+61 2 9320 7777
NSW Fire and Rescue – non-emergency (Balmain Fire Station)	+61 2 9818 2348
Balmain Hospital	+61 2 9395 2111
OTHER	
Inner West Council	(02) 9392 5000
SafeWork NSW	13 10 50

6.2 COMPLAINTS AND ENVIRONMENTAL INCIDENT REGISTER

The receipt of complaints will be handled and responded to according to Transport for NSW policy.

The purpose of the complaints and environmental incident register is to maintain a register of complaints from nearby residents or concerned parties, which will include a record of any action taken with respect to the complaints.

The complaints and environmental incident register is required to be completed immediately following the receipt of any complaints associated with works undertaken at the site. Written complaints should be addressed or acknowledged within five days of the complaint being received. Complaints made by telephone or in person should be addressed or acknowledged within two days of receipt. Complaints and incidents will be forwarded to Transport for NSW.

A copy of the complaints and environmental incident register is included in Appendix C1.

LIMITATIONS

SCOPE OF SERVICES

This environmental site assessment report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and WSP (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

RELIANCE ON DATA

In preparing the report, WSP has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, WSP has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. WSP will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

ENVIRONMENTAL CONCLUSIONS

In accordance with the scope of services, WSP has relied upon the data and has not conducted any environmental field monitoring or testing in the preparation of the report. The conclusions are based upon the data and visual observations and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Within the limitations imposed by the scope of services, the assessment of the site and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

REPORT FOR BENEFIT OF CLIENT

The report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party in relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

OTHER LIMITATIONS

WSP will not be liable to update or revise the report to take into account any events, emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to nor ownership of the properties, buildings and structures referred to in the report, nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

APPENDIX A

FIGURES

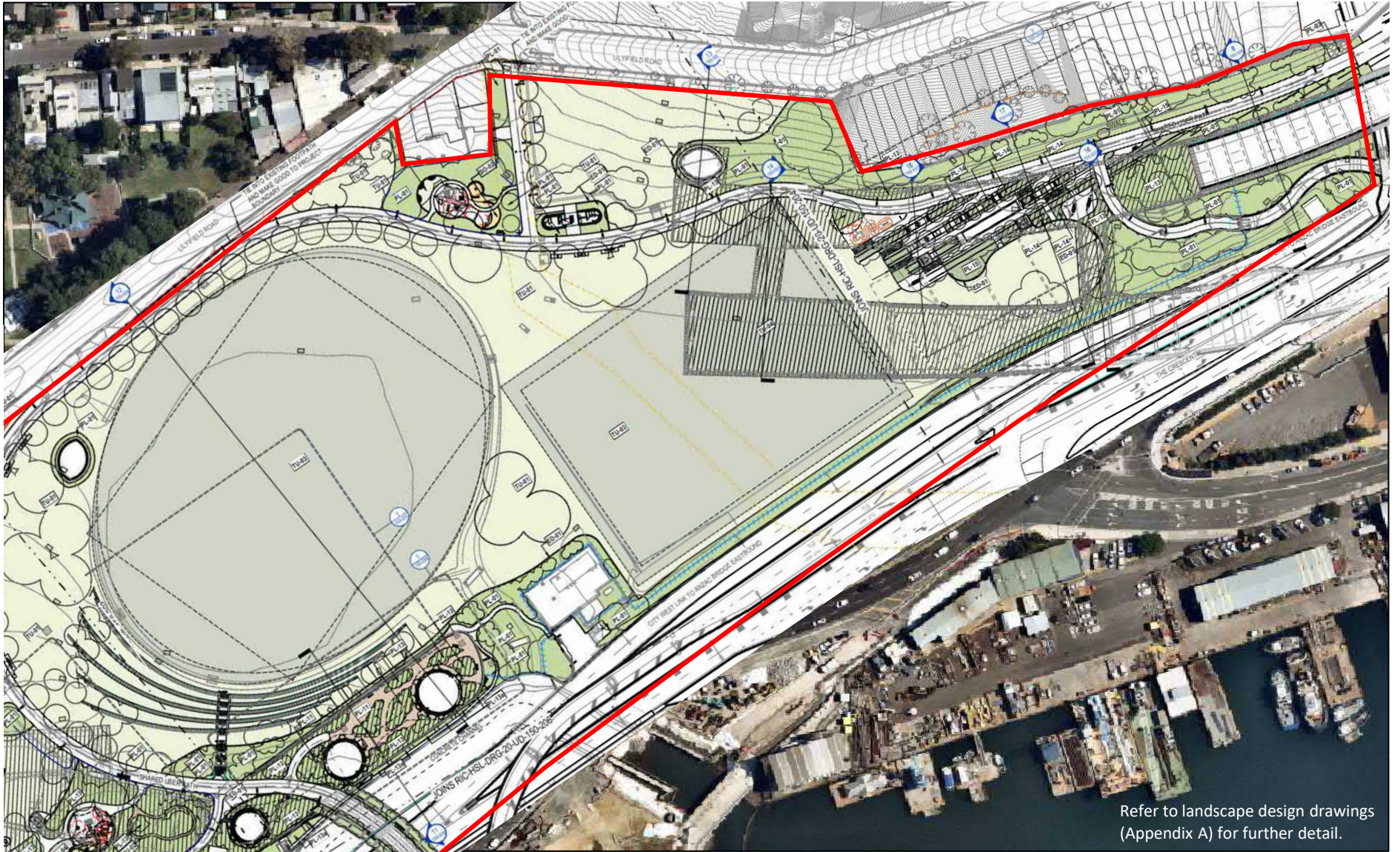




Sub-site boundaries

Image source: nearmap (Oct 2023)

Figure 1 – Site location and layout



Refer to landscape design drawings (Appendix A) for further detail.


 Site boundary



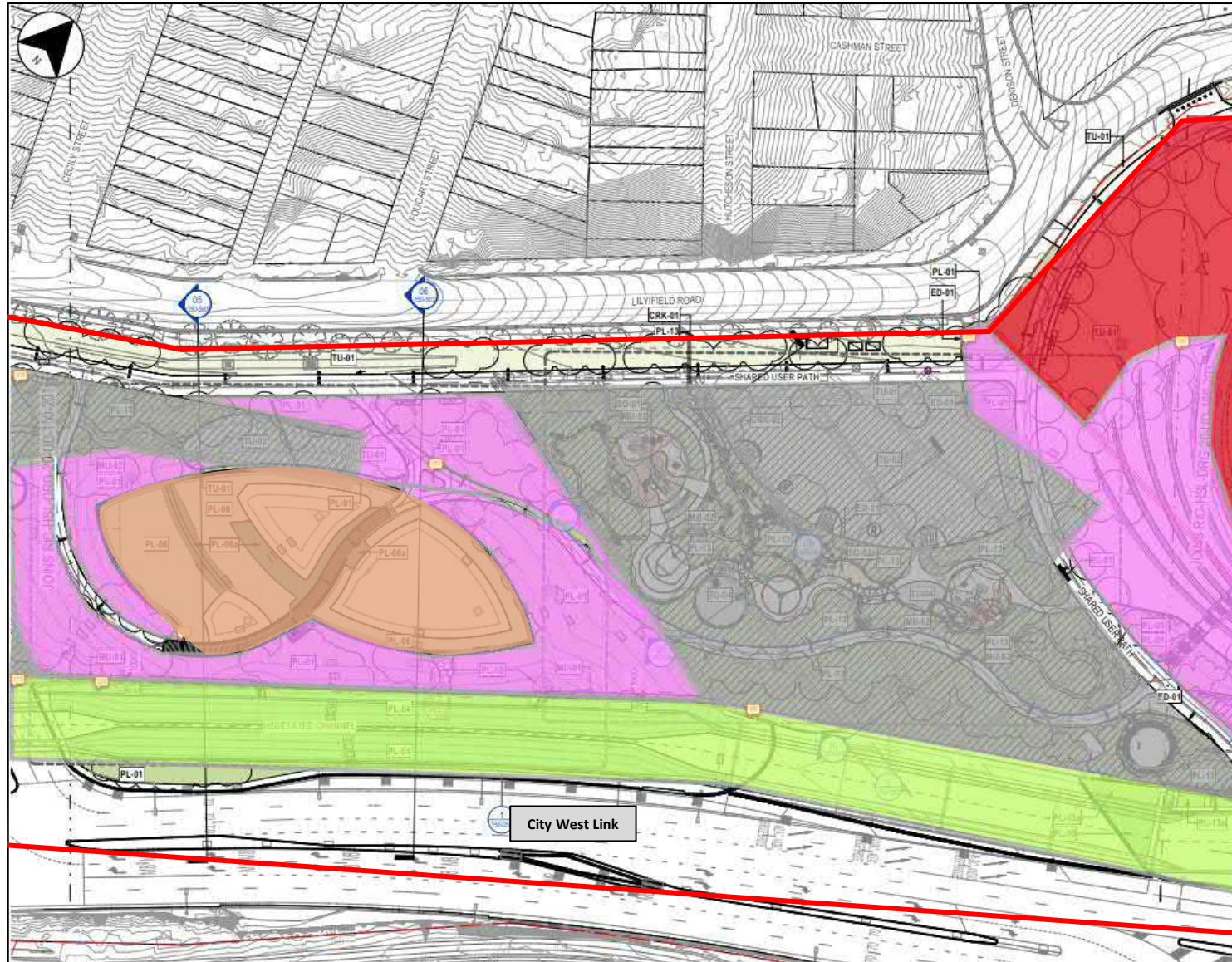
Figure 2A – Surface landscape overview



 Site boundary



Figure 2B – Surface landscape overview



- Approximate site boundary
- >1m
- Capping on subsurface C&C
- Above-ground structure
- Drainage channel
- 500mm-1m
- 300-500mm
- 150-300mm
- Marker layer + min. 300mm (off-site)

