

114 Newdegate Street, Greenslopes QLD

Remediation Action Plan

Department of Veteran Affairs



Reference: 754-BNEEN282781

23 August 2023

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Restriction on Disclosure and Use of Data

This report should be read in conjunction with the attached "Important information about your Tetra Tech Coffey Environmental Report"

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
ACM	Asbestos-containing materials
AF	Asbestos fines
ARCP	Asbestos Removal Control Plan
AMP	Asbestos Management Plan
CAF	Construction Ancillary Facility
CLM	Contaminated Land Management
FA	Fibrous asbestos
IL	Investigation Levels
LAA	Licensed asbestos assessor
LARC	Licensed asbestos removal contractor
NATA	National Association of Testing Authorities
PPE	Personal protective equipment
RPE	Respiratory protective equipment

1. INTRODUCTION

The Department of Veteran Affairs (DVA) is planning the redevelopment of 114 Newdegate Street, Greenslopes (Lot 123-125 RP46047) ("the Site") for park/community use and pass the Land Title to Brisbane City Council (BCC). The location of the Site is shown in **Figure 1, Appendix A**.

The Site is listed on the Environmental Management Register (EMR) for Hazardous Contaminants as a result of organochlorine pesticides (OCPs) being previously detected in soil. The Site is not subject to a Site Management Plan (SMP) and the EMR listing does not include a Site Suitability Statement¹. The Site currently contains two disused, large buildings with Asbestos Containing Materials (ACM).

Previous investigations have confirmed the presence of the OCPs Aldrin + Dieldrin which exceed the Schedule B1 *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) Health-based Investigation Levels for recreational areas (HIL-C). OCPs are associated with historical application of termite barriers around buildings. Fragments of ACM and asbestos fines have also been reported in soil which exceed NEPM guidelines for recreational areas.

The Site is owned by the DVA and is therefore located on Commonwealth land. The Commonwealth Department of Agriculture, Water and the Environment (DAWE) is advising DVA, at the Commonwealth level, on their environmental requirements and obligations. DAWE has determined the demolition and removal of the contaminated soil on the site is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and requires further information before making a decision on whether the action can proceed, and any required conditions if approval is granted.

In their Request for Additional Information (RFAI), DAWE has made a recommendation to remove OCPs to the laboratory limits of detect (LOR). DAWE confirmed this requirement in a meeting on the 9 December 2021. In 2023 DAWE confirmed the additional requirement to remove the Site from the EMR as practicable.

The RFAI includes the requirement for a Remediation Action Plan (RAP) and Environmental Management Plan (EMP²) for approval by DAWE. The purpose of the RAP is to describe:

- the remedial objectives
- the remedial actions (remediation plan) required to achieve the remediation objective for the Site
- waste disposal requirement and waste acceptance criteria
- health and safety requirements
- monitoring requirements
- validation
- regulatory approvals.

This document provides the RAP for the remediation of the Site and should be read in-conjunction with Tetra Tech Coffey (2022) *114 Newdegate Street Greenslopes Remediation Planning, Supplementary Investigation* (Supplementary Investigation).

The EMP describes the environmental controls to be implemented during demolition of the buildings on the Site and remediation. A Draft Construction EMP for these activities is provided in Enviropacific Services (2022) *Construction Environmental Management Plan, Department of Veterans' Affairs (DVA) – ACM*

¹ A Site Suitability Statement is a statement prepared by a Suitably Qualified Person (SQP) which describes the permitted uses of the land, and whether there is a requirement for a SMP. The Site Suitability Statement can also include a statement that the site is 'suitable for any use' (i.e. can be removed from the EMR).

² The EMP has been prepared by Enviropacific Services in the following document: *Construction Environmental Management Plan, Department of Veterans' Affairs (DVA) – ACM Removal, Demolition, Site Stripping and Soil Remediation Works; Newdegate and Headfort Streets, Greenslopes, QLD, 4120, 2022*.

*Removal, Demolition, Site Stripping and Soil Remediation Works; Newdegate and Headfort Streets,
Greenslopes, QLD, 4120.*

1.1 ROLES AND RESPONSIBILITIES

The roles, personnel and responsibilities are provided in Table 1-1.

Table 1-1 Roles, Personnel and Responsibilities

Role	Organisation	Responsible Persons	Responsibilities
Client	Department of Veteran Affairs	Dave Binney	<ul style="list-style-type: none"> Engagement of Principal Contractor, SQP and Site Auditor. Compliance with statutory requirements.
Principal Contractor / Remediation Contractor	Enviropacific Services	Mick Merriman	<ul style="list-style-type: none"> Implementation of RAP and EMP Employ a Competent Person who will be responsible for undertaking full-time supervision of the remediation work. The Competent Person must be experienced in the undertaking remediation works and have the necessary experience to: <ul style="list-style-type: none"> visually identify soil materials containing suspect/potential ACM visually identify soil materials which contain anthropogenic materials which pose physical hazards (i.e. sharp and angular) that are unsuitable for use in a park/open space visually identify unforeseen contamination implement the RAP and EMP including but not limited to the required controls to manage potential risks to human health and the environment.
Suitably Qualified Person	Tetra Tech Coffey	Jeremy Wicks	<ul style="list-style-type: none"> Provide technical support to the Principal Contractor/Remediation Contractor in regard to contaminated land investigation and management Preparation of Disposal Permits for submission to DES by the Principal Contractor/Remediation Contractor Complete site inspections during remediation to check compliance against the RAP and EMP Undertake environmental monitoring during remediation Collect validation samples Prepare the Contaminated Land Investigation Document (CLID) and draft Site Management Plan (SMP) at the completion of remediation or Validation Report if the site is to be removed from the EMR.
Licensed Asbestos Assessor (LAA)	Tetra Tech Coffey	Laura Smith	<ul style="list-style-type: none"> Review of contractor Safe Work Method Statement (SWMS) relating to asbestos aspects of the project and their Asbestos Removal Control Plan (ARCP) Asbestos and lead control air monitoring

Role	Organisation	Responsible Persons	Responsibilities
			<ul style="list-style-type: none"> • Clearance inspections (and clearance air monitoring where required) following the completion of demolition and remediation works • Issue of an asbestos Clearance Report following the completion of demolition and remediation works
DES-Approved Contaminated Land Auditor	Epic Environmental	Louise Cartwright	<ul style="list-style-type: none"> • Undertake role of DES approved contaminated land auditor (CLA) and conduct auditing services in accordance with provisions of Chapter 12, Part 3A of the Environmental Protection (EP) Act 1994
Waste Facility	Remondis – Ti Tree Bioenergy	Edward Hartigan	<ul style="list-style-type: none"> • Acceptance of contaminated soil to monocell disposal cell, as per DES soil disposal permit
	BMI	Peta Rutherford	<ul style="list-style-type: none"> • Stapylton: Acceptance of contaminated soil to lined disposal cell, as per soil disposal permit • Acacia Ridge: Acceptance of concrete for recycling • Redbank: Acceptance of soil for reuse
Waste Transporter	Not determined	-	<ul style="list-style-type: none"> • Transport material from site to waste facility, under soil disposal permit conditions, where applicable

2. OBJECTIVES OF RAP

The objectives of this RAP are to:

- Set the remediation objectives and outline a strategy that will mitigate contamination risks associated with the identified soil contamination to:
 - remove the site's listing from the EMR, negating the requirement for a Site Management Plan (SMP)
 - make the site suitable for all/any use
 - facilitate the transfer of land title to BCC.
- Provide procedures and plans for implementation during proposed remedial works
- Outline minimum environmental safeguards to complete the proposed remedial works at the site in a manner that minimises negative impacts upon the health of site workers and surrounding receptors, safety and the environment.

3. TECHNICAL AND REGULATORY FRAMEWORK

This RAP has been developed in general accordance with the following legislation, industry standards, codes of practice, and guidance documents, where relevant:

Commonwealth

- *Environmental Protection and Biodiversity Conservation Act 1999*
- Environmental Protection and Biodiversity Conservation Regulations 2000
- National Environment Protection Council (NEPC) Act 1994 (NEPC Act 1994).

Queensland

- *Environmental Protection Act 1994*
- Environmental Protection (Air) Policy 2019
- Environmental Protection (Noise) Policy 2019
- Environmental Protection (Water and Wetland Biodiversity) Policy 2019
- Environmental Protection Regulation 2019
- *Waste Reduction and Recycling Act 2011*
- Waste Reduction and Recycling Regulation 2011

Guidelines

- National Environment Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure, 1999 (amended April 2013) (ASC NEPM 2013)*.
- Queensland Department of Environment and Science (DES, 2019) *Queensland Auditor Handbook for Contaminated Land Module 6: Content requirements for contaminated land investigation documents, certifications and audit reports. Version 2.01*
- Western Australian Department of Health, *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, 2021 (WA DOH 2021)*.

Redevelopment of the Site is a Controlled Action under the Commonwealth EPBC Act 1994, and requires the removal of the property from the EMR and the removal of soil with OCPs to the laboratory limits of detect (LOR) as practicable.

Removal of the Site from the EMR is subject to the requirements of the Queensland EP Act 1994 and subordinate legislation. Removal of the Site from the EMR will require a Validation Report including a Site Suitability Statement, and Site Auditor Certification.

4. SITE DESCRIPTION

4.1 SITE IDENTIFICATION

The Site is located on the corner of Newdegate Street and Headfort Street, Greenslopes, Brisbane. The Site is shown in **Figure 2, Appendix A**.

Two buildings are located on the Site and comprise a former Main Hall Building and Accommodation Building (see **Figure 2**). The Site is currently not in use due to the condition of the buildings and the presence of ACM.

Site identification details are summarised in Table 4.1. The location of the site is shown on Figure 1.

Table 4.1: Site Identification Details

Item	Detail		
Site Address	114 Newdegate Street, Greenslopes QLD		
Lot/Plan Number	Lot 123 on RP46047	Lot 124 on RP46047	Lot 125 on RP46047
Address	53 Headfort Street, Greenslopes, QLD, 4120	53 Headfort Street, Greenslopes, QLD, 4120	53 Headfort Street, Greenslopes, QLD, 4120
Geographic coordinates	Lat: -27.51339 Long: 153.04843	Lat: -27.51336 Long: 153.04825	Lat: -27.51334 Long: 153.04810
Area (m ²)	647	647	639
Historical use	Veterans accommodation	Veterans accommodation	Veterans accommodation
Current use	Vacant land	Vacant land	Vacant land
Future use	Unknown	Unknown	Unknown
EMR Listing	Yes. Site has been subject to a hazardous contaminant (organochlorine pesticides)	Yes. Site has been subject to a hazardous contaminant (organochlorine pesticides)	Yes. Site has been subject to a hazardous contaminant (organochlorine pesticides)
EMR Site ID	148512	148513	148514
CLR listing	No	No	No
Current Zoning	NC Neighbourhood Centre ³		
Future zoning	Unknown		
Local Council	Brisbane City Council		
Total Site Area	1,933 m ²		
Site Owner	Department of Veterans Affairs.		
Land Use	The property currently consists of disused main hall and accommodation building. The site is currently vacant.		
Surrounding Land Uses	North – Residential houses and small cafeteria East – Residential houses South – Residential houses West – Health care (Greenslopes Private Hospital)		

³ Brisbane City Plan 2014. Neighbourhood centre is a small mix of land uses to service residential neighbourhoods. It includes small-scale convenience shopping, professional offices, community services and other uses that directly support the immediate community.

4.2 ENVIRONMENTAL SETTING

Table 4.2 provides a summary of the environmental setting of the site as discussed in previous reports (refer to Section 7).

Table 4.2: Summary of Environmental Setting

Item	Description
Topography & Drainage	The Site is located at an elevation of approximately 25 m AHD. Topography in the vicinity of the Site falls in an approximate north west direction towards the Norman Creek (drain ⁴) in Ekibin Park East located 840 m north west of the Site.
Hydrogeology	<p>Based on the regional geology and the Site being located in an elevated area off Stephens Mountain, groundwater is expected to occur in the Neranleigh-Fernvale beds at a depth greater than 30 m below ground surface (bgs).</p> <p>In the Supplementary Investigation groundwater was not intersected during the drilling of MW01⁵ which was extended to 6 m bgs. No groundwater was encountered in the monitoring well when it was gauged approximately one week later on the 24 November 2021.</p> <p>Extraction of use of groundwater in the vicinity of the Site is considered unlikely based on the supply of reticulated potable water in Brisbane.</p>
Regional Geology	<p>Regional geology of the Site and surrounding land is the Neranleigh-Fernvale beds (DCf). This geological formation is described as feldspathic and lithic meta-arenite, metasilstone and conglomerate proximal turbidites, with structurally intercalated or stratigraphically underlying chert, jasper and basic meta-volcanics⁶.</p> <p>The topography of the surrounding area is dominated by Stephen Mountain⁷ which has a height of 55 m AHD and is located west of the Greenslopes Hospital and approximately 400 m west of the Site.</p>
Local Geology	<p>Site investigations have identified the subsurface geology typically comprised reworked firm, dry, red brown, low plasticity silty clay fill interspersed with bedding sands and gravels in the upper profile. Fill material containing ash and slag-type materials in soil were recovered from the east and west of the site. Fill was identified to a maximum depth of 0.6 m.</p> <p>Underlying the fill material was the apparent natural soils typically comprised firm, dry, red/brown, low plasticity silty clays transitioning to slightly moist medium plasticity orange/brown silty clays with occasional bands of sub rounded gravels. Mudstone was encountered at 0.65m and at 2.4 m bgs in the north western portion of the site.</p>
Acid Sulfate Soils Risk and Classification	The Australian Soil Resource Information System (ASRIS) defines the area to be an <i>Extremely Low Probability / Low Risk</i>
Groundwater Bore Search	The nearest registered groundwater bore (RN 133887) is located approximately 900 m west of the Site, and was installed in the Neranleigh-Fernvale beds. The bore report for this registered bore has been abandoned/destroyed and describes groundwater as being located at approximately 51 m depth (approximately -10 m AHD ⁸) and 'salty'.