Figure 3A – Soil capping overview

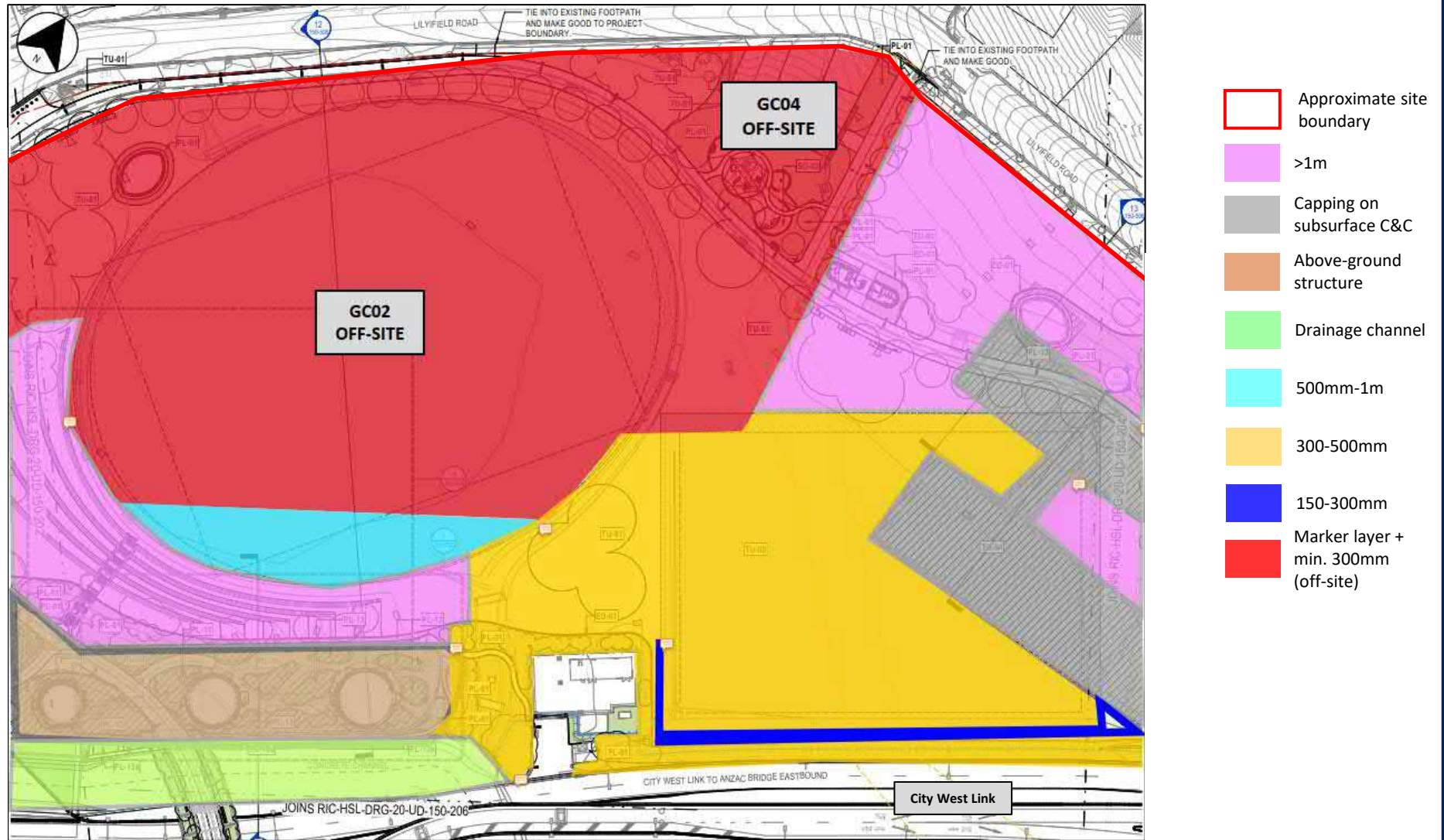


Figure 3B – Soil capping overview



- Approximate site boundary
- >1m
- Capping on subsurface C&C
- Above-ground structure
- Drainage channel
- 500mm-1m
- 300-500mm
- 150-300mm

Figure 3C – Soil capping overview



Image source: ReaMap (Oct 2023)



Sub-site boundaries



Heavy metals, PAHs, asbestos



Heavy metals, PAHs, asbestos, hydrocarbons



Stormwater channel



Location of soil contamination requiring management during subsurface works

Figure 4 – Approximate extent of retained soil contamination



Image source: nearmap (Oct 2023)

-  Sub-site boundaries
-  Location of soil contamination requiring management during subsurface works

Figure 5 – Soil contamination requiring management during subsurface works – GC02 sub-site

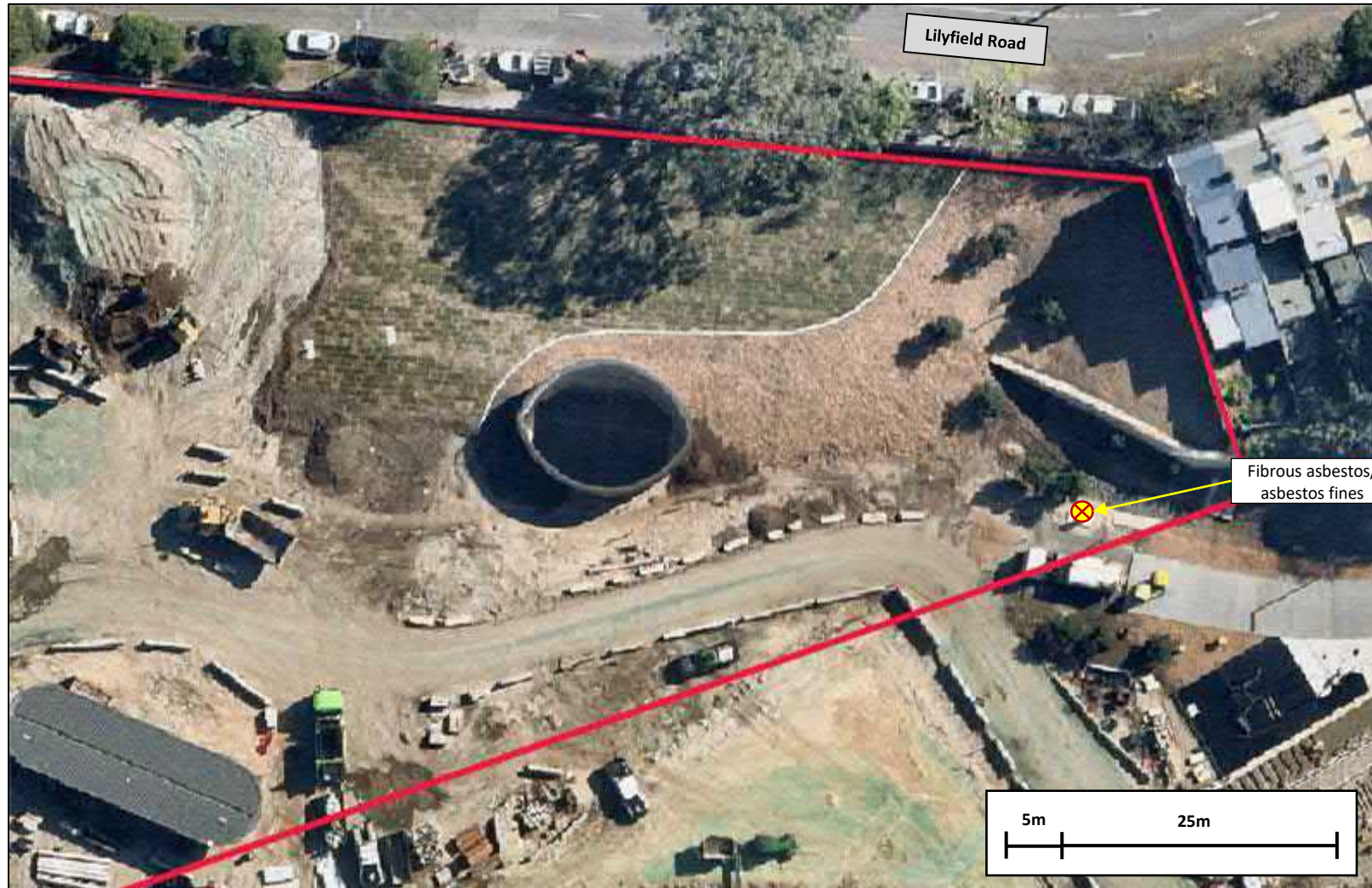



Image source: nearmap (Oct 2023)

 Sub-site boundaries



 Location of soil contamination requiring management during subsurface works

Figure 6 – Soil contamination requiring management during subsurface works – GC01 sub-site



Image source: nearmap (Oct 2023)

 Sub-site boundaries


 Approximate location of soil contamination requiring management during subsurface works

Figure 7 – Soil contamination requiring management during subsurface works – RY02 sub-site



Image source: nearmap (Oct 2023)



Sub-site boundaries



Location of soil contamination
requiring management
during subsurface works

Figure 8 – Soil contamination requiring management during subsurface works – GC04 sub-site

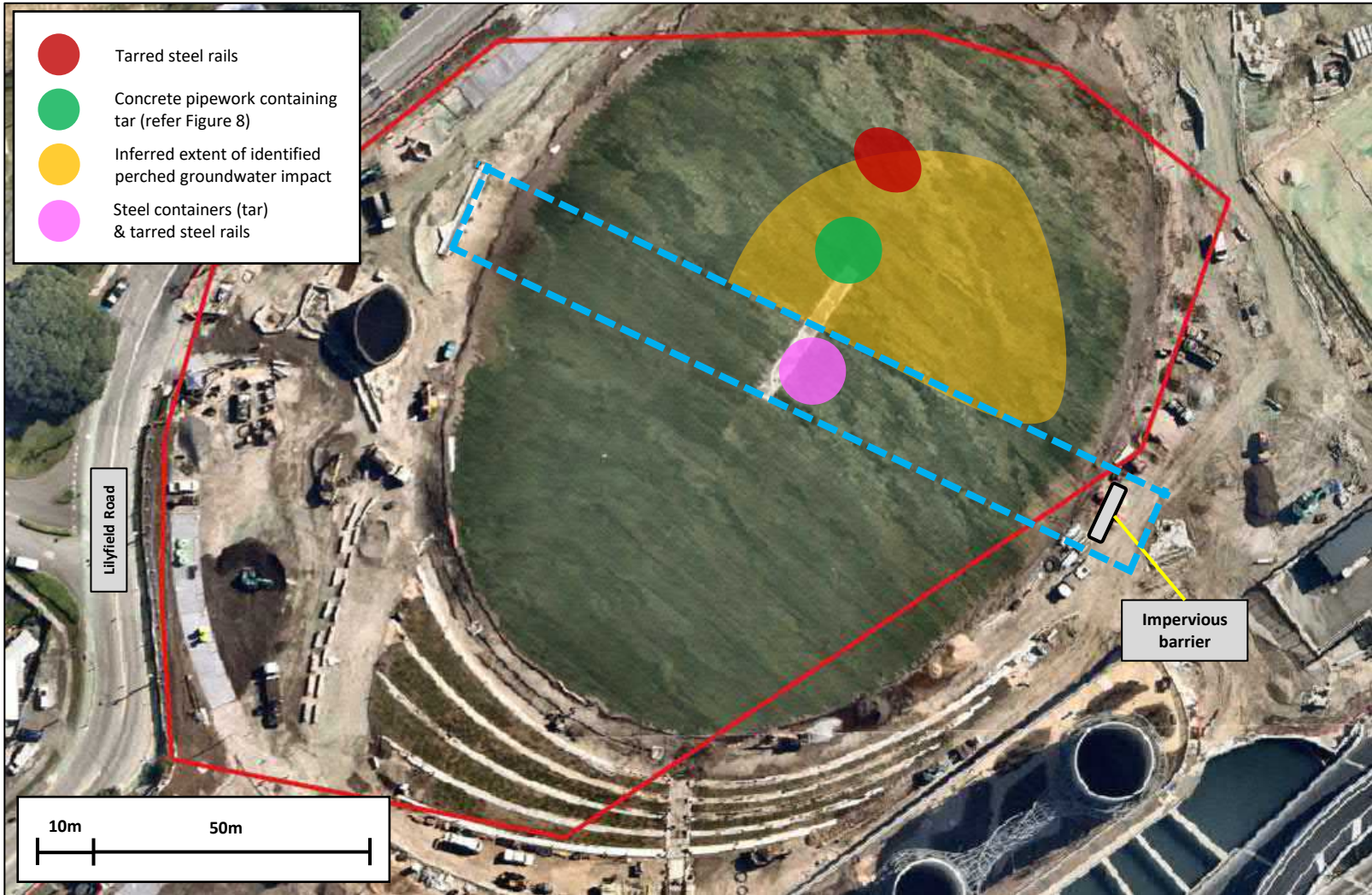


Image source: nearmap (Oct 2023)

Sub-site boundaries

Location of soil contamination requiring management during subsurface works

Stormwater channel

Figure 9 – Aesthetic impacts and hydrocarbons in groundwater – GC02 sub-site




- Stormwater channel
- Potential radius of concrete pipework
- Concrete pipe (in-situ/plugged)
- ... Former concrete pipe (removed)
- Former pit (removed)

Figure 10 – Potential extent of remaining concrete pipework in GC02



Image source: nearmap (Oct 2023)

 Site boundary

 Marker layer

Figure 11 – Approximate extent of marker layer

APPENDIX B

LTEMP INDUCTION REGISTER



APPENDIX C

COMPLAINTS AND ENVIRONMENTAL INCIDENT REGISTER



C1 COMPLAINTS AND ENVIRONMENTAL INCIDENTS REGISTER

DATE & TIME	TYPE OF COMMUNICATION	NAME, ADDRESS, & CONTACT NUMBER OF COMPLAINANT	NATURE OF COMPLAINT	RESPONSE/ CORRECTIVE ACTION	DATE OF RESPONSE	DATE COMPLAINANT NOTIFIED OF RESPONSE TAKEN	SIGNATURE/ POSITION

APPENDIX D

SUMMARY OF LTEMP REQUIREMENTS
FOR MAINTENANCE WORKERS



D1 SUMMARY OF LTEMP FOR MAINTENANCE WORKERS

SUMMARY MANAGEMENT PLAN FOR MAINTENANCE WORKERS	
<u>MINOR WORKS (landscaping, subsurface works unlikely to breach cap/marker layer)</u>	
Including weeding, gardening, cleaning and general maintenance activities.	
No specific controls required, providing the works do not significantly disturb the surfacing and underlying fill materials, and do not break any hardstand or compromise surface covering in landscaped areas.	<input type="checkbox"/>
<u>MAJOR WORKS (major civil/utility works likely to breach cap/marker layer or encounter hydrocarbon impacted groundwater in GC02)</u>	
Including any activities that significantly disturb the surface ground cover and expose the underlying fill materials or break the hardstand surface or compromise surface covering in landscaped areas, and activities that may intersect hydrocarbon contaminated groundwater in the north-western portion of the site.	
Control measures are required to be implemented.	<input type="checkbox"/>
All site workers and subcontractors to complete a site induction through NSW TfNSW prior to commencing any major works at the site.	<input type="checkbox"/>
During surface penetration Site personnel should use appropriate personal protective equipment (PPE) including: — Long sleeved shirt and long pants — P2 respirator or P2 dust mask — Protective gloves — Other PPE required under the WHS plan for the site works.	<input type="checkbox"/>
Implement good personal hygiene, including: — No eating, drinking, or smoking during works — Avoid contact with soil (wear gloves) — Wash hands and clothes after work — Wash hands before eating, drinking or smoking.	<input type="checkbox"/>
Implement dust control measures – this includes dampening of fill materials and any other exposed soil prior to and during excavation works.	<input type="checkbox"/>
Monitor excavations at the works boundary of the work zone using a photo-ionisation detector (PID) to assess the presence of volatile compounds in ambient air.	<input type="checkbox"/>
Implement odour/vapours measures as required, including appropriate PPE, face masks/respirators and application of odour suppressants (refer to Table 5.1 for additional odour/vapour controls).	<input type="checkbox"/>
Classify and dispose of any soils excavated from beneath the capping layer or any other surplus soils in accordance with the NSW EPA (2014) Waste Classification Guidelines.	<input type="checkbox"/>
Re-instate the geotextile and surface capping soils or hardstand surfaces following subsurface maintenance works.	<input type="checkbox"/>
Validate any imported fill materials required in accordance with NEPM (2013).	<input type="checkbox"/>

SUMMARY MANAGEMENT PLAN FOR MAINTENANCE WORKERS

Transport for NSW representative contact details:

Name:

Position:

Phone:

E-mail:

APPENDIX E

SITE SURVEYS

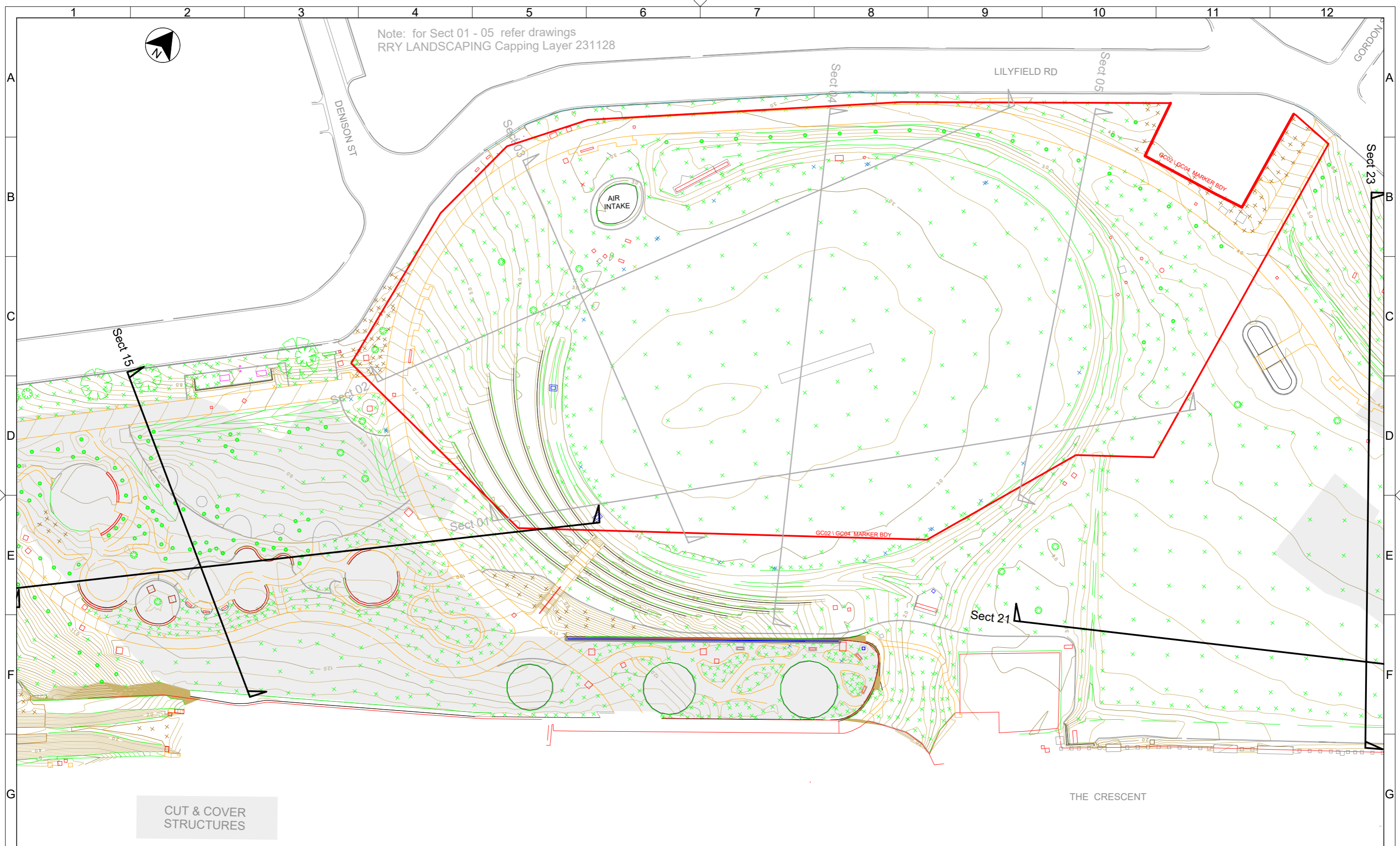




CUT & COVER STRUCTURES

SURVEYED BY		GENERAL NOTES / REFERENCES				  		DO NOT SCALE		DISCIPLINE	ZONE	CATEGORY	DESIGN PACKAGE	PLOT DATE	
INSTRUMENT TYPE								DRAWN BY		SURV	RRY	LSC	ROZELLE RAILYARDS - PARKLANDS TOPOGRAPHIC SURVEY RY02 AREA		
SERIAL NUMBER								COORDINATE SYSTEM		MGA94 Z56 A.H.D SCALE AT ORIGINAL A3 SIZE 1:1000					
DATE OF SURVEY								HEIGHT DATUM							
SIGNATURE															

Plotted: 31 at Thu Nov 30 14:02:51 2023



Note: for Sect 01 - 05 refer drawings
RRY LANDSCAPING Capping Layer 231128

CUT & COVER
STRUCTURES

SURVEYED BY	
INSTRUMENT TYPE	
SERIAL NUMBER	
DATE OF SURVEY	
SIGNATURE	

GENERAL NOTES / REFERENCES



DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
DRAWN BY	ROZELLE RAILYARDS - PARKLANDS TOPOGRAPHIC SURVEY RY02 AREA				
COORDINATE SYSTEM MGA94 Z56					
HEIGHT DATUM A.H.D					
SCALE AT ORIGINAL A3 SIZE 1:1000	SHEET 2 of 3			REVISION	