4.3 SITE HISTORY SUMMARY

Historical aerial photography shows the Site was cleared land in 1936, and potentially in use for rural purposes (see image below). The site was acquired by the Commonwealth of Australia in 1945 for the

⁴ Note Norman Creek is a concrete lined drain in Ekibin Park East

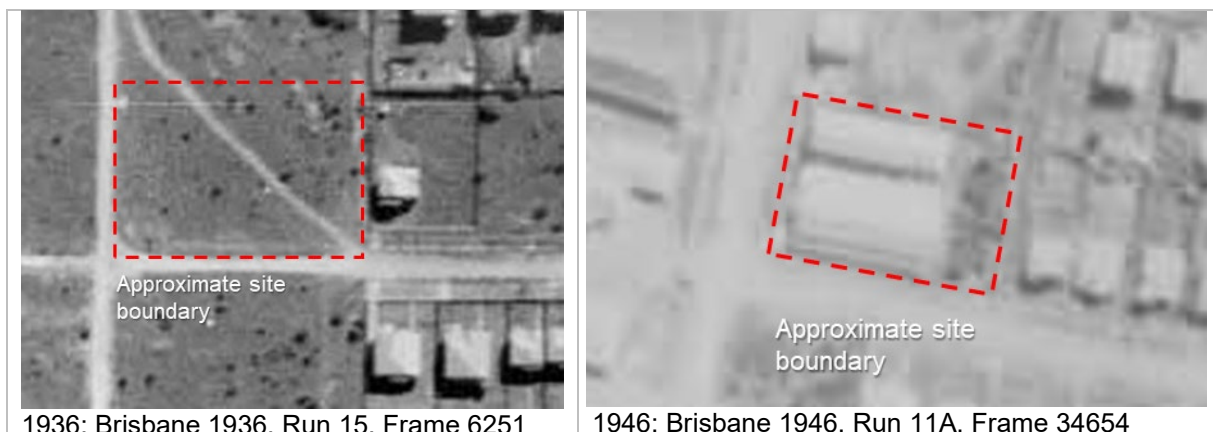
⁵ MW01 was installed in September 2021

⁶ <https://asud.ga.gov.au/search-stratigraphic-units/results/14021>, accessed 1 September 2021

⁷ Stephens Mountain has an elevation of 55 m AHD and is located west of Greenslopes Private Hospital and is approximately 400 m from the Site (<https://qtopo.information.qld.gov.au/>, accessed 1 September 2021)

⁸ RN 133887 is located at approximately 40 m AHD

development of the Australian Red Cross Centre (ARCC). The ARCC was developed on the Site in approximately 1945 and is shown in historical aerial imagery from 1946 (see image below).



The ARCC was built to provide recreational services to military personnel who were patients at the 112th Australian Military Hospital. Post World War II, the ARCC was used for a similar purpose for service personnel and veterans. The buildings on the Site were later used for community purposes and to provide temporary accommodation for the families of patients at the Greenslopes Repatriation Hospital⁹. The former ARCC buildings remain on the Site to the present day. It is not known whether historically there were smaller structures located on the Site which have subsequently been demolished and the source of any fill material used on the Site.

5. PREVIOUS INVESTIGATIONS

Previous investigations of the Site were completed on the Site in 2013, 2019 and 2021. The investigations were undertaken following guidance provided within the ASC NEPM and involved undertaking phased investigations to assess the presence and then potential extent of contamination at the Site.

Coffey, 2013a. Department of Veteran Affairs Phase 1 Contaminated Land Assessment, 114 Newdegate Street, Greenslopes Queensland

This investigation included the completion of Phase 1 investigation based on the requirements of the ASC NEPM and comprised a desk study, site walkover and preliminary soil sampling.

Coffey, 2013b. Department of Veteran Affairs Phase 2 Contaminated Land Assessment, 114 Newdegate Street, Greenslopes Queensland

This investigation comprised the completion of a Phase 2 investigation to further define the extent of contamination on the Site.

Coffey, 2019. Department of Veteran Affairs Delineation of Organochlorine Soil Impacts, 114 Newdegate Street, Greenslopes Queensland

This investigation comprised the completion of a further define the extent of contamination on the Site, and whether there had been changes in the concentration of contaminants present on the Site in comparison to 2013.

Tetra Tech Coffey, 2022. 114 Newdegate Street Greenslopes Remediation Planning, Supplementary Investigation (Supplementary Investigation).

⁹ <https://heritage.brisbane.qld.gov.au/heritage-places/806>, accessed 16 July 2021.

This investigation comprised the completion of supplementary investigation to address data gaps required for remediation planning. The investigation was undertaken in accordance with Coffey (2020) *114 Newdegate Street Greenslopes Remediation Planning, Sampling, Analysis and Quality Plan, 19 July 2021*. The report on the Supplementary Investigation included data from the previous investigations.

Previous investigation sampling locations are shown in **Appendix A**, and the analytical data summarised in **Appendix B**.

The following is a summary of the findings of the Supplementary Investigation. For further information refer to the report on the Supplementary Investigation.

5.1 GROUND CONDITIONS

In open areas surface geology typically comprised sparse grass coverage with very thin (<10 mm) silty sand topsoil across the open areas of the investigation area (surrounding the Accommodation and Main Hall buildings) and concrete paved driveways in between and to the east of the Accommodation and Main Hall.

The subsurface geology in open areas typically comprised reworked firm, dry, red-brown, low plasticity silty clay fill interspersed with bedding sands and gravels in the upper profile. Fill material containing ash and slag-type materials in soil were recovered from the east and west of the Site. Intrusive locations where anthropogenic materials were encountered are shown in **Figure 3, Appendix A**.

Fill depths in the west ranged from 0.2m bgs (BH19) in the north western corner, 0.6m bgs (BH17) in the south western corner, 0.3m bgs (BH06) in the south eastern corner and 0.45m bgs (BH20) in the north western corner. In between the Accommodation and Main Hall buildings, the depth of fill material ranged from 0.15m (BH21) to 0.38m bgs (BH14).

Fill material was not encountered beneath the slab of the Main Hall Building.

Underlying the fill material was the apparent natural soils typically comprised firm, dry, red/brown, low plasticity silty clays transitioning to slightly moist medium plasticity orange/brown silty clays with occasional bands of sub rounded gravels.

5.2 CONTAMINATION

The maximum concentration of OCPs and metals which have been reported in previous investigations of the Site are summarised in the following table.

Table 5-1 Maximum Reported Concentrations

Analyte (mg/kg)	EIL – Res/Open Space (mg/kg)	HIL-A Residential Criteria (mg/kg)	HIL-C Recreational Criteria (mg/kg)	Soil Materials Surface to 0.2 mbgs (mg/kg)	Soil Materials Deeper than 0.2 mbgs (mg/kg)	No. Samples Exceeding HIL-A Surface to 0.2 m bgs / deeper than 0.2 m bgs	No. Samples Exceeding HIL-C Surface to 0.2 m bgs / deeper than 0.2 m bgs
OCPs						-	-
4,4-DDE				2.2	0.22	-	-
a-BHC				<0.1	<0.05	-	-
Aldrin				98	0.98	-	-
Aldrin + Dieldrin		6	10	506	14	18 / 2	15 / 1
b-BHC				<0.1	<0.05	-	-
chlordane		50	70	140	0.5	2 / 0	1 / 0
d-BHC				<0.1	<0.05	-	-
DDD				2.1	0.15	-	-
DDT	180			23	<0.2	-	-
DDT+DDE+DDD		240	400	26.5	0.37	-	-
Dieldrin				420	14	-	-
Endrin aldehyde				0.24	<0.05	-	-
Endrin ketone				8.5	0.05	-	-

Analyte (mg/kg)	EIL – Res/Open Space (mg/kg)	HIL-A Residential Criteria (mg/kg)	HIL-C Recreational Criteria (mg/kg)	Soil Materials Surface to 0.2 mbgs (mg/kg)	Soil Materials Deeper than 0.2 mbgs (mg/kg)	No. Samples Exceeding HIL-A Surface to 0.2 m bgs / deeper than 0.2 m bgs	No. Samples Exceeding HIL-C Surface to 0.2 m bgs / deeper than 0.2 m bgs
Endosulfan I		270	340	0.26	<0.05	-	-
Endosulfan II				<0.05	<0.05	-	-
Endosulfan sulphate				<0.1	<0.05	-	-
Endrin		10	20	6.5	0.1	-	-
g-BHC (Lindane)				<0.1	<0.05	-	-
Heptachlor		6	10	1	<0.05	-	-
Heptachlor epoxide				3.4	0.26	-	-
Hexachlorobenzene		10	10	<0.1	<0.05	-	-
Methoxychlor		300	400	<0.2	<0.2	-	-
Toxaphene		20	30	<1	<1	-	-
Total OCP				527.38	14.52	-	-
Metals						-	-
Arsenic	100	100	300	32	23	-	-
Cadmium		20	90	1.4	<1	-	-
Chromium (III+VI)	245	100	300	100	180	Note 2	-
Copper	196	6000	17000	33	74	-	-
Lead	1112	300	600	160	120	-	-
Mercury		10	13	0.1	<0.1	-	-
Nickel	287	400	1200	66	84	-	-
Zinc (Note 1)	420	7400	30000	2000	160	-	-

Note 1: Zinc exceeded the EIL in three samples SS01, SS02 and HA11. There were no zinc exceedences of HIL-A and HIL-C.

Note 2: Refer to 'Note on Chromium' included in this section. The supplementary investigation concluded that Chromium is present as a Chromium III rather than Chromium IV and therefore the HILs in the NEPM (which are for Chromium IV) do not apply.

Sample locations with exceedences of HIL-A and HIL-C criteria are summarised in the following table.

Table 5-2 Samples Locations Exceeding HIL-A and HIL-C Criteria

Sample Depth	Analyte	Exceeded HIL-A	Exceeded HIL-C
Upper soil (0.0-0.2m)	Aldrin + dieldrin	HA07/SA12	HA07/SA12
		HA09	HA09
		HA10	HA10
		8-0.0	8-0.0
		9-0.0	9-0.0
		9P-0.0 (HA09)	9P-0.0 (HA09)
		10-0.0	10-0.0
		11-0.0	11-0.0
		13P-0.0 (HA07)	13P-0.2 (HA07)
		13P-0.2 (HA07)	14P-0.0 (HA10)
		14P-0.0 (HA10)	QC07 (DUP 14P-0.0)
		QC07 (DUP 14P-0.0)	QC08 (TRIP 14P-0.0)
		QC08 (TRIP 14P-0.0)	34-0.0
		15-0.0	36-0.0
		34-0.0	BH21_0.1
		36-0.0	
		BH14_0.1	
		BH21_0.1	
Deeper soil	Chlordane	HA02, HA03,	HA03
	Chromium (III + VI)	Note 2	Note 2
	Aldrin + dieldrin	10-0.45, 11-0.45	11-0.45,

Sample Depth	Analyte	Exceeded HIL-A	Exceeded HIL-C
(>0.2m)	Chlordane	Nil	Nil
	Chromium (III + VI)	Note 2	Note 2

Notes:

- 1) Sample location with a concentration at the health guideline level.
- 2) Refer to 'Note on Chromium' in this section in regard to chromium.

It is noted that samples exceeding HIL-C also exceed HIL-A.

Soil material with OCPs which exceed human health-based guidelines for park/community use (NEPM HIL-C) are predominately located in the upper soil deposits between the Accommodation Building and Main Hall Building, and in a small area south of the Main Hall Building and along the western perimeter of the Accommodation Building.

Soil material with OCPs which exceed human-health based guidelines for residential use with accessible gardens (NEPM HIL-A¹⁰) are more widely distributed and generally include upper soil materials north of the Main Hall Building and an area south of the Main Hall Building.

Elevated concentrations of OCPs are generally limited to soil materials less than 0.2 m below ground surface (bgs). The occurrence of elevated concentrations of OCPs in shallow soil materials is consistent the application of termiticides into the shallow soil materials and the chemical properties of OCPs detected which readily absorb to soils (particularly soils with high organic matter) and have low solubility (and therefore low leachability).

OCPs were not reported above the limit of reporting (LOR) in soil samples from the following areas:

- the concrete slab along the driveway along the eastern boundary of the Site (BH06 to BH08)
- the south eastern corner (BH16).
- the western boundary of the Site (BH17 to BH19).

Fragments of Asbestos Containing Materials (ACM) and asbestos fines which exceed the nominated investigation levels (ILs) of 0.01% w/w and 0.001% w/w, respectively, have been reported in previous investigations of the Site at the following locations (refer to **Figure 3, Appendix A**):

- SS01
- SS02
- SA01/A01
- Main Hall (under building)
- Accommodation Building (under building)
- Unsealed External Areas
- A04, A06, A10 (15)

Fragments of ACM were not observed in the 2021 investigation and asbestos was not reported in soil samples analysed in 2021. As a precautionary measure the upper soil deposits should be considered to contain ACM and there would also be the potential for fragments of ACM to be displaced into the upper soil deposits during demolition of the existing buildings.

Soil materials in the upper ground deposits (~ <0.25 m bgs) are considered to pose an unacceptable risk to human health where OCPs are present which exceed the NEPM HIL-C and due to the potential for ACM. OCPs also pose a potential unacceptable risk to ecological receptors based on the adopted guidelines.

¹⁰ Compliance with NEPM HIL-A guidelines will be required if the Site is to be removed from the EMR.

Soil samples from previous investigations reported concentrations of metals which were below the NEPM HIL-C health guidelines.

Previous investigations of the Site did not report the detection of other potential contaminants of concern (PCOC) including:

- organophosphate pesticides (OPPs)
- poly aromatic hydrocarbons (PAH) including soil materials containing a slag type material
- benzene, toluene, ethyl benzene and xylenes (BTEX)

Sample location SS04 in Coffey (2013) reported TRH in the C16-C34 fraction with concentration which was below the adopted HIL-A, HIL-C and EILs. No visual or olfactory signs of contamination were observed at this sampling location (and elsewhere on the site) however organic matter was present.

The TRH previously reported is potentially a false positive, relating to organic matter within the shallow soil profile for the following reasons:

- no visual or olfactory signs of hydrocarbon contamination were observed at this sampling location
- the site history has not identified storage/use of hydrocarbons
- other potential organic contaminants (BTEX and PAH) were not reported in the sample analysed (or other samples analysed)
- the sample was collected from a depth and location where organic matter would be present.

Fill containing anthropogenic materials which pose physical hazards (sharp and angular) have been observed on the site and are considered to be unsuitable for use in a park/open space and should also be removed from the Site where there is a likelihood that future users of the Site may come into contact with these materials. Conceptually this is considered to be to approximately 0.5 m depth based on the assumption that the maximum depth community members would dig to would be 0.4 m if undertaking double digging for a garden bed.

HIL-D criteria for dieldrin was exceeded in four sampling locations (HA10, 9, BH21, HA09) are shown in Figure 3, Appendix A. HIL-D criteria is used as an acceptance criteria by the BMI Group at its Redbank Resource Recovery Facility (refer to Section 7.4).

With the exception of chromium, all samples from soil material deeper than 0.2 m bgs reported metals with concentrations which were below the NEPM HIL-A and HIL-C guidelines, and the EILs.

Note on Chromium

Chromium was below the NEPM-HIL C and EILs, and exceeded the NEPM HIL-A in the following samples: BH06_0.5, BH07_0.3, BH08_0.3, BH16_0.5, BH21_0.3, and BH21_0.5. All of these samples are from natural materials, and at these locations the concentration of chromium was found to increase with depth.

The NEPM HIL-A guideline is based on Chromium VI which is commonly used as a solvent within industrial processes. It is noted that the more toxic Chromium VI readily reduces to the less toxic Chromium III. As no source of chromium has been identified in fill materials and there is no previous industrial use of the Site, the source of chromium in these samples is considered to be natural and Chromium III. Analysis of Chromium (Total) and Chromium VI was undertaken from soil samples collected from MW01 at 0.25, 0.5, 0.75 and 1 m bgl. Concentrations of Chromium (Total) increased with depth however no positive detection of Chromium VI was reported. This finding supports the assumption that chromium reported in soil samples is Chromium III.

Chromium III is an essential nutrient and does not have a guideline value in the NEPM. The US EPA regional screening level (THQ 0.1)¹¹ for Chromium III is 12,000 mg/kg. All soil samples had concentrations of chromium below this guideline.

5.3 GROUNDWATER

A groundwater monitoring well was installed in the north western corner of the Site to 6 m bgs. Groundwater was not intersected and is likely to be at a depth greater than 30 m bgs. Risk to groundwater receptors is considered to be low based on no shallow water bearing zone being found on the Site and the low leachability of the OCPs present.

¹¹ <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>, accessed 2 December 2021

6. CONCEPTUAL SITE MODEL

Historical termiticides applied to Site and asbestos containing materials (ACM) (most likely from buildings on the Site) are considered to be the **primary sources** of contamination on the Site.

Contamination present in soil and other environmental media as a result of the primary source is considered as a **secondary source of contamination**. Contaminant of concern associated with the application of termiticides on the Site include OCPs (mainly aldrin and dieldrin), and asbestos. Other OCPs present in soil included DDT+DDE+DDD, endosulfan I, endrin, heptachlor, endrin aldehyde and endrin ketone.

Once in soil, contamination has the potential to be distributed through **transportation pathways** such as erosion and deposition (wind and water) and the leaching of contaminants to groundwater and surface water, and anthropogenic activities which involve the movement of soil materials such as site redevelopment. Transportation pathways can also be considered as secondary sources of contamination (e.g. contamination in groundwater).

Based on the Supplementary Investigation, the transportation pathways considered to be relevant to the Site include erosion and deposition (wind and water), and anthropogenic activities which involve the movement of soil materials such as site redevelopment.

The leaching of contaminants to groundwater and surface water is considered to be low risk based on the OCP contaminants present which strongly absorb to soil and have low solubility/leachability. No shallow groundwater water bearing zone has been identified within 6 m of the ground surface.

Receptors could potentially be exposed to contaminants derived from the disturbance of contaminants present in within soil.

Potential receptors considered applicable redevelopment of the Site include:

- workers involved with the site redevelopment work
- persons involved with the cleaning clothing, vehicles and equipment used in redevelopment
- general public including persons who could be subject to contaminated media generated during redevelopment (e.g. dust)
- ecological receptors including native and domestic terrestrial flora and fauna
- surface water receptors.

Post redevelopment potential receptors which may be exposed to contaminants in soil include:

- general public accessing the park and community facilities
- persons involved with maintenance of the park and community facilities
- persons who work at the community facilities
- persons who could be subject to contaminated media generated from the Site (e.g. dust)
- ecological receptors including terrestrial and aquatic flora and fauna (including native and domestic terrestrial fauna).
- surface water receptors.

Exposure pathways for human receptors include dermal contact, ingestion, inhalation (dust and fibres) and plant uptake mechanisms. For a community park setting the consumption of home grown produce may potentially occur, and therefore the consumption of produce, and ingestion of soil adhered to produce should also be considered.

Exposure pathways for ecological receptors include direct contact and ingestion for invertebrates. Exposure pathways for vertebrates (mammals/birds) include bioaccumulate OCPs through the consumption of organisms and/or direct contact with the soil.

7. REMEDIATION GOALS

7.1 REMEDIATION STRATEGY

The Commonwealth Department of Agriculture, Water and the Environment (DAWE) has determined the demolition and removal of the contaminated soil on the site as a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and requires further information before making a decision on whether the action can proceed, and any required conditions if approval is granted. In their Request for Additional Information (RFI), DAWE has made a recommendation to remove OCPs to the laboratory limits of detect (LOR). DAWE confirmed this requirement in a meeting on the 9 December 2021. This requirement has been incorporated into the remediation strategy. In 2023 DAWE confirmed the preference to remove the property from the EMR.

The remediation strategy for the Site has been developed based on DAWE requirement to remove OCP contaminated soil to the LOR (as practicable), remove the property from the EMR and to make it suitable for park and community use. This includes the removal of soils which are unsuitable for park use based on the presence of physical hazards.

Soils removed from the Site are to be disposed to a licenced landfill or beneficially reused at a resource recovery facility (refer to Section 8). Other potential remediation options such as containment (e.g. capping) were not considered based on the requirement from DAWE to remove the contaminated soil from the Site and the property from the EMR. Alternatives to disposal to a licenced landfill such as thermal destruction are considered cost prohibitive and were not considered further.

Soils removed from the Site will need to be replaced with fill imported from a certified clean source (e.g. quarry, commercially available topsoil).

During the remediation of the property if it becomes apparent that it is not practicable to remove the property from the EMR, a decision will be made in-conjunction with DVA and the Site Auditor on whether the property can remain on the EMR with a Site Management Plan (SMP).

7.2 REMEDIATION OBJECTIVE

The primary objectives for the remediation of the Site are to make it suitable for park and community use, and to remove the OCP contaminated soil from the Site as practicable such that the property can be removed from the EMR.

7.3 REMEDIATION CRITERIA

For OCPs the proposed remediation criteria is a concentration not above (i.e. non-detectable) the standard LOR from the NATA accredited laboratory Eurofins or ALS. For Eurofins these range from 0.05 mg/kg to 0.1 mg/kg. If it is not practicable to achieve non-detectable concentration(s) for OCPs, the remediation criteria for OCPs will be the NEPM residential land use (HIL-A) such that the property can be removed from the EMR.

For all other potential contaminants, the proposed remediation criteria for the Site are the NEPM HIL-A. Compliance with the NEPM HIL-A guidelines will be required if the Site is to be removed from the EMR.

In the unlikely event that OCP contaminated soil cannot be removed to extent to allow removal of the Site from the EMR, the remediation objective will be to 'remediate the site to make it suitable for parkland use (i.e.

meet adopted NEPM HIL-C guidelines). This may mean the Site remains on the EMR with a Site Management Plan (SMP) to ensure it is suitable for parkland use.

Note on ecological receptors

Following implementation of the proposed remediation strategy it is considered that there would be no plausible exposure pathway for ecological receptors on the basis that the majority of the contaminant source would have been removed from the Site.

Note on groundwater and surface water receptors

OCPs have low solubility/leachability and therefore low risk of leaching into surface water and groundwater is low and not of concern.

Post remediation the risk to surface water and groundwater receptors is considered to be low based on the removal of the contaminant source from the Site, the reinstatement of the Site with clean fill, and stabilisation of soil materials with ground cover and/or sealed areas. Accordingly no remediation criteria are considered to be required for the protection of groundwater and surface water receptors.

8. REMEDIATION PLAN

For remediation planning the Site has been segregated into a number of areas as shown in **Figure 4, Figure 4A** and **Figure 4B, Appendix A**.

Remediation will take place following the completion of demolition works and the removal of the buildings from the Site. During the demolition works the concrete hardstand in Area 4A and 4B will be retained. The hardstand from these areas is to be removed once excavation has been completed in Area 1, Area 2A/2B and Area 3.

The proposed sequence of remediation works includes:

- Site establishment and set up of environmental controls required during remediation works
- Clearing of shrubs/trees around the Site
- Excavation contaminated materials
- Management of excavated materials
- Validation sampling¹² including a hold point to determine if further excavation is required to the achieve remediation objective.
- Reinstatement of excavated areas with clean fill sourced from a certified quarry, clean topsoil from a certified source, and establishment of an appropriate ground cover.
- Discussion with Site Auditor on whether the Site is to remain on the EMR or can be removed from the EMR.
- Preparation of a Contaminated Land Investigation Document (CLID) including a Site Suitability Statement and Draft SMP (if required) if the Site is to remain on the EMR, or Preparation of a Validation Report including a Site Suitability Statement if the property is to be removed from the EMR.
- Preparation of the Site Auditor Certification and submission of the documentation to the Department of Environmental and Science (DES).
- Provide copies of the documentation submitted to DES to DAWE.

The following sections summarise the proposed remediation works.

¹² Note validation sampling will be undertaken progressively during site excavation work

8.1 SITE ESTABLISHMENT

The Principal Contractor/Remediation Contractor will be responsible for undertaken undertaking, supervising and/or directing site establishment.

Site establishment will include the following:

- Work area fencing, warning signage and temporary site facilities.
- Occupational health and safety controls and monitoring.
- Environmental monitoring and controls.
- Preparing stockpiling areas (if required).
- Vehicular transit routes onto and off the site.
- Location, isolation, relocation, protection and/or termination of services potentially affected by the remediation/redevelopment works, if any.
- Contingency planning and controls to address unexpected finds.

8.2 VEGETATION CLEARING

The Principal Contractor/Remediation Contractor will be responsible for undertaken undertaking, supervising and/or directing vegetation clearing.

Clearing of shrubs/trees around the Site is to be removed prior to the commencement of excavation.

Vegetation is to be removed in accordance with the requirements set out in Ecological Australia (ELA) (2021) *Greenslopes DVA Remediation Planning*.

Shrubs/trees are to be cut off at ground surface such that root and soil material is not removed with the vegetation. Root and soil materials are to be removed in accordance with Section 7.3.

8.3 MATERIALS REQUIRING REMEDIATION AND MANAGEMENT OF EXCAVATED MATERIALS

The Principal Contractor/Remediation Contractor will be responsible for undertaking, supervising and/or directing the excavation works.

Based the site investigation data and discussions with recipient waste management facilities materials which require remediation have been identified and are summarised in **Appendix G**.

Materials requiring excavation from ground surface to 0.25 m below ground surface (bgs) are shown in **Figure 4A** and summarised in **Table 8-1**. **Table 8-1** also provides a summary of where the materials are to be disposed under the DES approved Disposal Permits held by the Principal Contractor/Remediation Contractor¹³. A copy of the Disposal Permits is provided in **Appendix D**.

Materials requiring excavation from 0.25 m to 0.4 m bgs are shown in **Figure 4B** and summarised in **Table 8-2**. Materials excavated from these depths are to be recovered for beneficial re-use at the BMI Group at the Redbank Resource Recovery Facility. BMI Group has advised that this facility can receive soil materials with contaminant concentrations below NEPM HIL-D human health guidelines for beneficial re-use at this facility for future commercial/industrial use, and provided the material does not contain ACM and demolition materials such as broken brick, concrete, timber etc. Tabulated data which includes the NEPM HIL-D criteria has been included in **Appendix B**.

¹³ Tetra Tech Coffey prepared the Disposal Permit application and Waste Levy Exemption on behalf of the Principal Contractor/Remediation Contractor. The Principal Contractor/Remediation Contractor is the holder of the Disposal Permit and Waste Levy Exemption.

Table 8-1 Materials Requiring Remediation Ground Surface to 0.25 m bgs as per Figure 4A

Area	Excavation Depth (m bgs)	Approximate Bank Excavation Volume (m ³)	Disposal Permit / Waste Management Facility OR Resource Recovery Facility
Area 1A	0.25	20	Disposal to Monocell under Disposal Permit SDP010002171 . Waste Management facility is located at: Ti Tree bioENERGY facility, 55 Champions Way, Willowbank, QLD (Lot 3 on SP167885 & Lot 8 on RP24574)
Area 1B	0.25	30	
Area 1C	0.25	10	
Area 3C	0.25	10	
Sub-total (Monocell)		70 (Note 2)	
Area 1	0.25	195	Disposal to Lined Landfill under Disposal Permit SDP010002201 located at: BMI Group Stapylton Resource Recovery Facility 144 Rossmanns Road, Stapylton, QLD (Lots 2 and 3 SP279441)
Area 2	0.2	100	
Area 3A	0.2	25	
Area 3B	0.2	35	
Sub-total (Lined Landfill)		355 (Note 2)	
Area 4A	0.2	70	Recovery for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility
Area 4B	Note 1	-	

Note 1: Materials from Area 4B require removal where **Unsuitable Fill Materials** are present. Unsuitable Fill Materials are those which contain anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space are also potentially present and are herein referred to in this RAP as "Unsuitable Fill Materials".

Note 2: A contingency of 50% has been applied for the monocell material. Disposal permit volumes are based on ex-situ volumes which include an assumed 1.4 bulking factor.

Table 8-2 Materials Requiring Remediation 0.25 to 0.4 m bgs as per Figure 4B

Area	Excavation Depth (m bgs)	Approximate Bank Excavation Volume (m ³)	Resource Recovery Facility
Area 1	0.25-0.4	155	Recovery for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility
Area 2	0.25-0.4	120	
Area 4A	Note 1	-	N/A
Area 4B	Note 1	-	N/A

Note 1: Materials from Area 4A/4B require removal where Unsuitable Fill Materials are present.

Important Note: Further excavation to that described in **Table 8-1** and **Table 8-2** may be required based on the validation data (refer to **Section 8.7**) and the presence of **Unsuitable Fill Materials**.

Waste Levy Exemption

A waste levy exemption has been granted (Exempt Waste Number: 230021CSE) for the disposal from the site to a maximum of 910 tonnes. The Waste Levy Exemption applies to both Disposal Permit SDP010002171 (Monocell) and SDP010002201 (Lined Landfill) and is provided in **Appendix E**.

Materials which are recovered for beneficial reuse at the Redbank Resource Recovery Facility are not subject to the Waste Levy.

Excavation Sequence

The Principal Contractor/Remediation Contractor has proposed to sequence excavations from the south to the north of the site as practicable.

8.4 TEMPORARY STOCKPILING

The Principal Contractor/Remediation Contractor will be responsible for temporary stockpiling.

Where practicable, excavated materials will be excavated and directly loaded onto DES licenced trucks for transport to the DES licenced disposal and/or resource recovery facility.

Where temporary on-site stockpiling is required, stockpiling is to be undertaken in accordance with the EMP.

If temporary stockpiles are required to be generated, then they shall be established:

- Away from adjacent properties.
- On concrete, asphalt or geo-textile fabric. Stockpiles shall not be placed directly on natural/uncontaminated soil as cross contamination could occur.