Plotted: 32 at Thu Nov 30 14:02:54 2023



CUT & COVER STRUCTURES

THE CRESCENT

Plotted: 33 at Thu Nov 30 14:02:58 2023

SURVEYED BY	
INSTRUMENT TYPE	
SERIAL NUMBER	
DATE OF SURVEY	
SIGNATURE	

GENERAL NOTES / REFERENCES





DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
DRAWN BY	ROZELLE RAILYARDS - PARKLANDS TOPOGRAPHIC SURVEY RY02 AREA				
COORDINATE SYSTEM MGA94 Z56					
HEIGHT DATUM A.H.D					
SCALE AT ORIGINAL A3 SIZE 1:1000	SHEET 3 of 3				REVISION

NOTE : UNDERLYING LAYER COLOURS


- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250452.141
 X = 330650.496
 Z = 13.520

DATUM RL 0.000

Offset	Current FSL Surface	Depth	Underlying Layer
0.000	13.520	-1.034	12.486
5.000	13.415	-0.999	12.416
10.000	13.352	-0.977	12.375
15.000	13.231	-0.930	12.301
20.000	13.087	-0.862	12.226
25.000	12.959	-0.793	12.166
30.000	12.821	-0.715	12.106
35.000	12.666	-10.207	2.459
40.000	11.899	-9.480	2.419
45.000	10.747	-8.381	2.366
50.000	9.540	-7.301	2.239
55.000	8.991	-6.797	2.194
60.000	8.545	-6.057	2.488
65.000	7.705	-5.434	2.270
70.000	6.948	-4.749	2.199
75.000	6.843	-4.678	2.165
80.000	6.759	-4.601	2.159
85.000	6.751	-4.603	2.148
90.000	6.847	-4.726	2.120
95.000	6.887	-4.782	2.105
100.000	6.914	-4.794	2.120
105.000	7.155	-5.019	2.136
110.000	7.406	-5.259	2.147
115.000	7.006	-4.860	2.146
120.000	6.171	-4.033	2.138
125.000	5.007	-2.891	2.116
130.000	5.009	-2.896	2.112
135.000	4.980	-2.869	2.112
140.000	5.019	-2.907	2.112
145.000	5.032	-2.923	2.109
150.000	5.740	-3.613	2.126
155.000	6.582	-4.438	2.144
160.000	7.368	-5.247	2.121
165.000	8.319	-6.217	2.102
170.000	9.053	-6.940	2.114

SECTION 11

SURVEYED BY		<p>GENERAL NOTES / REFERENCES</p> 	DO NOT SCALE	DISCIPLINE	ZONE	CATEGORY	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE			SURV	RRY	LSC	<p>PARKLANDS RY02 AREA LAYER DEPTHS</p>		
SERIAL NUMBER			DRAWN BY					
DATE OF SURVEY			COORDINATE SYSTEM					
SIGNATURE			MGA94 Z56		HEIGHT DATUM		SHEET 1 of 10	
		SCALE AT ORIGINAL A3 SIZE		A.H.D				
		1:						

Plotted: 1001 at 30-Nov-2023 14:11:26

NOTE : UNDERLYING LAYER COLOURS




- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250568.889
 X = 330768.213
 Z = 8.846

DATUM RL 0.000

	1	2	3	4	5	6	7	8	9	10	11	12																								
CURRENT FSL SURFACE	8.846	9.586	10.547	10.771	10.906	10.848	10.863	10.881	10.858	10.864	10.761	10.764	10.792	10.658	10.652	10.620	10.634	10.525	10.176	10.206	10.217	10.177	10.116	9.974	9.536	9.363	9.395	9.235	8.834	8.367	7.551	6.553	5.562	4.040	3.032	2.717
DEPTH	-6.710	-7.449	-8.404	-8.621	-0.308	-0.350	-0.455	-0.582	-0.653	-0.750	-0.739	-0.830	-0.949	-0.902	-0.982	-1.043	-1.139	-1.101	-0.825	-0.919	-0.999	-1.028	-1.007	-0.906	-7.477	-7.310	-7.346	-7.190	-6.785	-6.310	-5.474	-4.452	-3.436	-1.869	-0.352	-0.290
UNDERLYING LAYER	2.136	2.136	2.143	2.150	10.599	10.498	10.408	10.299	10.206	10.114	10.022	9.933	9.842	9.756	9.670	9.578	9.496	9.425	9.351	9.287	9.218	9.149	9.109	9.068	2.060	2.053	2.050	2.045	2.049	2.056	2.077	2.101	2.127	2.170	2.680	2.428
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000	140.000	145.000	150.000	155.000	160.000	165.000	170.000	173.027

SECTION 12

SURVEYED BY		GENERAL NOTES / REFERENCES	  	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE	
INSTRUMENT TYPE					PARKLANDS RY02 AREA LAYER DEPTHS					
SERIAL NUMBER					SHEET 2 of 10					
DATE OF SURVEY										
SIGNATURE					SCALE AT ORIGINAL A3 SIZE 1:					

Plotted: 1002 at 30-Nov-2023 14:11:29

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data

Y = 6250500.246
 X = 330589.659
 Z = 12.326

DATUM RL 9.000

CURRENT FSL SURFACE	12.326	12.448	12.509	12.440	12.309	12.258	12.204	12.160	12.132	12.122	12.132	12.162	12.172	12.258	12.631	12.900	13.147	13.357	13.570	13.860	14.222	14.442
DEPTH	-0.434	-1.055	-1.176	-1.145	-1.067	-1.064	-1.043	-1.058	-1.088	-1.121	-1.174	-1.195	-0.951	-0.776	-0.908	-0.931	-0.923	-0.877	-0.841	-0.882	-0.926	-0.912
UNDERLYING LAYER	11.892	11.393	11.333	11.294	11.242	11.194	11.160	11.102	11.044	11.001	10.958	10.967	11.222	11.482	11.723	11.969	12.224	12.479	12.729	12.978	13.296	13.530
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	104.365

SECTION 13

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS RY02 AREA LAYER DEPTHS				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56	SHEET 3 of 10				
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:	<small>REVISION</small>				

Plotted: 1003 at 30-Nov-2023 14:11:33

NOTE : UNDERLYING LAYER COLOURS




- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250563.935
 X = 330682.924
 Z = 10.733

DATUM RL -0.500

CURRENT FSL SURFACE	10.733	9.715	9.797	9.536	9.092	8.440	7.672	6.797	5.311	5.042	5.537	6.717	7.316	6.975	7.255	7.365	6.973	5.408	3.886	1.608	3.466	5.633	
DEPTH	-0.156	-1.324	-8.156	-6.924	-6.653	-6.118	-5.390	-4.531	-3.060	-2.816	-3.328	-4.525	-5.157	-4.885	-5.224	-5.349	-3.384						
UNDERLYING LAYER	10.577	8.391	1.641	2.612	2.439	2.322	2.282	2.266	2.251	2.226	2.210	2.192	2.159	2.090	2.031	2.016	3.589						
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	

SECTION 14

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS RY02 AREA LAYER DEPTHS				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56	SHEET 4 of 10				
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:	REVISION				

Plotted: 1004 at 30-Nov-2023 14:11:36

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data

Y = 6250640.665
 X = 330759.925
 Z = 7.841

DATUM RL 4.500

CURRENT FSL SURFACE	7.841	8.243	8.967	8.899	8.681	9.297	9.968	9.998	9.956	10.004	10.170	10.341	10.799	10.889	10.964	11.021	11.712	11.879	12.093	12.313	12.591	
DEPTH	0.002	-0.844	-1.262	-0.930	-0.489	-0.870	-1.327	-1.149	-0.900	-0.729	-0.699	-0.660	-0.916	-0.812	-0.688	-0.541	-1.038	-0.971	-0.946	-0.911		
UNDERLYING LAYER	7.843	7.399	7.705	7.969	8.192	8.427	8.641	8.848	9.056	9.275	9.471	9.682	9.883	10.076	10.276	10.480	10.674	10.908	11.147	11.402		
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	

SECTION 15

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS RY02 AREA LAYER DEPTHS				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56	SHEET 5 of 10				
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:					

Plotted: 1005 at 30-Nov-2023 14:11:39

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data

Y = 6250734.722
 X = 331007.961
 Z = 3.013

DATUM RL 0.000

Offset	Current FSL Surface	Depth	Underlying Layer
0.000	3.013	-0.389	2.625
5.000	3.079	-0.421	2.658
10.000	3.088	-0.390	2.698
15.000	3.011	-0.354	2.657
20.000	2.533	-0.405	2.128
25.000	2.403	-0.348	2.056
30.000	2.506	-0.340	2.166
35.000	2.509	-0.350	2.159
40.000	2.530	-0.358	2.172
45.000	2.551	-0.347	2.204
50.000	2.573	-0.341	2.232
55.000	2.598	-0.351	2.247
60.000	2.620	-0.356	2.264
65.000	2.637	-0.350	2.287
70.000	2.662	-0.351	2.311
75.000	2.691	-0.340	2.351
80.000	2.696	-0.310	2.386
85.000	2.704	-0.306	2.399
90.000	2.737	-0.321	2.416
95.000	2.769	-0.322	2.447
100.000	2.788	-0.313	2.475
105.000	2.808	-0.335	2.473
110.000	2.830	-0.342	2.487
115.000	2.851	-0.336	2.515
120.000	2.869	-0.318	2.551
125.000	2.892	-0.719	2.173
130.000	2.938	-0.707	2.230
135.000	3.044	-0.770	2.273
140.000	2.837	-0.497	2.341
145.000	3.353	-0.951	2.402
150.000	3.539	-1.081	2.458
155.000	3.679	-1.135	2.544
160.000	3.859	-1.237	2.622
165.000	3.992	-1.328	2.664
170.000	4.168	-1.460	2.709
175.000	4.328	-1.450	2.879
180.000	4.405	-1.318	3.087
185.000	4.493	-1.208	3.285
190.000	4.553	-1.101	3.452
195.000	4.633	-1.048	3.585
200.000	4.721	-1.042	3.679

SECTION 21

SURVEYED BY	GENERAL NOTES / REFERENCES	  	DO NOT SCALE	DISCIPLINE	ZONE	CATEGORY	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE			SURV	RRY	LSC			
SERIAL NUMBER			PARKLANDS RY02 AREA					
DATE OF SURVEY			LAYER DEPTHS					
SIGNATURE			SHEET 6 of 10					