Stockpiles should:

- Not exceed the height of site boundary hoarding to minimise dust generation.
- Be less than 2 m in height with side slopes to be a maximum ratio of 1V:2H.
- Be appropriately labelled to minimise the risk of cross contamination.
- Be positioned and formed to minimise potential for stockpile erosion where possible.

At the end of each day, stockpiles should be wetted down, covered with 200 µm polythene sheeting or geofabric and secured to prevent the soil cover being removed by wind, or unauthorised persons.

Additional controls (e.g. bunding) would be required for longer-term management of stockpiles. If stockpiles are to be kept for longer-term (i.e. greater than 1 month) then this management plan shall be updated to include additional controls.

8.5 UNFORESEEN CONTAMINATION

A Competent Person¹⁴ must be present on-site during excavation to identify unforeseen contamination including but not limited to:

- visual/olfactory signs of commercial/industrial/medical wastes including chemical containers, bulk chemicals, hospital/medical wastes, industrial wastes, bulk ACMs, fuel/oily products, etc.
- visual or olfactory signs of hydrocarbon contamination
- ACM (if not an occasional, non-friable fragment).

If unforeseen contamination is encountered, excavation of these materials is to cease, and the SQP contacted to undertake an investigation of the materials to determine the required controls for the appropriate management of these materials, and approvals for the disposal of these materials (if required).

8.6 MATERIAL MOVEMENTS AND TRACKING

The Principal Contractor/Remediation Contractor shall implement a system for the tracking of materials which satisfies the requirements of the DES approved Disposal Permit(s) (refer to Appendix D), waste levy exemption (refer to Appendix E), and recipient waste management facility. Material tracking is to include but not limited to:

- source location of excavated material

¹⁴ Refer to Section 1.3 for the definition of Competent Person

- volume of excavated material
- destination of excavated material
- records of waste tracking (e.g. weighbridge dockets, waste transport certificates, etc.) from the waste transporter and the waste receiver.

Records of material tracking (including records of trucks, dates, source of material and weighbridge dockets) are to be provided to the SQP at the completion of remediation.

8.7 VALIDATION SAMPLING

Validation sampling will be undertaken progressively during remediation.

Following the excavation of the material across the Site a visual inspection shall be undertaken by the SQP of the completed excavations and materials remaining on the Site.

Photographs of the completed excavations will be taken.

Validation samples shall be collected from soil exposed at the base of the excavation by the SQP or suitably trained practitioners under the guidance of the SQP. Validation sampling will include the collection of up to 80 soil samples over a regular sampling grid (i.e. approximately 1 sample per 25 m² over the base of the excavation). Blind intra-lab and inter-lab duplicate samples will also be collected and analysed for chemical contaminants and asbestos (refer to Table 8-3 for sampling frequency). Validation samples will be collected along the walls of the northern and eastern site boundaries from at 0.1 m depth at 5 m spacings along the wall of the excavations.

The samples will be analysed at a National Association of Testing Authorities (NATA) accredited laboratory¹⁵ for the following:

- metals (arsenic, cadmium, chromium (total and VI), copper, lead, nickel, zinc, mercury)
- OCPs
- Asbestos (quantification as per method described in Section 11.3.2, Schedule B2 of the ASC NEPM).

HOLD POINT

Following the collection of validation samples the excavations are to kept open by the Remediation Contractor pending instruction from the SQP.

The SQP will review and discuss the validation sampling results with the Site Auditor and DVA.

Where validation sampling results demonstrate compliance with the remediation objectives the SQP will inform the Remediation Contractor that reinstatement of excavated areas can commence in accordance with **Section 7.7** of the RAP.

Where validation sampling results do not comply with the remediation objectives the SQP (in consultation with DVA and the Site Auditor) will inform the Remediation Contractor to:

- complete further excavation to achieve the remediation objective. This will include instruction on the excavation to be completed in accordance with Section 7.4 to 7.6 of this RAP. OR
- reinstatement of excavated areas can commence in accordance with **Section 7.7** of the RAP.

8.7.1 Sample Nomenclature

Samples collected will be identified by a unique sample identifier. The sample identifier will be included on all sample jars and associated paperwork including field sheets and chain of custody forms.

Sample labels will be completed in indelible ink and will include the following information:

¹⁵ NATA accredited laboratories to be used included Australian Laboratory Services and Eurofins.

- Project number.
- Sample identifier.
- Date of sample collection (day/month/year).
- Initials of sampler.

Quality control samples will be labelled:

- Intra-laboratory and inter-laboratory duplicates: "DUP" + sequence number (i.e. DUP01, DUP02 etc.).
- Trip blanks: "TB" + sequence number (i.e. TB01, TB02 etc.).
- Rinsate blanks: "RB" + sequence number (i.e. RB01, RB02 etc.).

8.7.2 Sample Storage and Preservation

Soil samples collected for chemical analysis shall be placed into laboratory prepared and supplied sample containers (i.e. jars, bags and bottles) with teflon-lined lids, where required. Soil samples collected for asbestos analysis shall be placed in clean, zip-lock plastic bags supplied by the laboratory.

Sample containers will be placed directly into an ice filled cooler and transported to the laboratories under chain of custody protocol. All samples are required to be documented as received by the laboratory chilled and intact.

8.7.3 Sampling Equipment Decontamination Procedures

Non-disposable sampling equipment (e.g. trowel, shovel etc.) will be decontaminated between each sampling location as follows:

- Scrub all surface of the equipment with a wire brush to remove soil and/or gross contamination;
- Scrub the equipment in a bucket filled with a solution of phosphate free detergent (e.g. Liquinox), using a brush that can reach all surfaces; and
- Rinse the equipment in clean potable water.

8.7.4 Field Quality Control Samples

Field quality and laboratory quality assurance / quality control (QA/QC) samples to be collected are described in the following table.

Table 8-3 Field and Laboratory QAQC

Item	Acceptable Limit
Analysis of blind (intra-laboratory) duplicates and split (inter-laboratory) duplicates.	<p>Rate of 1:20 primary soil samples for the same analysis of primary samples; Calculation of relative percentage differences between primary and duplicate samples. RPD results for soil samples:</p> <ul style="list-style-type: none">• No Limit (where the average concentration is 0-10 x laboratory limit of reporting (LOR);• 50% (where the average concentration is 10-20 x laboratory LOR); and• 30% (where the average concentration is > 20 x laboratory LOR). <p>RPDs will be considered where a concentration is greater than 10 times the LOR.</p>
Analysis of rinsate blanks	<p>Where non-disposable equipment is used, at least one (1) sample per batch of soil sampling or material type where the source and sampling methods are consistent; and</p>

	Results less than the laboratory LOR.
Trip Spikes	Volatile compounds are not contaminants of concern for the Site and accordingly trip spikes are not considered to be required in the QAQC sampling program.
Analysis of laboratory prepared trip blanks	At least one (1) sample per batch for soil samples submitted. Results less than the laboratory LOR.
Analysis of laboratory blanks, surrogates, reference and control samples	The laboratories will be required to conduct their own internal quality program for assessment of the repeatability of the analytical procedures and instrument accuracy under their NATA accreditation. This will include analysis of laboratory blank samples, duplicate samples, spike samples, control samples and surrogate spikes. The laboratory QA/QC procedures and results will be described within the laboratory reports. The laboratory internal QA/QC sample results will be reviewed for comparison with the laboratory's NATA guidelines and Schedule B3 of the ASC NEPM 2013.
Laboratories and methods used	NATA accredited for the method. Methods should be in accordance with amended ASC NEPM 2013.
Holding times	Samples should be analysed within recommended holding times.
Limits of Reporting	Results less than the adopted assessment criteria; justify/quantify if different.

8.8 REINSTATEMENT OF EXCAVATIONS / IMPORTED FILL

The Principal Contractor/Remediation Contractor will be responsible for the reinstatement of excavations and the importation of fill materials.

Reinstatement of excavated areas is to be undertaken with clean fill sourced from a certified quarry, and clean topsoil from a certified source, and establishment of an appropriate ground cover.

The Principal Contractor/Remediation Contractor is to provide the SQP with information of the source of imported fill prior to any fill material being imported to the site.

If the fill is not certified, verification samples (1 per 25 m³ of imported material; minimum of three samples per source) are to be collected prior to importing the fill to confirm the fill's status as clean. Clean is considered to be soil materials with contaminant concentrations below the concentrations in the following table or below the NEPM HIL-A Residential Guidelines (Health and Ecological) if not specified in the table.

Records or verification log for Imported soil / fill material brought onto site as part of the project are to be kept to confirm that material has been certified as clean and/or verification sampling data has been undertaken.

Table 8-4 Imported Fill Material Criteria

Analyte	Concentration (mg/kg)
PFAS	
Total PFAS	ND
Hydrocarbons	
F1 C6-C10	ND
F2 C10-C16	ND
F3 C16-C34	ND
F4 C34-C40	ND
BTEX	
Benzene	ND

Analyte	Concentration (mg/kg)
Toluene	ND
Ethyl-benzene	ND
Xylenes	ND
PAH	
Total PAH	ND
Pesticides	
OCP/OPP's	ND
Asbestos	
Bonded ACM	ND
FA and AF	ND

Notes: ND - below laboratory detection limits

8.9 INSPECTIONS

The SQP shall undertake weekly inspections during the remediation works to check on compliance with the RAP and EMP, and to:

- check that record keeping (such as material tracking, etc.) is occurring
- Check that erosion and sediment control (ESC) measures are in good working order.

8.10 RECORDS

The Principal Contactor/Remediation Contractor is responsible for maintaining records of the completed remediation works which document compliance with the RAP and SMP. Records are to include but not limited to:

- Material tracking registers as per Section 8.5 of the RAP
- Survey of the remediation works to confirm the required excavation depths in Section 7.3 of the RAP has been achieved.
- Photographic records of the remediation works completed including photographic records of materials which have been taken off-site.
- Records of site inspections/audits completed by the Principal Contactor/Remediation Contractor of the remediation works.

The records are to be provided to the SQP at the completion of the remediation works.

9. CONTAMINATED LAND INVESTIGATION DOCUMENT

At the completion of the remedial works the SQP is to prepare a Contaminated Land Investigation Document (CLID) in accordance with the requirements of the Department of Environment and Science *Queensland Auditor Handbook for Contaminated Land, Module 6: Content requirements for contaminated land investigation documents, certifications and audit reports, version 2.01, 2019*.

The CLID is to include a Site Suitability Statement and Draft SMP (if required) if the Site is to remain on the EMR, or Preparation of a Validation Report including a Site Suitability Statement if the property is to be removed from the EMR.

10. HEALTH, SAFETY AND ENVIRONMENTAL CONTROLS

A site-specific Work Health and Safety (WHS), and Environmental Management Plan (EMP) will be required to be prepared by the Principal Contractor/Remedial Contractor and include, but not be limited to the minimum controls outlined below. Additional controls are outlined in the Development Consent.

10.1 OCCUPATIONAL HEALTH AND SAFETY

The Principal Contractor/Remedial Contractor will be required to comply with the requirements of the *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2011*.

A Site-Specific Safety Plan (SSSP) will be required to be prepared by the Principal Contractor/Remedial Contractor engaged to undertake the project prior to the commencement of the remedial and validation works in order to protect workers at the site as well as people in the surrounding areas. The SSSP should include, but not be limited to:

- A review of the requirements of Work Safe Queensland;
- Risk assessments;
- Safe work method statements (SWMS); and
- Site Specific Safety requirements associated with the remediation works detailed in this RAP including excavation and management of contaminated soil.

The SSSP would consider the following but not limited to:

- Hazard identification and control;
- Air monitoring during excavation and remediation works;
- Chemical hazard control;
- Handling procedures;
- Personal protective equipment;
- Work zones;
- Decontamination procedures;
- Noise
- Odour¹⁶
- Unexpected contamination
- Contingency plans; and
- Incident reporting.

The SSSP will be periodically reviewed and updated prior to various project tasks being conducted. It will be specifically written for the remediation and validation stage.

The SQP, supporting sub-contractors and third-party observers to the site will be required to work to the WHS Plan of the Principal Contractor/Remediation Contractor and to a SSSP developed for the relevant activity.

¹⁶ Note the contaminants of concern are not odorous and nuisance odours are not expected to be a concern for the Site during remediation.

10.2 INDUCTIONS

All workers and subcontractors visiting the site must report to the Principal Contractor/Remediation Contractor prior to commencing works. The Principal Contractor/Remediation Contractor will provide a brief induction for workers prior to commencing remedial activities on site, examine the works to be performed and potential risks/controls for the known contamination issues identified, and procedures to manage unexpected finds of contamination.

10.3 RECORD KEEPING

Relevant documentation regarding the implementation of this RAP should be maintained by the Principal Contractor/Remediation Contractor. The documentation may include (but not be limited to):

- Site plans, identifying the location of the asbestos-impacted soil areas;
- Air monitoring and clearance certificates;
- Laboratory reports;
- Waste Classification Assessments;
- Revisions of the RAP;
- Incident reports, and records relation to the identification and management of unexpected finds of contamination;
- Staff and contractor inductions/toolbox talks/asbestos awareness training and training records;
- Relevant environmental reports;
- Remediation Area (e.g. Area 1, 2A, 2B, etc.) where the excavated material originated from;
- Estimated excavation volume; and
- Company name of the cartage contractors, if multiple contractors are being used.

During material removal from site the following information shall be recorded and maintained by the Principal Contractor/Remediation Contractor. This must include the following:

- Copy of tipping dockets;
- Date and time of disposal;
- Name and address of tip/facility of disposal/transfer;
- Mass of waste (tonnes);
- Type of waste; and
- Truck registration.

10.4 TOOLBOX TALKS

Prior to commencement of the remedial works each day, and following a significant change in site conditions, relevant site personnel should undertake a toolbox talk. The toolbox talk must incorporate details and instructions on how to manage contaminated soil in accordance with this RAP and the SSSP. The toolbox can be combined with the Induction if practicable.

10.5 ACCESS

As the site will be classified as a construction area, it is necessary to restrict access solely to authorised staff and contractors who have completed the site safety induction and have appropriate levels of personal protective equipment.

Fencing will be required around the perimeter of the site to restrict unauthorised access to the site.

Barricades and signage, including contractor details and contact numbers, will be erected near the gate at the site. The signage will remain displayed on the site entrance throughout the duration of the demolition and remedial works.

The Principal Contractor/Remediation Contractor will control site access and will authorise visitor access on an “as needed” basis.

10.6 WORKING HOURS

Work hours are to be undertaken in accordance with the EMP.