Plotted: 1006 at 30-Nov-2023 14:11:42

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data

Y = 6250835.317
 X = 331110.789
 Z = 3.487

DATUM RL 0.500

Offset	Current FSL Surface	Depth	Underlying Layer
0.000	3.487	-0.879	2.608
5.000	3.753	-1.087	2.666
10.000	3.874	-1.147	2.727
15.000	4.028	-1.203	2.825
20.000	4.107	-1.137	2.970
25.000	4.322	-1.168	3.154
30.000	4.460	-1.111	3.348
35.000	4.605	-1.049	3.555
40.000	4.760	-0.998	3.763
45.000	4.873	-0.927	3.946
50.000	4.882	-0.783	4.099
55.000	4.987	-0.766	4.221
60.000	5.042	-0.744	4.298
65.000	5.105	-0.770	4.335
70.000	5.141	-0.776	4.365
75.000	5.160	-0.781	4.379
80.000	5.185	-0.783	4.401
85.000	5.212	-0.799	4.413
90.000	5.233	-0.814	4.419
95.000	5.229	-0.797	4.432
100.000	5.272	-0.825	4.447
105.000	5.339	-0.892	4.446
110.000	5.398	-0.924	4.474
115.000	5.433	-0.371	5.062
120.000	5.471	-0.356	5.115
125.000	5.500	-0.336	5.164
130.000	5.550	-0.333	5.217
135.000	5.602	-0.356	5.246
140.000	5.674	-0.414	5.260
145.000	5.638	-0.368	5.270
150.000	5.687	-0.389	5.298
155.000	5.699	-0.370	5.329
160.000	5.730	-0.369	5.361
165.000	5.756		
170.000	5.785		
175.000	5.808		
180.000	5.804		
185.000	5.826		
190.000	5.763		

SECTION 22

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS RY02 AREA LAYER DEPTHS				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56					
DATE OF SURVEY			HEIGHT DATUM A.H.D	SHEET 7 of 10				
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:					

Plotted: 1007 at 30-Nov-2023 14:11:46

NOTE : UNDERLYING LAYER COLOURS




- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250895.106
 X = 331017.469
 Z = 7.186

DATUM RL 0.000

	1	2	3	4	5	6	7	8	9	10	11	12																					
CURRENT FSL SURFACE	7.186	6.959	6.695	6.404	6.057	5.672	5.391	4.894	4.492	3.967	4.092	4.053	3.980	3.832	3.533	3.403	3.324	3.295	3.250	3.196	3.146	3.096	3.048	3.001	2.965	2.917	2.860	2.798	2.754	2.709	2.586	2.349	2.573
DEPTH	-3.886	-3.659	-3.395	-3.104	-2.757	-2.377	-2.114	-1.634	-1.243	-0.743	-0.908	-0.350	-1.302	-1.237	-0.315	-0.331	-0.311	-0.325	-0.852	-0.846	-0.840	-0.860	-0.856	-0.862	-0.884	-0.331	-0.328	-0.324	-0.324	-0.355	-0.329	-0.313	-0.350
UNDERLYING LAYER	3.300	3.300	3.300	3.300	3.300	3.294	3.277	3.261	3.248	3.224	3.184	3.703	2.678	2.595	3.218	3.072	3.013	2.969	2.398	2.351	2.307	2.236	2.192	2.140	2.081	2.586	2.532	2.474	2.430	2.353	2.257	2.036	2.223
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000	140.000	145.000	150.000	155.000	160.000

SECTION 23

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE	
INSTRUMENT TYPE		  	PARKLANDS RY02 AREA LAYER DEPTHS						
SERIAL NUMBER			DRAWN BY	SHEET 8 of 10					
DATE OF SURVEY			COORDINATE SYSTEM MGA94 Z56						
SIGNATURE			HEIGHT DATUM A.H.D						
			SCALE AT ORIGINAL A3 SIZE 1:						

Plotted: 1008 at 30-Nov-2023 14:11:49

NOTE : UNDERLYING LAYER COLOURS




- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250889.176
 X = 331100.049
 Z = 10.873

DATUM RL 0.500

CURRENT FSL SURFACE	10.873	10.075	9.426	9.344	9.104	8.392	3.813	4.040	4.385	4.324	4.336	4.014	4.045	4.032	4.098	3.809	3.744	3.692	3.623	3.532	3.420	3.139	3.275
DEPTH	-7.573	-6.775	-6.126	-6.044	-5.804	-5.067	-0.541	-1.013	-1.391	-1.374	-1.428	-1.164	-1.220	-1.214	-1.353	-1.192	-1.234	-1.189	-1.095	-0.976	-0.806	-0.508	-0.355
UNDERLYING LAYER	3.300	3.300	3.300	3.300	3.300	3.325	3.273	3.027	2.994	2.950	2.909	2.849	2.825	2.818	2.745	2.616	2.510	2.503	2.528	2.556	2.614	2.631	2.920
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	108.500

SECTION 24

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS RY02 AREA LAYER DEPTHS				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56	SHEET 9 of 10				
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:	<small>REVISION</small>				

Plotted: 1009 at 30-Nov-2023 14:11:52

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- BROWN = SUBGRADE
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data

Y = 6250878.716
 X = 331174.113
 Z = 5.311

DATUM RL 1.500

CURRENT FSL SURFACE	5.311	4.779	5.260	5.172	5.151	5.248	5.002	4.977	4.878	4.728	4.546	4.296	3.951	3.660
DEPTH	-0.387	-0.389	-0.350	-0.731	-0.784	-0.960	-0.806	-0.885	-1.035	-1.125	-1.149	-1.037	-0.770	-0.317
UNDERLYING LAYER	4.924	4.390	4.910	4.441	4.366	4.288	4.196	4.092	3.843	3.603	3.397	3.259	3.181	3.342
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000

SECTION 25

SURVEYED BY	
INSTRUMENT TYPE	
SERIAL NUMBER	
DATE OF SURVEY	
SIGNATURE	

GENERAL NOTES / REFERENCES



DO NOT SCALE

DRAWN BY

COORDINATE SYSTEM
MGA94 Z56

HEIGHT DATUM
A.H.D

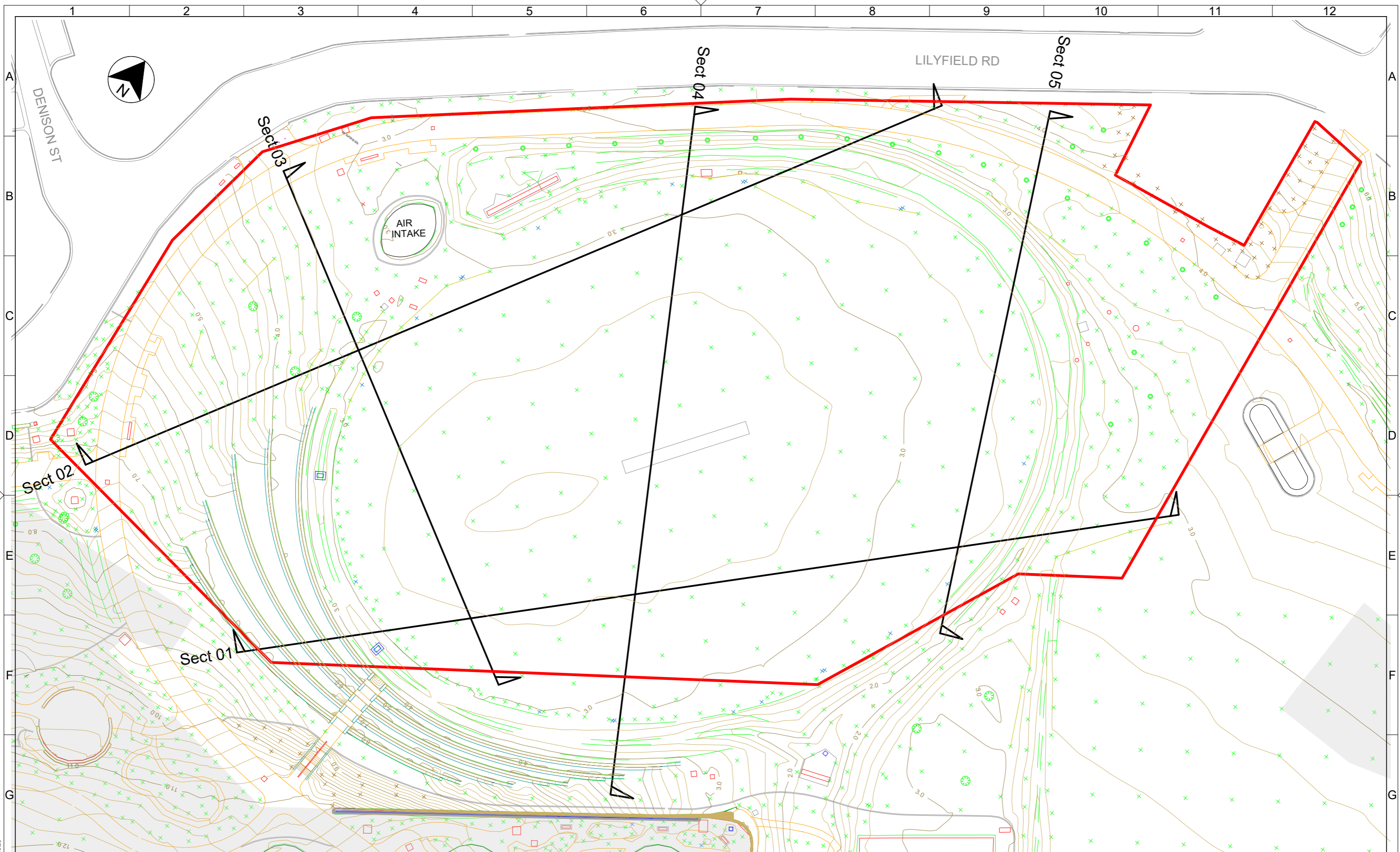
SCALE AT ORIGINAL A3 SIZE
1:




DISCIPLINE	ZONE	CATEGORY	DESIGN PACKAGE	PLOT DATE
SURV	RRY	LSC		

**PARKLANDS RY02 AREA
LAYER DEPTHS**

SHEET 10 of 10

Plotted: 1010 at 30-Nov-2023 14:11:55



SURVEYED BY		GENERAL NOTES / REFERENCES			  		DO NOT SCALE	DISCIPLINE	ZONE	CATEGORY	DESIGN PACKAGE	PLOT DATE
INSTRUMENT TYPE							SURV	RRY	LSC	20_61	28-11-2023	
SERIAL NUMBER							ROZELLE RAILYARDS - PARKLANDS					
DATE OF SURVEY							TOPOGRAPHIC SURVEY					
SIGNATURE		GC02 \ GC04 CAPPING LAYER SECTIONS					SHEET 1 of 1		REVISION			

Plotted: plan_1 at Tue Nov 28 15:31:08 2023

NOTE : UNDERLYING LAYER COLOURS


- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data
 Y = 6250668.620
 X = 330870.006
 Z = 8.363

DATUM RL -2.000

Offset	Current FSL Surface	Depth (capping thickness)	Underlying Layer	Marker Layer (only)
0.000	8.363	-6.275	2.088	
5.000	7.006	-4.879	2.127	
10.000	6.554	-4.381	2.172	
15.000	5.327	-3.112	2.215	
20.000	4.022	-1.674	2.348	
25.000	3.005	-0.342	2.663	2.663
30.000	2.854	-0.359	2.495	2.495
35.000	3.070	-0.377	2.694	2.694
40.000	3.134	-0.354	2.779	2.779
45.000	3.157	-0.332	2.825	2.825
50.000	3.179	-0.323	2.856	2.856
55.000	3.202	-0.326	2.876	2.876
60.000	3.219	-0.329	2.890	2.890
65.000	3.232	-0.337	2.895	2.895
70.000	3.234	-0.343	2.890	2.890
75.000	3.211	-0.332	2.879	2.879
80.000	3.197	-0.328	2.869	2.869
85.000	3.204	-0.341	2.864	2.864
90.000	3.207	-0.348	2.859	2.859
95.000	3.190	-0.325	2.865	2.865
100.000	3.186	-0.326	2.860	2.860
105.000	3.173	-0.319	2.854	2.854
110.000	3.164	-0.320	2.844	2.844
115.000	3.168	-0.327	2.841	2.841
120.000	3.157	-0.330	2.827	2.827
125.000	3.113	-0.329	2.784	2.784
130.000	3.066	-0.328	2.738	2.738
135.000	3.021	-0.323	2.697	2.697
140.000	2.969	-0.320	2.649	2.649
145.000	2.902	-0.344	2.558	2.558
150.000	2.868	-0.392	2.477	2.477
155.000	2.837	-0.407	2.429	2.429
160.000	2.784	-0.406	2.378	2.378
165.000	2.697	-0.380	2.317	2.317
170.000	2.118	-0.318	1.800	1.800
175.000	2.345	-0.457	1.888	1.888
180.000	2.724	-0.537	2.187	2.187
185.000	2.836	-0.555	2.281	2.281
190.000	2.897	-0.448	2.449	2.449
195.000	2.940	-0.459	2.481	2.481
200.000	2.950	-0.511	2.440	2.440
205.000	2.976	-0.475	2.501	2.501

SECTION 1

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE 28-11-2023
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS OVAL LAYER DEPTHS GC02 \ GC04				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56					
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:					
			SHEET 1 of 5					

Plotted: 1001 at 28-Nov-2023 15:34:36

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data
 Y = 6250681.197
 X = 330819.609
 Z = 7.152

DATUM RL -2.000

	1	2	3	4	5	6	7	8	9	10	11	12																														
CURRENT FSL SURFACE	7.152	7.026	6.901	6.540	6.123	5.822	5.474	4.936	4.385	3.900	3.631	3.165	3.010	2.938	3.041	3.095	3.061	3.075	3.088	3.070	3.048	3.037	3.032	3.028	3.030	3.028	3.023	3.017	2.992	2.960	2.941	2.922	2.822	2.607	2.296	2.286	2.907	3.232	3.300	3.367	3.731	3.731
DEPTH (capping thickness)			-0.463	-0.454	-0.390	-0.502	-0.587	-0.443	-0.377	-0.387	-0.439	-0.328	-0.429	-0.351	-0.609	-0.600	-0.439	-0.325	-0.331	-0.315	-0.310	-0.309	-0.315	-0.324	-0.334	-0.342	-0.358	-0.382	-0.397	-0.385	-0.433	-0.479	-0.445	-0.346	-0.342	-0.312	-0.470	-0.397	-0.350	-0.351	-0.346	-0.346
UNDERLYING LAYER			6.438	6.085	5.733	5.320	4.887	4.493	4.007	3.514	3.193	2.838	2.581	2.587	2.431	2.495	2.622	2.750	2.757	2.754	2.738	2.728	2.716	2.704	2.696	2.686	2.665	2.636	2.595	2.575	2.508	2.442	2.377	2.261	1.954	1.974	2.437	2.835	2.950	3.016	3.384	3.384
MARKER LAYER (only)			6.438	6.085	5.733	5.320	4.887	4.493	4.007	3.514	3.193	2.838	2.581	2.587	2.431	2.495	2.622	2.750	2.757	2.754	2.738	2.728	2.716	2.704	2.696	2.686	2.665	2.636	2.595	2.575	2.508	2.442	2.377	2.261	1.954	1.974	2.437	2.835	2.950	3.016	3.384	3.384
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000	140.000	145.000	150.000	155.000	160.000	165.000	170.000	175.000	180.000	185.000	190.000	195.000	200.000	200.000

SECTION 2

Plotted: 1002 at 28-Nov-2023 15:34:39

SURVEYED BY		GENERAL NOTES / REFERENCES	  	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE 28-11-2023	
INSTRUMENT TYPE					PARKLANDS OVAL LAYER DEPTHS GC02 \ GC04					
SERIAL NUMBER					SHEET 2 of 5					
DATE OF SURVEY										
SIGNATURE					REVISION					

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- LIME = EXISTING SURFACE (prior to project start)




Centreline Data

Y = 6250757.377
 X = 330815.379
 Z = 3.458

DATUM RL -1.500

Offset	Current FSL Surface	Depth (capping thickness)	Underlying Layer	Marker Layer (only)
0.000	3.458			
5.000	3.413	-0.352	3.061	3.061
10.000	3.406	-0.347	3.059	3.059
15.000	3.418	-0.369	3.050	3.050
20.000	3.365	-0.378	2.987	2.987
25.000	3.260	-0.338	2.923	2.923
30.000	3.271	-0.399	2.871	2.871
35.000	3.098	-0.306	2.792	2.792
40.000	2.999	-0.358	2.641	2.641
45.000	3.041	-0.501	2.539	2.539
50.000	3.094	-0.428	2.666	2.666
55.000	3.083	-0.344	2.739	2.739
60.000	3.144	-0.332	2.811	2.811
65.000	3.203	-0.345	2.858	2.858
70.000	3.238	-0.336	2.902	2.902
75.000	3.273	-0.340	2.933	2.933
80.000	3.299	-0.339	2.960	2.960
85.000	3.327	-0.352	2.975	2.975
90.000	3.299	-0.314	2.986	2.986
95.000	3.264	-0.325	2.939	2.939
100.000	3.219	-0.326	2.894	2.894
105.000	3.180	-0.324	2.855	2.855
110.000	3.147	-0.330	2.817	2.817
115.000	3.116	-0.340	2.776	2.776
120.000	3.085	-0.331	2.754	2.754

SECTION 3

SURVEYED BY		  	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE 28-11-2023
INSTRUMENT TYPE			DRAWN BY	PARKLANDS OVAL LAYER DEPTHS GC02 \ GC04				
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56					
DATE OF SURVEY			HEIGHT DATUM A.H.D					
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:					
			SHEET 3 of 5					

Plotted: 1003 at 28-Nov-2023 15:34:42

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data

Y = 6250821.983




X = 330877.694

Z = 3.124

DATUM RL -1.500

CURRENT FSL SURFACE	3.124	3.015	2.211	2.804	2.946	3.016	3.080	3.136	3.188	3.239	3.277	3.313	3.340	3.366	3.369	3.379	3.376	3.350	3.314	3.276	3.236	3.213	3.186	3.119	3.077	3.034	2.972	2.831	2.778	3.990	4.778
DEPTH (capping thickness)		-0.342	-0.350	-0.403	-0.431	-0.381	-0.355	-0.354	-0.358	-0.365	-0.362	-0.361	-0.360	-0.359	-0.340	-0.339	-0.335	-0.323	-0.327	-0.329	-0.329	-0.346	-0.354	-0.325	-0.322	-0.331	-0.320	-0.316	-0.412	-2.115	-2.925
UNDERLYING LAYER		2.673	1.861	2.401	2.515	2.635	2.725	2.782	2.830	2.874	2.915	2.953	2.980	3.007	3.030	3.039	3.042	3.027	2.987	2.947	2.907	2.867	2.832	2.794	2.756	2.703	2.652	2.515	2.366	1.875	1.853
MARKER LAYER (only)		2.673	1.861	2.401	2.515	2.635	2.725	2.782	2.830	2.874	2.915	2.953	2.980	3.007	3.030	3.039	3.042	3.027	2.987	2.947	2.907	2.867	2.832	2.794	2.756	2.703	2.652	2.515	2.366		
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000	140.000	145.000	149.369

SECTION 4

SURVEYED BY		GENERAL NOTES / REFERENCES	  	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE 28-11-2023	
INSTRUMENT TYPE				DRAWN BY	PARKLANDS OVAL LAYER DEPTHS GC02 \ GC04					
SERIAL NUMBER				COORDINATE SYSTEM MGA94 Z56						
DATE OF SURVEY				HEIGHT DATUM A.H.D						
SIGNATURE				SCALE AT ORIGINAL A3 SIZE 1:						
			SHEET 4 of 5		REVISION					

Plotted: 1004 at 28-Nov-2023 15:34:46

NOTE : UNDERLYING LAYER COLOURS

- PURPLE = MARKER LAYER
- GREY = PROTECTION SLAB (Cut & Cover structures)
- LIME = EXISTING SURFACE (prior to project start)