10.7 COMMUNITY CONSULTATION

Prior to conducting remediation works, a community consultation plan shall be developed and distributed by the Principal Contractor/Remediation Contractor (or other agreed party such as Brisbane City Council) in general accordance with Schedule B(8) of the amended ASC NEPM). The notice will outline:

- That remediation and excavation work will be carried out at the site.
- The time and date the work was proposed to commence.
- That works were being conducted to minimise risk of site contamination impacting off-site receptors.
- The contact information and processes required for registering any complaints.

The community consultation plan is to include information on who is to be consulted and how consultation will be conducted. Consultation should include nearby residents, Greenslopes Private Hospital, community groups, elected local, State and Commonwealth members and other interested parties.

10.8 DESIGNATED WASH DOWN AREA

To minimise tracking of contaminated soil on vehicles leaving the site, a wheel wash bay shall be installed at the site entrance/exit. This may comprise a cattlegrid underlaid by geo-textile fabric with aggregate on either side.

All vehicles are to be washed in the wheel wash bay prior to leaving the compounds.

Where vehicles have been used on exposed soil, tyres and wheels and are to be cleaned using a low-pressure hose and/or hand tools where necessary.

The design of the wheel wash bay area is to allow for capture of wastewater and removal by an appropriately licenced contractor for offsite management/disposal as regulated waste.

10.9 DUST SUPPRESSION

The Principal Contractor/Remediation Contractor will be responsible for dust suppression.

Dust suppression techniques will be required to control generation of visible dust during the course of the works. Dust suppression techniques may include one or a combination of the following:

- Fine water spraying/misting directly onto the soil if excessive dust is generated during excavations.
- Use of PVA to stabilise the soil, if required.
- Covering soil within trucks using tarpaulin or fabric cover.
- Covering dump truck/skip bins/stockpiles with high-density polythene (HDPE) sheeting or geotextile fabric.
- Restricting trucks to low speeds on-site.
- Ceasing works if visible dust is being generated.

10.10 AIR MONITORING

Air monitoring will be conducted by the SQP/Licensed Asbestos Assessor during remediation works. Monitoring for asbestos (Licensed Asbestos Assessor) and OCPs (SQP) will be conducted on site in accordance with the following table.

Component	Description
Asbestos	Air sampling for asbestos will be undertaken from site boundary locations, work area boundary locations, and clearance air monitoring within work areas where required. Air monitoring will be undertaken in accordance with the Queensland <i>How to Safely Remove Asbestos Code of Practice 2021</i> and the <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition</i> (Safe Work Australia, 2005). It is anticipated that air monitoring will be undertaken from a minimum of 6 to 8 locations by a Licensed Asbestos Assessor. Air quality criteria for asbestos are included in the code of practice.
OCPs	During the undertaken of excavation works ambient dust monitoring is to be undertaken at up to 3 locations around the boundary of the site. Monitoring locations will be positioned based on forecast wind direction and adjacent residential receptors and are expected to include a sampler on the sites western, northern and eastern boundary. Dust samples will be collected continuously over a 1-week period based on USEPA Method TO-4 <i>Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling</i> , and analysed weekly at a NATA accredited laboratory for OCPs.

Air quality monitoring results for asbestos and OCPs will be reported in the CLID.

Air quality results for OCPs will be compared to the USEPA Regional Screening Levels (RSL) (THQ = 0.1) for Residential Air¹⁷ with a correction factor of 10 (see footnote¹⁸), or other site specific risk assessment criteria agreed with the Site Auditor. USEPA Residential Air Quality Guidelines for OCPs which have reported positive detection in soil at the site are summarised in the following table.

Table 10-1 Air Quality Guidelines

Contaminant	USEPA RSL Residential Air Quality ($\mu\text{g}/\text{m}^3$)	USEPA RSL Residential Air Quality with a correction (multiplication) factor of 10 (ng/m^3)
4,4-DDE	0.029	290
Aldrin	0.00057	5.7
chlordane	0.028	280
DDD	0.041	410
DDT	0.029	290
Dieldrin	0.00061	6.1
Endrin aldehyde	no guideline	no guideline
Endrin ketone	no guideline	no guideline
Endosulfan I	no guideline	no guideline
Endrin	no guideline	no guideline
Heptachlor	0.0022	22
Heptachlor epoxide	0.0011	11

¹⁷ <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>

¹⁸ An adjust factor of 10 has been applied to the USEPA RSL criteria ($\text{TR}=1\text{E}-6$, $\text{THQ}=0.1$) to account for an acceptable lifetime risk of cancer (ILCR) of 1 in 100,000 and an acceptable HQ of 1 which are adopted as standard practice in Australia.

10.11 EROSION AND SEDIMENT CONTROL

Prior to the commencement of remediation the Principal Contactor/Remediation Contractor is to prepare an Erosion and Sediment Control Plan (ESCP). The ESCP is to be prepared in accordance with Brisbane City Council's EP016 Erosion and Sediment Control Procedure require an ESCP and be signed by a Suitably Qualified Professional (CPESC or RPEQ). Controls included in the ESCP are to meet current industry best practice techniques.

Erosion and sediment controls must be in place prior to commencement of soil disturbance activities. The nature of the erosion and sediment controls will depend on the amount of water generated by remediation and dust suppression. Examples include sediment barriers and traps to mitigate sediment load entering the stormwater system or migrating offsite.

10.12 SURFACE WATER DISCHARGE AND MONITORING

The Principal Contractor/Remediation Contractor will be responsible for managing water generated during construction and ensuring the lawful discharge or removal of water from the Site.

Remediation works are to be undertaken in a manner which minimises the release of surface water from the Site as much as practicable. Clean water around undisturbed areas is to be directed around excavation areas.

Where surface water accumulates in excavations as a result of a rainfall event the water should be removed as a regulated waste by an appropriately licenced contractor.

Alternatively accumulated surface water may be sampled and tested at a NATA accredited laboratory to determine appropriate management requirements in accordance with the EMP. Stormwater released from the site is to comply with the following guidelines:

- Australian and New Zealand guidelines for fresh and marine water quality 2000 (2018 edition) prepared by Australian and New Zealand Environment and Conservation Council (ANZECC) and the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) ("ANZECC Guidelines). For toxicants a 95% level of protection is assumed for lowland freshwater based on the management intent described in Environmental Protection (Water) Policy 2009, South-east Queensland Map Series PLAN WQ1423 (Queensland Government, 2010)
- Guidelines for Managing Risks in Recreational Water (NHMRC, 2008).
- *Brisbane River Estuary - Environmental Values and Water Quality Objectives (2010) Basin No. 143 (part), including all creeks of the Brisbane River estuary, other than Oxley Creek* (Department of Environment and Resource Management, 2020) for Norman Creek Fresh Water.

In addition to the above following criteria will also apply:

- no coarse sediment in discharge
- hydrocarbons – no visible sheens
- waste – no waste or litter.

11. CONTINGENCY PLAN

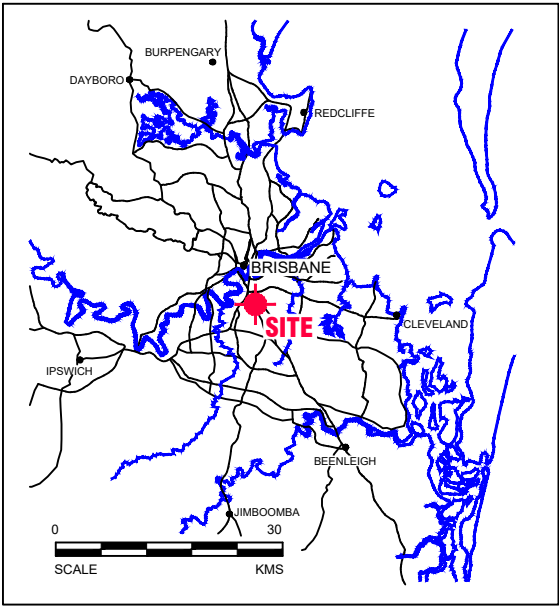
The conditions encountered during remedial works can be uncertain. A set of typical issues and proposed corrective actions associated with a remediation program is provided in the following table.

Table 10-1: Contingency Plan

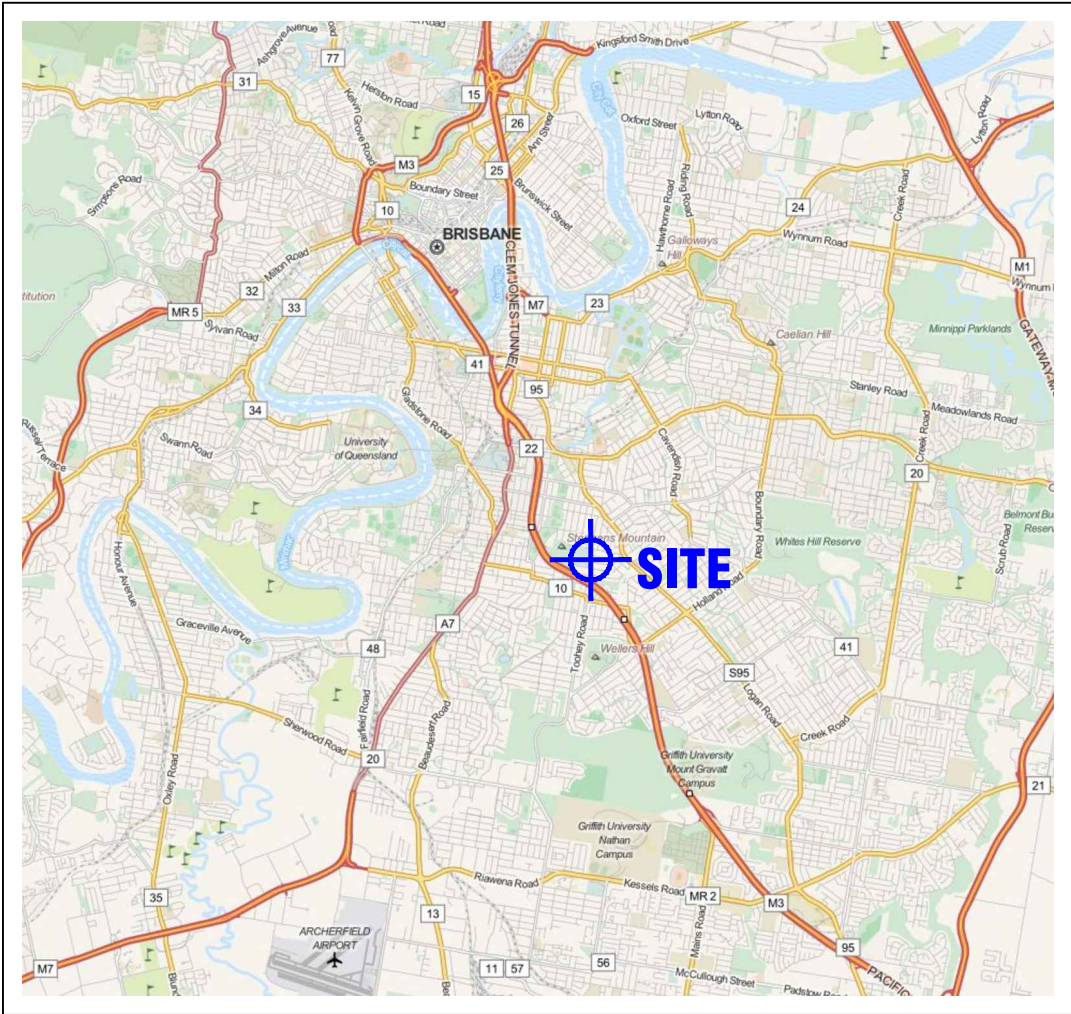
Potential issues	Proposed corrective actions, as appropriate	Responsible person	Communication and additional sampling/monitoring
Heavy rain / excessive stormwater	<p>Minimise active contaminated work area; improve stormwater diversion.</p> <p>Check control measures are adequate to prevent surface water runoff entering and leaving excavation and stockpile areas.</p> <p>Temporary bunding or diversion drain, HDPE sheeting placed under stockpiles, silt fences/hay bales surrounding stockpiles and protection existing drains to be regularly inspected to ensure that they are in good condition and if necessary, upgraded where their performance is deteriorating.</p>	Principal Contactor/ Remediation Contractor	<p>Breaches are to be recorded in the daily site log and provided to the SQP.</p> <p>No additional monitoring/sampling required.</p>
Excessive dust	Use water sprays; stop dust-generating activity until better dust control can be achieved or apply interim capping systems on stockpiles or exposed material. Stop work in high wind conditions.	Principal Contactor/ Remediation Contractor	Breaches are to be recorded in the daily site log.
Unexpected contamination findings	If unexpected contamination or aesthetically unacceptable material (e.g. stained or odorous soil, asbestos containing materials (ACM) etc., materials which pose physical hazards (sharp/angular), aesthetically unacceptable) is encountered onsite, the works will stop in the affected part of the site. Works shall cease and the Principal Contactor/Remediation Contractor shall request the SQP to conduct an assessment of the material to formulate an appropriate response.	Principal Contactor/ Remediation Contractor SQP	Further assessment will be required by the SQP to determine an appropriate course of action.
Relics	If human remains, buried stone artefacts, items of heritage or other indications of an aboriginal site are discovered during excavation work, work shall cease until an appropriate action can be confirmed.	Principal Contactor/ Remediation Contractor	Principal Contractor and the required authorities will be notified.
Discovery of underground tanks during excavation works	<p>Work to be suspended until SQP can further assess impacted soils/materials and associated risks.</p> <p>Tank removal works to be overseen and validated by the SQP.</p>	Principal Contactor/ Remediation Contractor SQP	Validation of excavations after tank removal by SQP. Validation samples would at a minimum be analysed for Metals (Standard 8) TRHs, BTEX compounds and PAHs.

Potential issues	Proposed corrective actions, as appropriate	Responsible person	Communication and additional sampling/ monitoring
Complaints are received directly relating to the works undertaken	Stop works and implement control measures to address complaint (if possible).	Principal Contractor/ Remedial contractor	Notify relevant Project Managers following complaint and follow incident procedure.

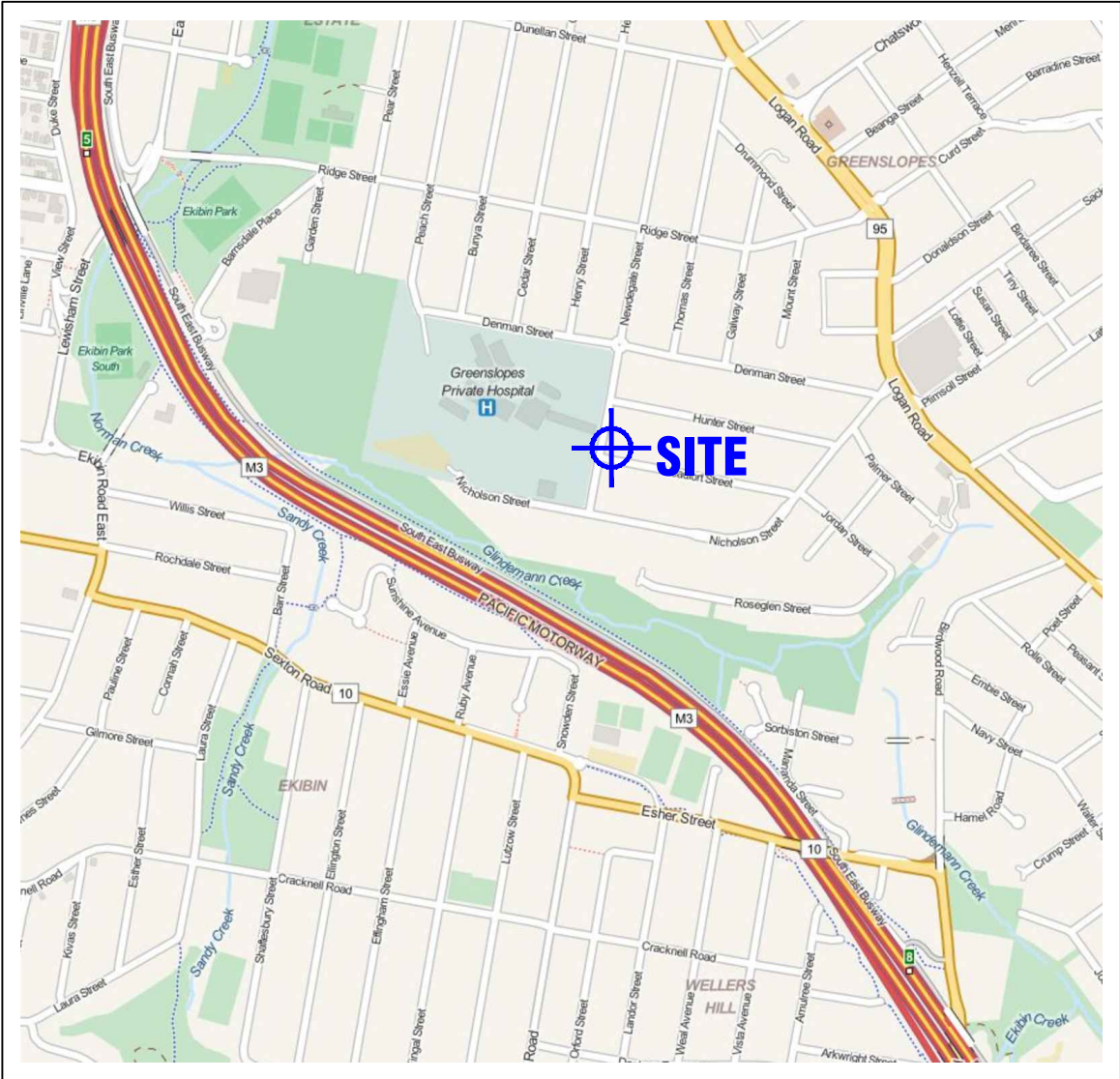
APPENDIX A: FIGURES



GENERAL AREA MAP

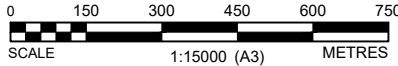


REGIONAL AREA MAP



LOCAL AREA MAP

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revision

no.	description	drawn	approved	date
A	ORIGINAL ISSUE			

drawn	SMW / AW
approved	-
date	24-07-2023
scale	AS SHOWN
original size	A3



client:	DEPARTMENT OF VETERAN AFFAIRS		
project:	DVA GREENSLOPES 51-55 HEADFORD STREET, GREENSLOPES, QLD		
title:	SITE LOCATION PLAN		
project no:	754-BNEEN282781	figure no:	FIGURE 1
		rev:	A



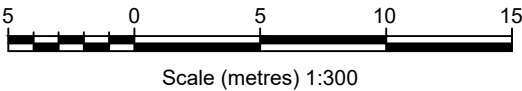
LEGEND

- 2013 SAMPLE LOCATION
- 2019 SAMPLE LOCATION
- 2021 SAMPLE LOCATION
- AREA SEALED WITH CONCRETE
- SITE BOUNDARY
- SAMPLE LOCATION WITH NEPM HIL-A EXCEEDENCE (OCP)
- SAMPLE LOCATION WITH NEPM HIL-C EXCEEDENCE (OCP)
- SAMPLE LOCATION WITH NEPM HIL-D EXCEEDENCE (OCP)
- FILL DEPTH OBSERVED IN 2021 INVESTIGATION AND ANTHROPOGENIC MATERIALS OBSERVED IN PREVIOUS INVESTIGATIONS
- ASBESTOS CONTAINING MATERIALS OBSERVED AT SAMPLE LOCATION

Note on demolition of sealed areas: the Site is currently undergoing demolition and areas sealed with concrete is subject to change.

Note on HIL-D
Sample locations which exceed HIL-D have been included in this figure to assist potential waste disposal facilities with the interpretation of data. HIL-D.

revision	no.	description			drawn	approved	date
	A	ORIGINAL ISSUE					



SOURCE: NEARMAP IMAGE - 9/08/2019

drawn	SMW / AW
approved	-
date	24-07-2023
scale	AS SHOWN
original size	A3



client:		DEPARTMENT OF VETERAN AFFAIRS	
project:		DVA GREENSLOPES 51-55 HEADFORD STREET, GREENSLOPES, QLD	
title:		SUMMARY OF HUMAN HEALTH EXCEEDANCES AND FILL DEPTH	
project no:	754-BNEEN282781	figure no:	FIGURE 3
		rev:	A



revision	no.	description			drawn	approved	date	<div>501015</div> <div>Scale (metres) 1:300</div>			drawn	SMW / AW	<div>TtTETRA TECHCOFFEY</div>			client:	DEPARTMENT OF VETERAN AFFAIRS		
	A	ORIGINAL ISSUE									approved	-				project:	DVA GREENSLOPES 51-55 HEADFORD STREET, GREENSLOPES, QLD		
											date	08-08-2023				title:	EXCAVATION PLAN 0-0.25 M BGS		
											scale	AS SHOWN				project no:	754-BNEEN282781	figure no:	FIGURE 4A
											original size	A3							rev: A

PLOT DATE: 8/8/2023 3:12:26 PM DWG FILE: F:\1. PROJECTS\1. SYDNEY\OTHER OFFICES\BNE-EN754-BNEEN282781\CAD\754-BNEEN282781.DWG

SOURCE: NEARMAP IMAGE - 9/08/2019



LEGEND

AREA SEALED WITH CONCRETE

SITE BOUNDARY

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE			

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Scale (metres) 1:300

SOURCE: NEARMAP IMAGE - 9/08/2019

drawn	SMW / AW
approved	-
date	24-07-2023
scale	AS SHOWN
original size	A3

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TETRA TECH

COFFEY

client:	DEPARTMENT OF VETERAN AFFAIRS		
project:	DVA GREENSLOPES 51-55 HEADFORD STREET, GREENSLOPES, QLD		
title:	EXCAVATION PLAN 0.25-0.4 M BGS		
project no:	754-BNEEN282781	figure no:	FIGURE 4B
		rev:	A

APPENDIX B: DATA TABLES

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Area	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																							Polyaromatic Hydrocarbons (PAHs)																			
						Asbestos (ID) (ND - not detected)	ACM (w/w)	Asbestos Fines (w/w)	4,4-DDE	α-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	chlordane	γ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Benzo(e)pyrene TEQ calc (Half)	Benzo(e)pyrene TEQ (LOR)	Benzo(e)pyrene TEQ calc (Zero)	Benzo(b+)]fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)]perylene	Benzo(k)fluoranthene	Chrysene							
Units	-	-	-	-	-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
EQL	-	-	-	-	-	-	-	-	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		
EIL - Res/Open Space						-	-	-									180																																		
HIL-A Residential						-	0.01%	0.001%				6		50					240					270			10		6		10	300	20		3	3	3														
HIL-C Recreational						-	0.02%	0.001%				10		70					400					340			20		10		10	400	30		3	3	3														
SS01	0	0.1	AREA 2	ACM	16/07/2013	Chrysotile		0.007% (*)	1.3	<0.05	<0.05	<0.12	<0.05	0.9	<0.05	1.7	3.7	6.7	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	7.67	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SS02	0	0.1	AREA 1B / AREA 1	ACM	16/07/2013	Chrysotile		0.022% (*)	<0.05	<0.05	<0.05	<0.25	<0.05	20	<0.05	<0.05	0.12	<0.22	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	20.58	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SS03	0	0.1	AREA 1		16/07/2013	ND		ND	0.09	<0.05	0.11	1.81	<0.05	0.3	<0.05	<0.05	0.13	<0.27	1.7	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	2.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SS04	0	0.1	AREA 1		16/07/2013	ND		ND	<0.05	<0.05	<0.05	1.15	<0.05	8.2	<0.05	<0.05	<0.05	<0.15	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.1	9.54	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SA01/A01	0	0.1	AREA 1	ACM	25/09/2013	Chrysotile		0.0005%																																											
SA02/A02	0	0.1	AREA 1		25/09/2013																																														
SA03/A03	0	0.1	AREA 1		25/09/2013																																														
SA04/A04	0	0.1	AREA 1	Slag, Brick	25/09/2013	ND		ND																																											
SA05/A05	0	0.1	AREA 2	Slag	25/09/2013																																														
SA06/A06	0	0.1	AREA 2	Slag	25/09/2013	ND		ND																																											
SA06/A06	0.3	0.4	AREA 2	Slag	25/09/2013	ND		ND																																											
SA07/A07	0	0.1	AREA 4A		25/09/2013	ND		ND																																											
SA08/A08	0	0.1	AREA 4A	Slag, Concrete, Wood	25/09/2013	ND		ND																																											
SA09/A09	0	0.1	AREA 1		25/09/2013	ND		ND																																											
SA10/A10	0	0.1	AREA 1	Slag	25/09/2013	ND		ND																																											
SA11/A11	0	0.1	AREA 1		25/09/2013	ND		ND																																											
SA13/A13	0	0.1	AREA 1		25/09/2013	ND		ND																																											
Main Hall (under building)	0	0	AREA 2	ACM	25/09/2013		0.0149%																																												
Accomodation Building (under building)	0	0	AREA 1	ACM	25/09/2013		0.0303%																																												
Unsealed External Areas	0	0.01	-		25/09/2013		0.0084%																																												

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

[illegible]

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

[illegible]

[illegible]

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Area	Anthropogenic Materials	Sampled_Date	H)								Metals								TRH				BTEX								Other			
						Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Chromium (hexavalent)	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH		
Units	-	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
EQL	-	-	-		-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5	1															
EIL - Res/Open Space						-					170			100		245	196	1112		287	420		180	120	300	2800											
HIL-A Residential						-						300			100	20	100	6000	300	10	400	7400	100	45	110	2500	10000										
HIL-C Recreational						-						300			300	90	300	17000	600	13	1200	30000	300	NL	NL	2500	10000										
SS01	0	0.1	AREA 2	ACM	16/07/2013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	32	0.7	54	21	39	<0.1	35	760		<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3					
SS02	0	0.1	AREA 1B / AREA 1	ACM	16/07/2013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	1.4	12	27	100	<0.1	8.4	2000		<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3					
SS03	0	0.1	AREA 1		16/07/2013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16	0.4	42	20	75	<0.1	18	190		<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3					
SS04	0	0.1	AREA 1		16/07/2013	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	0.6	22	33	72	<0.1	11	250		<20	<50	260	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3					
SA01/A01	0	0.1	AREA 1	ACM	25/09/2013																																
SA02/A02	0	0.1	AREA 1		25/09/2013																																
SA03/A03	0	0.1	AREA 1		25/09/2013																																
SA04/A04	0	0.1	AREA 1	Slag, Brick	25/09/2013																																
SA05/A05	0	0.1	AREA 2	Slag	25/09/2013																																
SA06/A06	0	0.1	AREA 2	Slag	25/09/2013																																
SA06/A06	0.3	0.4	AREA 2	Slag	25/09/2013																																
SA07/A07	0	0.1	AREA 4A		25/09/2013																																
SA08/A08	0	0.1	AREA 4A	Slag, Concrete, Wood	25/09/2013																																
SA09/A09	0	0.1	AREA 1		25/09/2013																																
SA10/A10	0	0.1	AREA 1	Slag	25/09/2013																																
SA11/A11	0	0.1	AREA 1		25/09/2013																																
SA13/A13	0	0.1	AREA 1		25/09/2013																																
Main Hall (under building)	0	0	AREA 2	ACM	25/09/2013																																
Accomodation Building (under building)	0	0	AREA 1	ACM	25/09/2013																																
Unsealed External Areas	0	0.01	-		25/09/2013																																
A01, A04, A10	0.15	0.15	-		25/09/2013																																
A06, A10	0.15	0.15	-		25/09/2013																																
HA01	0	0.1	AREA 2		25/09/2013	-	-	-	-	-	-	-	-	9.3	< 0.4	39	8.1	7.3	< 0.1	20	64																
HA02	0	0.1	AREA 3C		25/09/2013	-	-	-	-	-	-	-	-	14	< 0.4	44	6.4	15	< 0.1	24	44																
HA03	0	0.1	AREA 3C		25/09/2013	-	-	-	-	-	-	-	-	20	< 0.4	69	12	27	< 0.1	25	92																
HA04	0	0.1	AREA 2		25/09/2013	-	-	-	-	-	-	-	-	14	< 0.4	54	11	14	< 0.1	16	26																
HA05	0	0.1	AREA 2		25/09/2013	-	-	-	-	-	-	-	-	17	< 0.4	66	9.2	10	< 0.1	19	45																
QC01 (DUP HA05)	0	0.1	AREA 2		26/09/2013									21	< 0.4	73	10	16	< 0.1	20	54																
QC01A (TRIP HA05)	0	0.1	AREA 2		26/09/2013									11	< 0.4	90	12	20	< 0.1	27	74																
HA06/SA11	0	0.1	AREA 1C / AREA 1		25/09/2013	-	-	-	-	-	-	-	-	22	< 0.4	88	9.3	13	< 0.1	19	41																
HA07/SA12	0	0.1	AREA 1B / AREA 1		25/09/2013	-	-	-	-	-	-	-	-	15	< 0.4	43	13	63	< 0.1	15	140													30	5.8		
HA08/SA13	0	0.1	AREA 1		25/09/2013	-	-	-	-	-	-	-	-	10	< 0.4	39	14	50	< 0.1	11	72																
HA09	0	0.2	AREA 1B		25/09/2013	-	-	-	-	-	-	-	-	10	< 0.4	25	24	120	0.1	8.8	380																
HA10	0	0.2	AREA 1A	Slag, Coal	25/09/2013	-	-	-	-	-	-	-	-	19	< 0.4	22	19	120	< 0.1	8.7	330																
HA11	0	0.1	AREA 1		25/09/2013	-	-	-	-	-	-	-	-	23	< 0.4	50	15	140	< 0.1	13	450												25	6.3			
1-0.0	0	0.1	AREA 2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
1-0.3	0.3	0.3	AREA 2		1/10/2019																																
2-0.0	0	0.1	AREA 3C		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
QC01 (DUP 2-0.0)	0	0.1	AREA 3C		1/10/2019																																
QC02 (TRIP 2-0.0)	0	0.1	AREA 3C		1/10/2019																																