Centreline Data

Y = 6250867.366




X = 330939.207

Z = 4.282

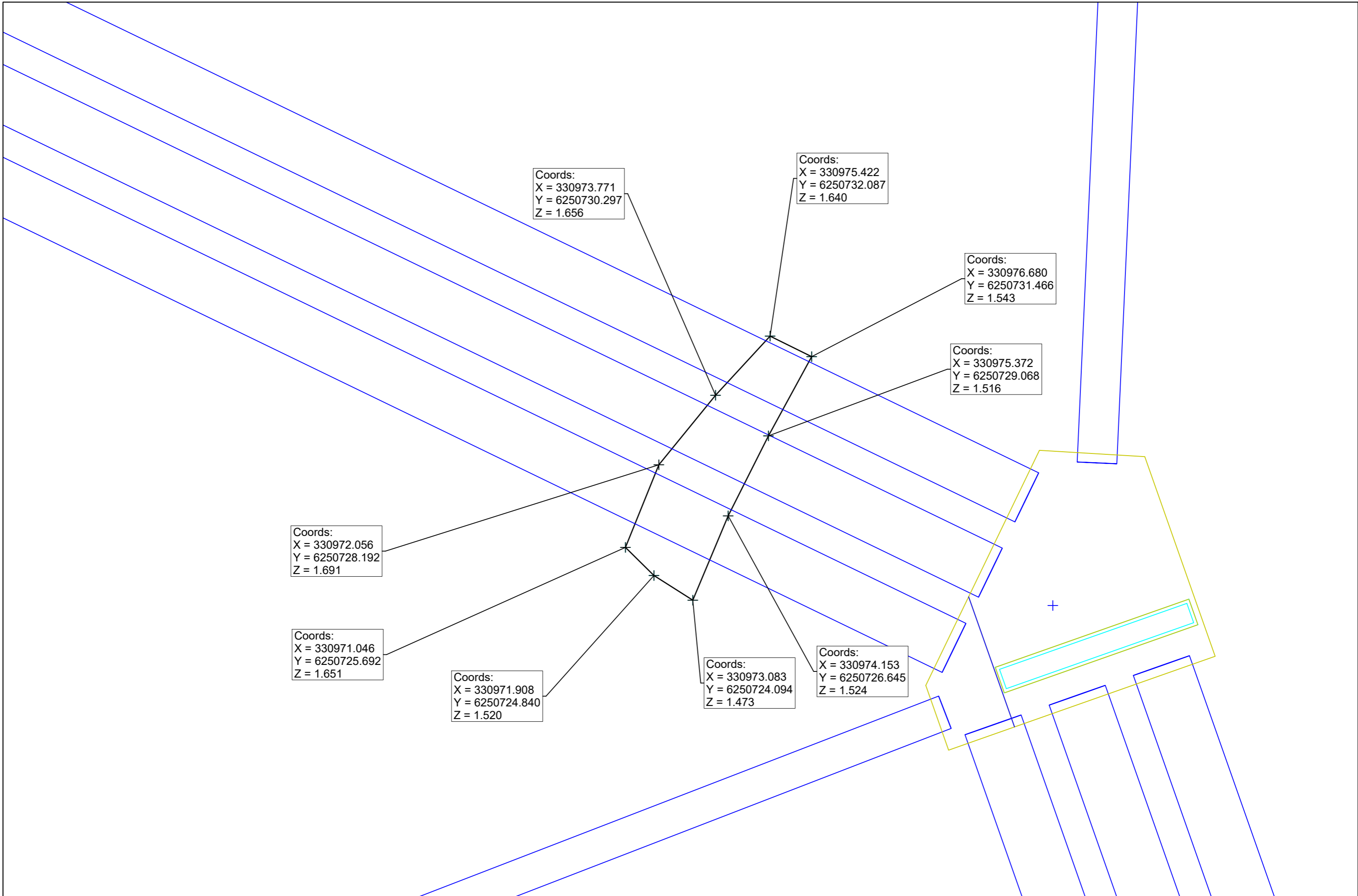
DATUM RL -2.000

CURRENT FSL SURFACE	4.282	3.929	3.480	3.433	3.527	3.207	2.486	2.448	2.607	2.724	2.741	2.766	2.810	2.807	2.820	2.832	2.846	2.857	2.848	2.816	2.792	2.760	2.468	2.087
DEPTH (capping thickness)	-0.453	-0.518	-0.351	-0.332	-0.325	-0.396	-0.371	-0.358	-0.336	-0.316	-0.311	-0.310	-0.336	-0.337	-0.356	-0.369	-0.381	-0.404	-0.416	-0.404	-0.388	-0.389	-0.393	-0.427
UNDERLYING LAYER	3.829	3.411	3.129	3.101	3.202	2.811	2.115	2.091	2.271	2.408	2.430	2.455	2.474	2.470	2.464	2.463	2.465	2.453	2.433	2.412	2.404	2.371	2.075	1.660
MARKER LAYER (only)	3.829	3.411	3.129	3.101	3.202	2.811	2.115	2.091	2.271	2.408	2.430	2.455	2.474	2.470	2.464	2.463	2.465	2.453	2.433	2.412	2.404	2.371	2.075	1.660
OFFSET	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000

SECTION 5

SURVEYED BY		GENERAL NOTES / REFERENCES	DO NOT SCALE	DISCIPLINE SURV	ZONE RRY	CATEGORY LSC	DESIGN PACKAGE	PLOT DATE 28-11-2023	
INSTRUMENT TYPE		  	DRAWN BY	PARKLANDS OVAL LAYER DEPTHS GC02 \ GC04					
SERIAL NUMBER			COORDINATE SYSTEM MGA94 Z56						
DATE OF SURVEY			HEIGHT DATUM A.H.D						
SIGNATURE			SCALE AT ORIGINAL A3 SIZE 1:	SHEET 5 of 5					REVISION

Plotted: 1005 at 28-Nov-2023 15:34:49



APPENDIX F

SOIL HUMAN HEALTH CRITERIA
(RECREATIONAL/OPEN SPACE)
EXCEEDANCES





Refer to Figure F3 for GC01 soil human health criteria exceedances

Refer to Figure F5 for GC04 soil human health criteria exceedances

Refer to Figure F4 for GC02 soil human health criteria exceedances

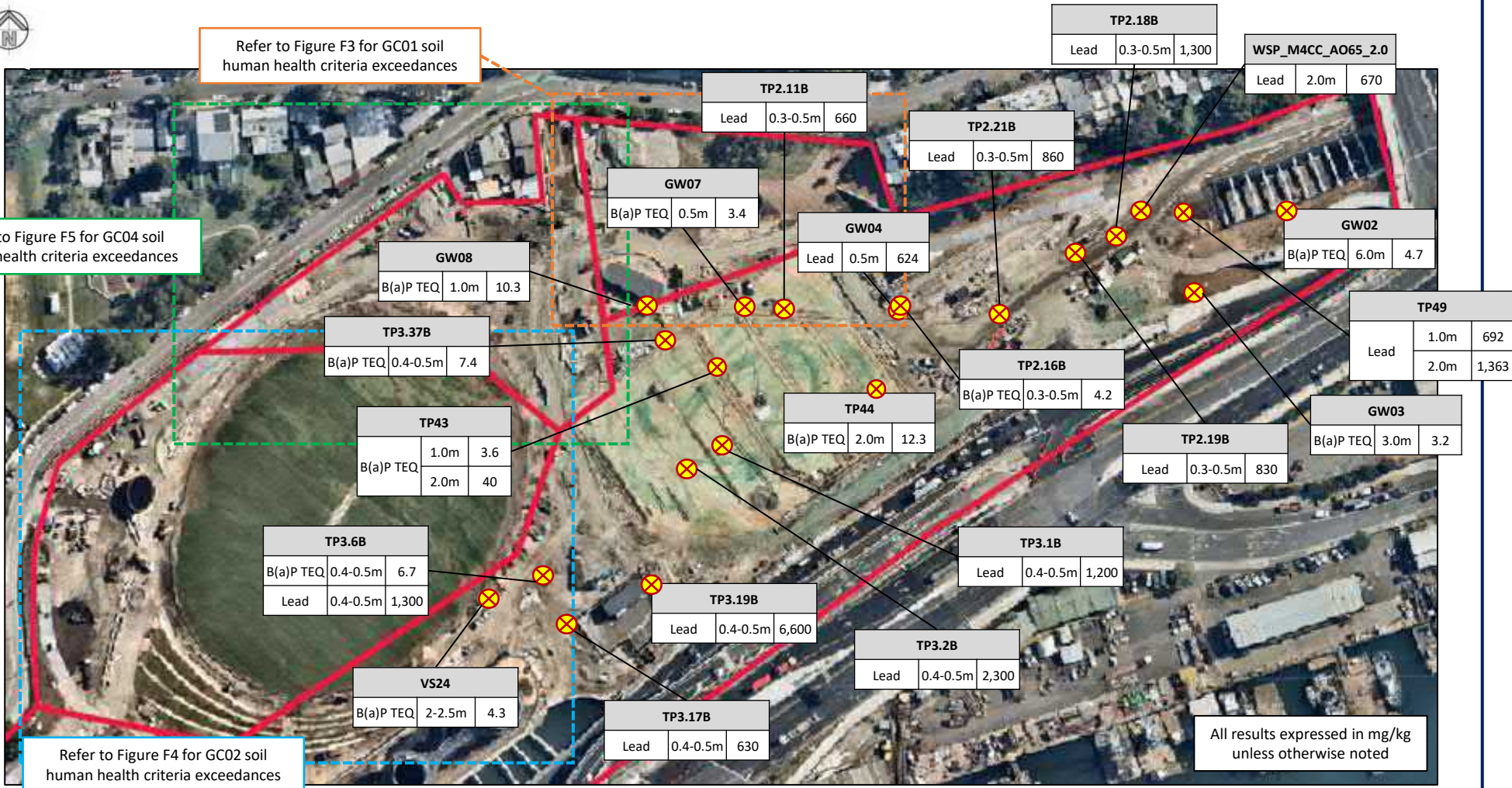


Image source: nearmap (Oct 2023)

Sub-site boundaries X Sampling location

Depths are quoted as mBGL at the time of sampling and may not represent depths from current surface level.

Figure F1 – RY02 (north) soil human health criteria (recreational/open space) exceedances



Image source: nearmap (Oct 2023)

Sub-site boundaries X Sampling location

Depths are quoted as mBGL at the time of sampling and may not represent depths from current surface level.