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Area	Anthropogenic Materials	Sampled_Date	H)								Metals								TRH				BTEX							Other						
						Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (II+VI)	Copper	Lead	Mercury	Nickel	Zinc	Chromium (hexavalent)	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH				
Units	-	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg								
EQL	-	-	-		-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5	1																	
EIL - Res/Open Space										170				100		245	196	1112		287	420		180	120	300	2800													
HIL-A Residential											300			100	20	100	6000	300	10	400	7400	100	45	110	2500	10000													
HIL-C Recreational											300			300	90	300	17000	600	13	1200	30000	300	NL	NL	2500	10000													
2-0.3	0.3	0.3	AREA 2		1/10/2019																																		
QC03 (DUP 2-0.3)	0.3	0.3	AREA 2		1/10/2019																																		
QC04 (TRIP 2-0.3)	0.3	0.3	AREA 2		1/10/2019																																		
3-0.0	0	0.1	AREA 3C		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
3-0.35	0.35	0.35	AREA 3C		1/10/2019																																		
4-0.0	0	0.1	AREA 2 / AREA 3B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
4-0.35	0.35	0.35	AREA 2		1/10/2019																																		
5-0.0	0	0.1	AREA 2 / AREA 3B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
5-0.35	0.35	0.35	AREA 2		1/10/2019																																		
6-0.0	0	0.1	AREA 3A		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
6-0.45	0.45	0.45	AREA 2	Slag	1/10/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.1	<0.4	<5	11	32	<0.1	5.8	72																		
6P-0.0 (HA02)	0	0.1	AREA 3C		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
6P-0.3 (HA02)	0.3	0.3	AREA 3C		1/10/2019																																		
7-0.0	0	0.1	AREA 3A		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
7-0.45	0.45	0.45	AREA 2	Slag	1/10/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.4	<5	12	19	<0.1	5.8	51																		
7P-0.0 (HA03)	0	0.1	AREA 3C		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
7P-0.25 (HA03)	0.25	0.25	AREA 3C		1/10/2019																																		
8-0.0	0	0	AREA 1B / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
8-0.42	0.42	0.42	AREA 1		1/10/2019																																		
9-0.0	0	0.1	AREA 1B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
9-0.42	0.42	0.42	AREA 1		1/10/2019																																		
9P-0.0 (HA09)	0	0.1	AREA 1B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
9P-0.45 (HA09)	0.45	0.45	AREA 1		1/10/2019																																		
10-0.0	0	0.1	AREA 1B / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
10-0.45	0.45	0.45	AREA 1		1/10/2019																																		
11-0.0	0	0.1	AREA 1A		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
11-0.45	0.45	0.45	AREA 1A / AREA 1		1/10/2019																																		
12-0.0	0	0.1	AREA 1A / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
12-0.25	0.25	0.25	AREA 1		1/10/2019																																		
13P-0.0 (HA07)	0	0.1	AREA 1B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
13P-0.2 (HA07)	0.2	0.2	AREA 1B		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
14-0.0	0	0.1	AREA 1A / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
14-0.45	0.45	0.45	AREA 1		1/10/2019																																		
14P-0.0 (HA10)	0	0.1	AREA 1A		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
QC07 (DUP 14P-0.0)	0	0.1	AREA 1A		1/10/2019																																		
QC08 (TRIP 14P-0.0)	0	0.1	AREA 1A		1/10/2019																																		
14P-0.42 (HA10)	0.42	0.42	AREA 1		1/10/2019																																		
QC09 (DUP 14P-0.42)	0	0.1	AREA 2		1/10/2019																																		
QC10 (TRIP 14P-0.42)	0	0.1	AREA 2		1/10/2019																																		
15-0.0	0	0.1	AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		
16-0.0	0	0.1	AREA 1B / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																		

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Area	Anthropogenic Materials	Sampled_Date	H)								Metals								TRH				BTEX								Other						
						Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Chromium (hexavalent)	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH					
Units	-	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg									
EQL	-	-	-		-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5	1																		
EIL - Res/Open Space										170				100		245	196	1112		287	420		180	120	300	2800														
HIL-A Residential											300			100	20	100	6000	300	10	400	7400	100	45	110	2500	10000														
HIL-C Recreational											300			300	90	300	17000	600	13	1200	30000	300	NL	NL	2500	10000														
16-0.45	0.45	0.45	AREA 1		1/10/2019																																			
17-0.0	0	0.1	AREA 2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
17-0.25	0.25	0.25	AREA 2		1/10/2019																																			
18-0.0	0	0.1	AREA 1C / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
18-0.2	0.2	0.2	AREA 1C / AREA 1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
32-0.0	0	0.1	AREA 2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
34-0.0	0	0.1	AREA 1C		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
36-0.0	0	0.1	AREA 2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			
BH01_0.1	0.1	0.1	Area 4A		3/09/2021									<2	<0.4	45	6.1	5.6	<0.1	22	22																			
BH02_0.1	0.1	0.1	Area 4A		3/09/2021									<2	<0.4	37	<5	<5	<0.1	18	16																			
BH03_0.1	0.1	0.1	Area 4A		3/09/2021									6.5	<0.4	70	6.6	40	<0.1	22	29																			
BH04_0.1	0.1	0.1	Area 4A		3/09/2021									3.4	<0.4	49	<5	<5	<0.1	9.2	16																			
BH05_0.1	0.1	0.1	Area 4A		3/09/2021									12	<0.4	75	7.1	5.5	<0.1	14	19																			
BH06_0.1	0.1	0.1	Area 4B		3/09/2021									4.6	<0.4	5.6	6.4	6.6	<0.1	<5	19																			
BH06_0.3	0.3	0.3	Area 4B	Ash, slag fragments	3/09/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.7	<0.4	13	5.9	11	<0.1	<5	24																			
BH06_0.5	0.5	0.5	Area 4B		3/09/2021									8.8	<0.4	150	21	<5	<0.1	45	27																			
BH07_0.1	0.1	0.1	Area 4B		3/09/2021									7	<0.4	5.6	7.4	6.6	<0.1	<5	19																			
BH07_0.3	0.3	0.3	Area 4B		3/09/2021									8.7	<0.4	170	10	6.7	<0.1	30	32																			
BH08_0.1	0.1	0.1	Area 4B		3/09/2021									4.6	<0.4	100	6.7	<5	<0.1	15	14																			
BH08_0.3	0.3	0.3	AREA 1		3/09/2021									3.7	<0.4	110	11	<5	<0.1	26	20																			
BH12_0.1	0.1	0.1	AREA 2		3/09/2021									6.4	0.9	79	21	54	<0.1	66	160																			
BH13_0.1	0.1	0.1	AREA 1B		3/09/2021									10	0.5	73	30	110	<0.1	25	250																			
BH14_0.1	0.1	0.1	AREA 1A		3/09/2021									7.7	<0.4	16	13	120	<0.1	6.9	210																			
BH14_0.3	0.3	0.3	AREA 1		3/09/2021									6.1	<0.4	6.7	7.8	33	<0.1	<5	48																			
BH14_0.5	0.5	0.5	AREA 1		3/09/2021									2.1	<0.4	59	6.7	6.7	<0.1	17	20																			
BH15_0.1	0.1	0.1	AREA 1B		3/09/2021									7.3	<0.4	32	25	160	<0.1	13	250																			
BH15_0.3	0.3	0.3	AREA 1		3/09/2021									6.7	<0.4	67	8.6	9.8	<0.1	14	26																			
BH15_0.5	0.5	0.5	AREA 1		3/09/2021									6.8	<0.4	66	11	<5	<0.1	15	18																			
BH16_0.1	0.1	0.1	Area 4B		3/09/2021									19	<0.4	30	20	160	<0.1	9.5	320																			
BH16_0.3	0.3	0.3	Area 4B		3/09/2021									11	<0.4	79	12	47	<0.1	21	53																			
BH16_0.5	0.5	0.5	Area 4B		3/09/2021									12	<0.4	150	20	9.7	<0.1	45	43																			
BH17_0.1	0.1	0.1	AREA 2		3/09/2021									4.1	<0.4	45	20	65	<0.1	21	75																			
BH17_0.3	0.3	0.3	AREA 2	Ash, slag	3/09/202																																			

DVA Greenslopes Soil Data Table - NEPM HIL-A and HIL-C

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Area	Anthropogenic Materials	Sampled_Date	H)								Metals								TRH				BTEX								Other			
						Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Chromium (hexavalent)	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH		
Units	-	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg								
EQL	-	-	-		-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5	1															
EIL - Res/Open Space			-							170				100		245	196	1112		287	420		180	120	300	2800											
HIL-A Residential			-								300			100	20	100	6000	300	10	400	7400	100	45	110	2500	10000											
HIL-C Recreational			-								300			300	90	300	17000	600	13	1200	30000	300	NL	NL	2500	10000											
QC01_210903 (DUP BH19_0.3)	0.3	0.3	AREA 2	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.4	39	15	65	<0.1	9.7	62																
QC02_210903 (TRIP BH19_0.3)	0.3	0.3	AREA 2	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<5	<1	16	14	86	<0.1	8	64																
BH19_0.5	0.5	0.5	AREA 2		3/09/2021									2.2	<0.4	73	7.6	11	<0.1	14	21																
BH20_0.1	0.1	0.1	AREA 1		3/09/2021									3.3	<0.4	48	32	68	<0.1	9.9	88																
BH20_0.3	0.3	0.3	AREA 1		3/09/2021									3.4	<0.4	72	20	20	<0.1	22	39																
BH20_0.5	0.5	0.5	AREA 1		3/09/2021									3.2	<0.4	100	18	<5	<0.1	41	27																
BH21_0.1	0.1	0.1	AREA 1B		3/09/2021									<2	<0.4	7.8	<5	8.5	<0.1	<5	31																
BH21_0.3	0.3	0.3	AREA 1		3/09/2021									12	<0.4	170	30	120	<0.1	61	160																
BH21_0.5	0.5	0.5	AREA 1		3/09/2021									11	<0.4	180	28	<5	<0.1	84	34																
MW01 - 0.1	0.1	0.1	AREA 1		17/11/2021																																
MW01 - 0.25	0.25	0.25	AREA 1		17/11/2021									9.9	<0.4	6.5	25	21	<0.1	7.8	80	<1										17	5.5				
MW01 - 0.50	0.5	0.5	AREA 1		17/11/2021									<2	<0.4	89	9.3	<5	<0.1	23	19	<1															
MW01_0.75	0.75	0.75	AREA 1		17/11/2021									3.5	<0.5	120	24	<5	<0.1	52	30	<1										33	6.6				
MW01_1.0	1	1	AREA 1		17/11/2021									3.5	<0.5	100	21	<5	<0.1	54	25	<1															
SLAG-1	SLAG-1	SLAG-1	SLAG		3/09/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.4	<5	<5	10	<0.1	<5	19	<1															
SLAG-2	SLAG-2	SLAG-2	SLAG		3/09/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<1															
BH01_CONCRETE	CONCRETE	CONCRETE	Area 4A		3/09/2021																																
BH03_CONCRETE	CONCRETE	CONCRETE	Area 4A		3/09/2021																																
BH05_CONCRETE	CONCRETE	CONCRETE	Area 4A		3/09/2021																																
BH06_CONCRETE	CONCRETE	CONCRETE	Area 4B		3/09/2021																																
BH07_CONCRETE	CONCRETE	CONCRETE	Area 4B		3/09/2021																																
BH08_CONCRETE	CONCRETE	CONCRETE	Area 4B		3/09/2021																																
BH09_CONCRETE	CONCRETE	CONCRETE	AREA 1		3/09/2021																																
BH10_CONCRETE	CONCRETE	CONCRETE	AREA 1B		3/09/2021																																
BH11_CONCRETE	CONCRETE	CONCRETE	AREA 1		3/09/2021																																
BH21_CONCRETE	CONCRETE	CONCRETE	AREA 1B		3/09/2021																																

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					Asbestos (ID)	ACM (w/w)	Asbestos Fines (w/w)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Azinphos methyl	Boister (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Counaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Units	-	-		-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	

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SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
					Asbestos (ID)	ACM (w/w)	Asbestos Fines (w/w)	4,4-DDE	α-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	chlordane	δ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Azinophos methyl	Edistar (Suprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Units	-	-		-	-	-		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Organophosphate Pesticides																		Polyaromatic Hydrocarbons (PAH)																											
					Disulfoton	EPN	Ethion	Ethoprop	Ethyl parathion	Fenitrothion	Fensulfthion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pirimiphos-methyl	Pyrazophos	Rommel	Terbufos	Tetrachlorvinphos	Trichloronate	Toluthion	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene						
Units	-	-		-	mg/kg		mg/kg	mg/kg		mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg		mg/kg		mg/kg			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
EQL	-	-		-																																														
HIL-D Commercial/Industrial																																																		
SS01	0	0.1	ACM	16/07/2013	<0.2		<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			
SS02	0	0.1	ACM	16/07/2013	<0.2		<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SS03	0	0.1		16/07/2013	<0.2		<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SS04	0	0.1		16/07/2013	<0.2		<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SA01/A01	0	0.1	ACM	25/09/2013																																														
SA02/A02	0	0.1		25/09/2013																																														
SA03/A03	0	0.1		25/09/2013																																														
SA04/A04	0	0.1	Slag, Brick	25/09/2013																																														
SA05/A05	0	0.1	Slag	25/09/2013																																														
SA06/A06	0	0.1	Slag	25/09/2013																																														
SA06/A06	0.3	0.4	Slag	25/09/2013																																														
SA07/A07	0	0.1		25/09/2013																																														
SA08/A08	0	0.1	Slag, Concrete, Wood	25/09/2013																																														
SA09/A09	0	0.1		25/09/2013																																														
SA10/A10	0	0.1	Slag	25/09/2013																																														
SA11/A11	0	0.1		25/09/2013																																														
SA13/A13	0	0.1		25/09/2013																																														
Main Hall (under building)	0	0	ACM	25/09/2013																																														
Accomodation Building (under building)	0	0	ACM	25/09/2013																																														
Unsealed External Areas	0	0.01		25/09/2013																																														
A01, A04, A10	0.15	0.15		25/09/2013																																														
A06, A10	0.15	0.15		25/09/2013																																														
HA01	0	0.1		25/09/2013																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
HA02	0	0.1		25/09/2013																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
HA03	0	0.1		25/09/2013																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
HA04	0	0.1		25/09/2013																					-	-	-	-	-	-	-	-	-	-	-	-	-													