Figure F2 – RY02 (south) soil human health criteria (recreational/open space) exceedances

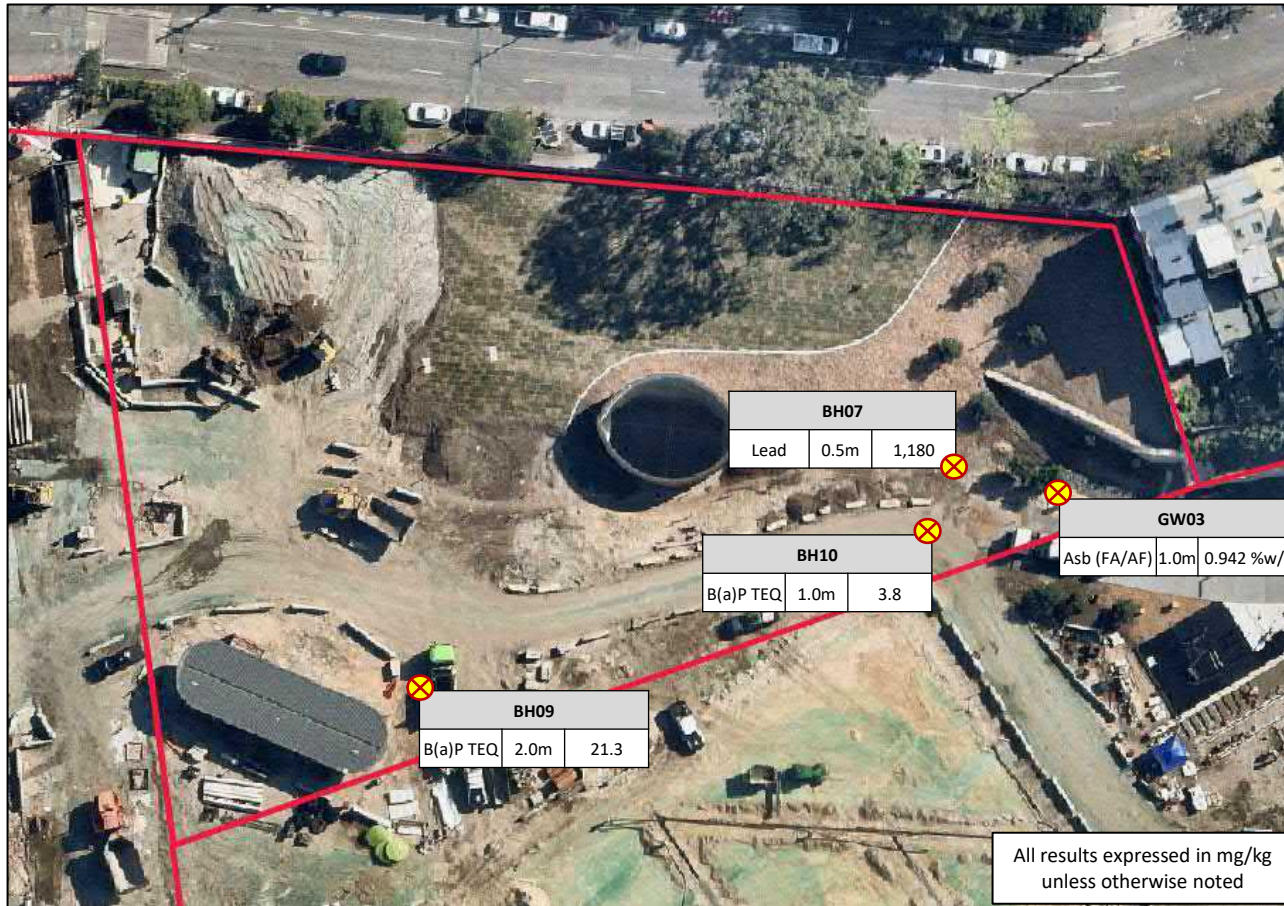


Image source: nearmap (Oct 2023)



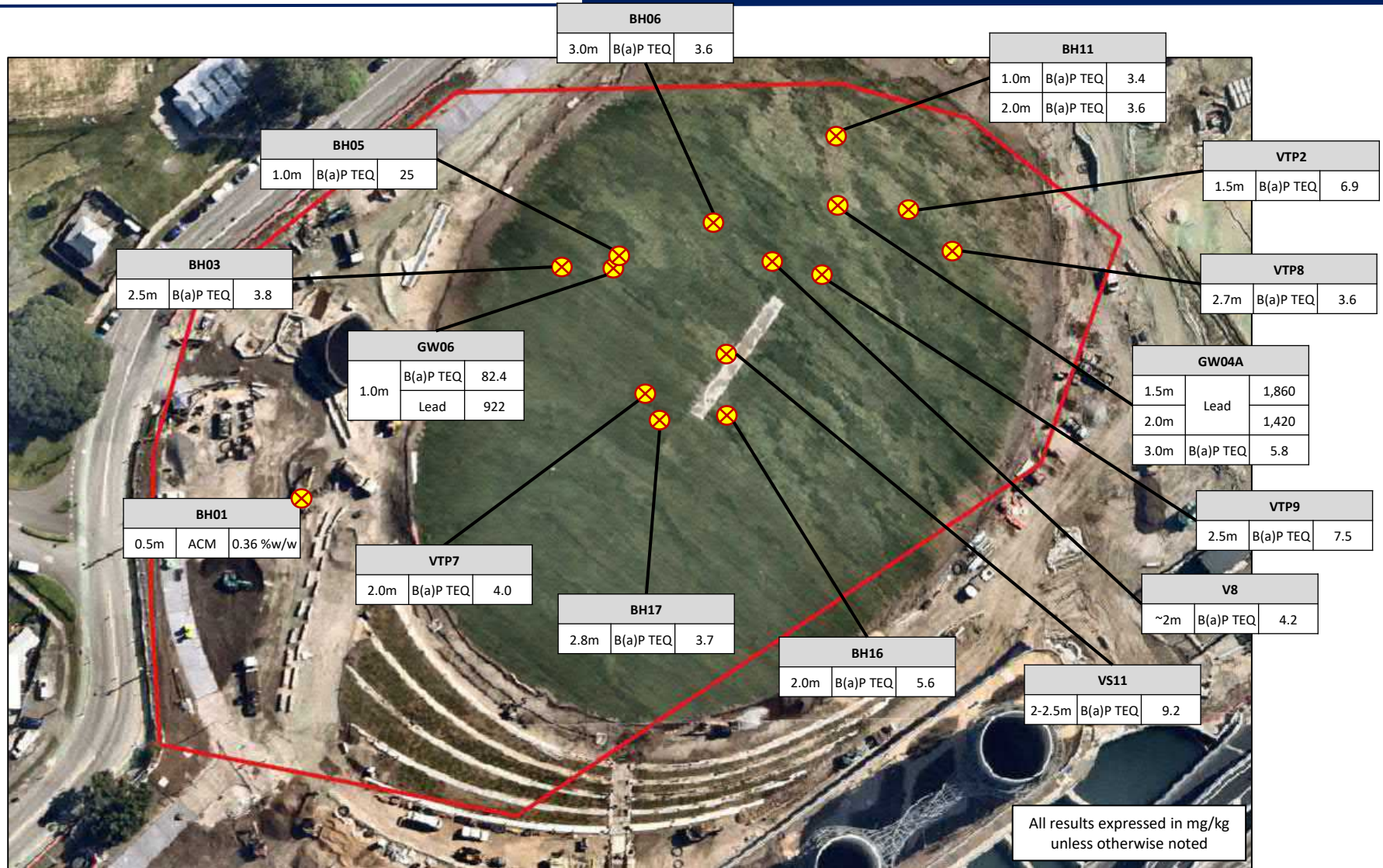
Sub-site boundaries



Sampling location

Depths are quoted as mBGL at the time of sampling and may not represent depths from current surface level.

Figure F3 – GC01 soil human health criteria (recreational/open space) exceedances



All results expressed in mg/kg unless otherwise noted

Image source: nearmap (Oct 2023)

Depths are quoted as mBGL at the time of sampling and may not represent depths from current surface level.



Figure F4 – GC02 soil human health criteria (recreational/open space) exceedances

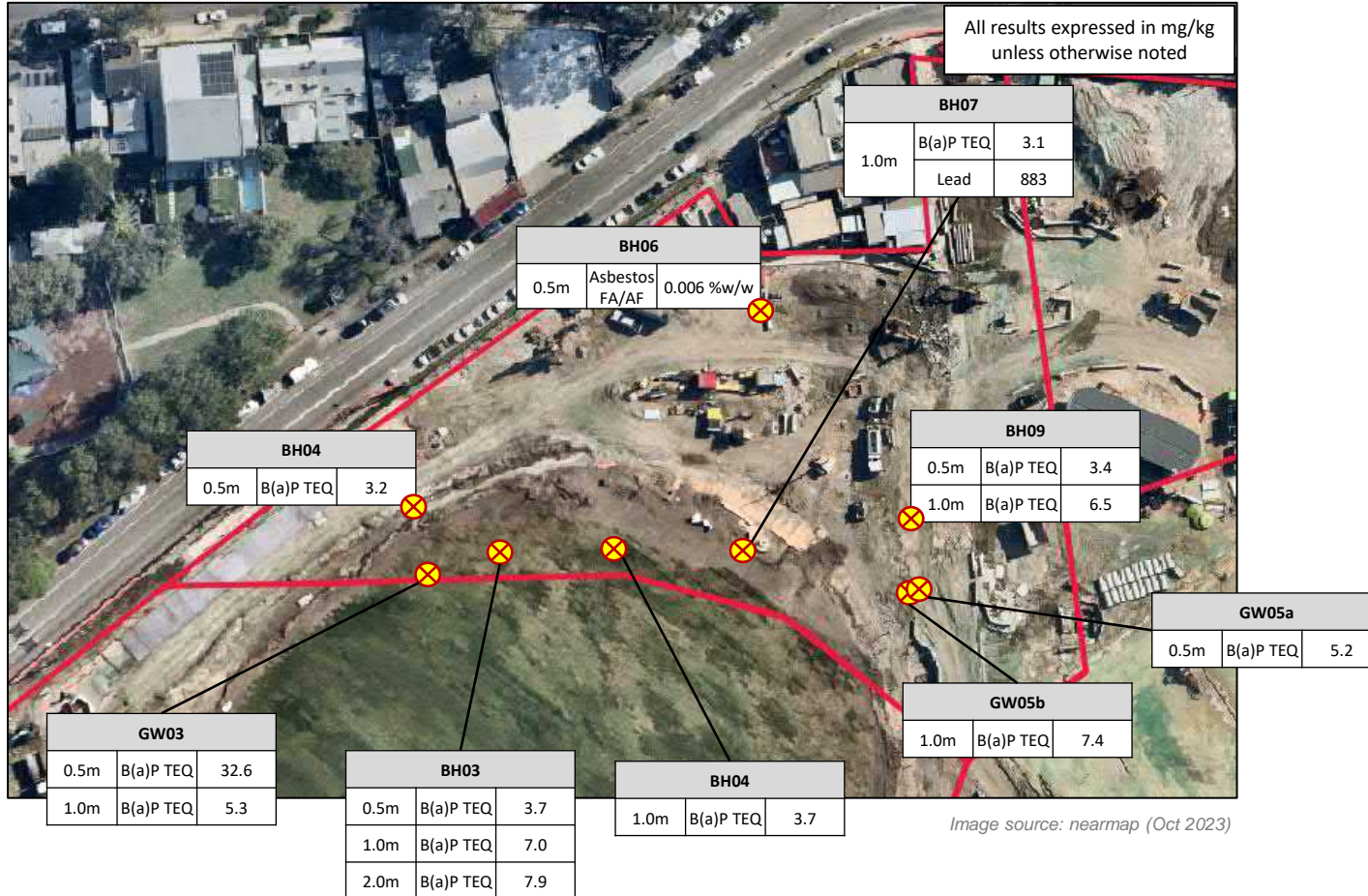


Image source: nearmap (Oct 2023)

Sub-site boundaries ⊗ Sampling location

Depths are quoted as mBGL at the time of sampling and may not represent depths from current surface level.

Figure F5 – GC04 soil human health criteria (recreational/open space) exceedances