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Organophosphate Pesticides																		Polyaromatic Hydrocarbons (PAH)																								
					Disulfoton	EPN	Ethion	Ethoprop	Ethyl parathion	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Primiphos-methyl	Pyrazophos	Romel	Terbufos	Tetrachlorvinphos	Trichloronate	Toluthion	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene			
Units	-	-		-	mg/kg		mg/kg	mg/kg		mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg		mg/kg		mg/kg				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
EQL	-	-		-																mg/kg						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
HIL-D Commercial/Industrial																									40	40	40																				
BH21_0.3	0.3	0.3		3/09/2021																																											
BH21_0.5	0.5	0.5		3/09/2021																																											
SLAG-1	SLAG-1	SLAG-1		3/09/2021																						0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SLAG-2	SLAG-2	SLAG-2		3/09/2021																						0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH01_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH03_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH05_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH06_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH07_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH08_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH09_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH10_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH11_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											
BH21_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																											

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date				Metals							TRH				BTEX							Other			
					PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH	
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
EQL	-	-		-	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5														
HIL-D Commercial/Industrial					4000			3,000	900	3,600	240,000	1,500	730	6,000	400,000														
SS01	0	0.1	ACM	16/07/2013	<0.5	<0.5	<0.5	32	0.7	54	21	39	<0.1	35	760	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3				
SS02	0	0.1	ACM	16/07/2013	<0.5	<0.5	<0.5	10	1.4	12	27	100	<0.1	8.4	2000	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3				
SS03	0	0.1		16/07/2013	<0.5	<0.5	<0.5	16	0.4	42	20	75	<0.1	18	190	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3				
SS04	0	0.1		16/07/2013	<0.5	<0.5	<0.5	10	0.6	22	33	72	<0.1	11	250	<20	<50	260	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3				
SA01/A01	0	0.1	ACM	25/09/2013																									
SA02/A02	0	0.1		25/09/2013																									
SA03/A03	0	0.1		25/09/2013																									
SA04/A04	0	0.1	Slag, Brick	25/09/2013																									
SA05/A05	0	0.1	Slag	25/09/2013																									
SA06/A06	0	0.1	Slag	25/09/2013																									
SA06/A06	0.3	0.4	Slag	25/09/2013																									
SA07/A07	0	0.1		25/09/2013																									
SA08/A08	0	0.1	Slag, Concrete, Wood	25/09/2013																									
SA09/A09	0	0.1		25/09/2013																									
SA10/A10	0	0.1	Slag	25/09/2013																									
SA11/A11	0	0.1		25/09/2013																									
SA13/A13	0	0.1		25/09/2013																									
Main Hall (under building)	0	0	ACM	25/09/2013																									
Accomodation Building (under building)	0	0	ACM	25/09/2013																									
Unsealed External Areas	0	0.01		25/09/2013																									
A01, A04, A10	0.15	0.15		25/09/2013																									
A06, A10	0.15	0.15		25/09/2013																									
HA01	0	0.1		25/09/2013	-	-	-	9.3	< 0.4	39	8.1	7.3	< 0.1	20	64														
HA02	0	0.1		25/09/2013	-	-	-	14	< 0.4	44	6.4	15	< 0.1	24	44														
HA03	0	0.1		25/09/2013	-	-	-	20	< 0.4	69	12	27	< 0.1	25	92														
HA04	0	0.1		25/09/2013	-	-	-	14	< 0.4	54	11	14	< 0.1	16	26														
HA05	0	0.1		25/09/2013	-	-	-	17	< 0.4	66	9.2	10	< 0.1	19	45														
QC01 (DUP HA05)	0	0.1		26/09/2013				21	< 0.4	73	10	16	< 0.1	20	54														
QC01A (TRIP HA05)	0	0.1		26/09/2013				11	< 0.4	90	12	20	< 0.1	27	74														
HA06/SA11	0	0.1		25/09/2013	-	-	-	22	< 0.4	88	9.3	13	< 0.1	19	41														
HA07/SA12	0	0.1		25/09/2013	-	-	-	15	< 0.4	43	13	63	< 0.1	15	140											30	5.8		
HA08/SA13	0	0.1		25/09/2013	-	-	-	10	< 0.4	39	14	50	< 0.1	11	72														
HA09	0	0.2		25/09/2013	-	-	-	10	< 0.4	25	24	120	0.1	8.8	380														
HA10	0	0.2	Slag, Coal	25/09/2013	-	-	-	19	< 0.4	22	19	120	< 0.1	8.7	330														
HA11	0	0.1		25/09/2013	-	-	-	23	< 0.4	50	15	140	< 0.1	13	450											25	6.3		
1-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-														
1-0.3	0.3	0.3		1/10/2019																									
2-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-														
QC01 (DUP 2-0.0)	0	0.1		1/10/2019																									
QC02 (TRIP 2-0.0)	0	0.1		1/10/2019																									
2-0.3	0.3	0.3		1/10/2019																									
QC03 (DUP 2-0.3)	0.3	0.3		1/10/2019																									
QC04 (TRIP 2-0.3)	0.3	0.3		1/10/2019																									

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date				Metals								TRH				BTEX								Other			
					PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH			
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
EQL	-	-		-	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5																
HIL-D Commercial/Industrial					4000			3,000	900	3,600	240,000	1,500	730	6,000	400,000																
3-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
3-0.35	0.35	0.35		1/10/2019																											
4-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
4-0.35	0.35	0.35		1/10/2019																											
5-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
5-0.35	0.35	0.35		1/10/2019																											
6-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
6-0.45	0.45	0.45	Slag	1/10/2019	<0.5	<0.5	<0.5	2.1	<0.4	<5	11	32	<0.1	5.8	72																
6P-0.0 (HA02)	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
6P-0.3 (HA02)	0.3	0.3		1/10/2019																											
7-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
7-0.45	0.45	0.45	Slag	1/10/2019	<0.5	<0.5	<0.5	2.6	<0.4	<5	12	19	<0.1	5.8	51																
7P-0.0 (HA03)	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
7P-0.25 (HA03)	0.25	0.25		1/10/2019																											
8-0.0	0	0		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
8-0.42	0.42	0.42		1/10/2019																											
9-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
9-0.42	0.42	0.42		1/10/2019																											
9P-0.0 (HA09)	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
9P-0.45 (HA09)	0.45	0.45		1/10/2019																											
10-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
10-0.45	0.45	0.45		1/10/2019																											
11-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
11-0.45	0.45	0.45		1/10/2019																											
12-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
12-0.25	0.25	0.25		1/10/2019																											
13P-0.0 (HA07)	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
13P-0.2 (HA07)	0.2	0.2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
14-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
14-0.45	0.45	0.45		1/10/2019																											
14P-0.0 (HA10)	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
QC07 (DUP 14P-0.0)	0	0.1		1/10/2019																											
QC08 (TRIP 14P-0.0)	0	0.1		1/10/2019																											
14P-0.42 (HA10)	0.42	0.42		1/10/2019																											
QC09 (DUP 14P-0.42)	0	0.1		1/10/2019																											
QC10 (TRIP 14P-0.42)	0	0.1		1/10/2019																											
15-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
16-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
16-0.45	0.45	0.45		1/10/2019																											
17-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
17-0.25	0.25	0.25		1/10/2019																											
18-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
18-0.2	0.2	0.2		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date				Metals								TRH				BTEX							Other				
					PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH			
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
EQL	-	-		-	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5																
HIL-D Commercial/Industrial					4000			3,000	900	3,600	240,000	1,500	730	6,000	400,000																
32-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
34-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
36-0.0	0	0.1		1/10/2019	-	-	-	-	-	-	-	-	-	-	-																
BH01_0.1	0.1	0.1		3/09/2021				<2	<0.4	45	6.1	5.6	<0.1	22	22																
BH02_0.1	0.1	0.1		3/09/2021				<2	<0.4	37	<5	<5	<0.1	18	16																
BH03_0.1	0.1	0.1		3/09/2021				6.5	<0.4	70	6.6	40	<0.1	22	29																
BH04_0.1	0.1	0.1		3/09/2021				3.4	<0.4	49	<5	<5	<0.1	9.2	16																
BH05_0.1	0.1	0.1		3/09/2021				12	<0.4	75	7.1	5.5	<0.1	14	19																
BH06_0.1	0.1	0.1		3/09/2021				4.6	<0.4	5.6	6.4	6.6	<0.1	<5	19																
BH06_0.3	0.3	0.3	Ash, slag fragments	3/09/2021	<0.5	<0.5	<0.5	5.7	<0.4	13	5.9	11	<0.1	<5	24																
BH06_0.5	0.5	0.5		3/09/2021				8.8	<0.4	150	21	<5	<0.1	45	27																
BH07_0.1	0.1	0.1		3/09/2021				7	<0.4	5.6	7.4	6.6	<0.1	<5	19																
BH07_0.3	0.3	0.3		3/09/2021				8.7	<0.4	170	10	6.7	<0.1	30	32																
BH08_0.1	0.1	0.1		3/09/2021				4.6	<0.4	100	6.7	<5	<0.1	15	14																
BH08_0.3	0.3	0.3		3/09/2021				3.7	<0.4	110	11	<5	<0.1	26	20																
BH12_0.1	0.1	0.1		3/09/2021				6.4	0.9	79	21	54	<0.1	66	160																
BH13_0.1	0.1	0.1		3/09/2021				10	0.5	73	30	110	<0.1	25	250																
BH14_0.1	0.1	0.1		3/09/2021				7.7	<0.4	16	13	120	<0.1	6.9	210																
BH14_0.3	0.3	0.3		3/09/2021				6.1	<0.4	6.7	7.8	33	<0.1	<5	48																
BH14_0.5	0.5	0.5		3/09/2021				2.1	<0.4	59	6.7	6.7	<0.1	17	20																
BH15_0.1	0.1	0.1		3/09/2021				7.3	<0.4	32	25	160	<0.1	13	250																
BH15_0.3	0.3	0.3		3/09/2021				6.7	<0.4	67	8.6	9.8	<0.1	14	26																
BH15_0.5	0.5	0.5		3/09/2021				6.8	<0.4	66	11	<5	<0.1	15	18																
BH16_0.1	0.1	0.1		3/09/2021				19	<0.4	30	20	160	<0.1	9.5	320																
BH16_0.3	0.3	0.3		3/09/2021				11	<0.4	79	12	47	<0.1	21	53																
BH16_0.5	0.5	0.5		3/09/2021				12	<0.4	150	20	9.7	<0.1	45	43																
BH17_0.1	0.1	0.1		3/09/2021				4.1	<0.4	45	20	65	<0.1	21	75																
BH17_0.3	0.3	0.3	Ash, slag	3/09/2021				3.1	<0.4	8.9	23	75	<0.1	5.1	130																
QC09_210903 (DUP BH17_0.3)	0.3	0.3	Ash, slag	3/09/2021				4	<0.4	8.9	15	78	<0.1	<5	120																
QC10_210903 (TRIP BH17_0.3)	0.3	0.3	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	<5	<1	6	74	87	<0.1	9	131																
BH17_0.5	0.5	0.5	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	<2	<0.4	<5	16	8	<0.1	<5	14																
BH18_0.1	0.1	0.1		3/09/2021				5	<0.4	51	18	37	<0.1	25	79																
BH18_0.3	0.3	0.3	Ash, slag	3/09/2021				<2	<0.4	24	22	29	<0.1	15	39																
BH18_0.5	0.5	0.5	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	23	<0.4	39	14	27	<0.1	14	31																
BH19_0.1	0.1	0.1		3/09/2021				5.5	<0.4	21	19	76	<0.1	9.4	97																
BH19_0.3	0.3	0.3	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	3.5	<0.4	53	25	110	<0.1	20	100																
QC01_210903 (DUP BH19_0.3)	0.3	0.3	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	2.6	<0.4	39	15	65	<0.1	9.7	62																
QC02_210903 (TRIP BH19_0.3)	0.3	0.3	Ash, slag	3/09/2021	<0.5	<0.5	<0.5	<5	<1	16	14	86	<0.1	8	64																
BH19_0.5	0.5	0.5		3/09/2021				2.2	<0.4	73	7.6	11	<0.1	14	21																
BH20_0.1	0.1	0.1		3/09/2021				3.3	<0.4	48	32	68	<0.1	9.9	88																
BH20_0.3	0.3	0.3		3/09/2021				3.4	<0.4	72	20	20	<0.1	22	39																
BH20_0.5	0.5	0.5		3/09/2021				3.2	<0.4	100	18	<5	<0.1	41	27																
BH21_0.1	0.1	0.1		3/09/2021				<2	<0.4	7.8	<5	8.5	<0.1	<5	31																

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date				Metals							TRH				BTEX							Other			
					PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH	
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
EQL	-	-		-	0.5	0.5	0.5	2	0.4	5	5	5	0.1	5	5														
HIL-D Commercial/Industrial					4000			3,000	900	3,600	240,000	1,500	730	6,000	400,000														
BH21_0.3	0.3	0.3		3/09/2021				12	<0.4	170	30	120	<0.1	61	160														
BH21_0.5	0.5	0.5		3/09/2021				11	<0.4	180	28	<5	<0.1	84	34														
SLAG-1	SLAG-1	SLAG-1		3/09/2021	<0.5	<0.5	<0.5	<2	<0.4	<5	<5	10	<0.1	<5	19														
SLAG-2	SLAG-2	SLAG-2		3/09/2021	<0.5	<0.5	<0.5	<2	<0.4	<5	<5	<5	<0.1	<5	<5														
BH01_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH03_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH05_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH06_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH07_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH08_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH09_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH10_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH11_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									
BH21_CONCRETE	CONCRETE	CONCRETE		3/09/2021																									

DVA Greenslopes Soil Data - TCLP

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Sampled_Date	Organochlorine Pesticides																				Metals							
				4,4'-DDD	4,4'-DDE	4,4'-DDT	a-HCH	Aldrin	Aldrin + Dieldrin	b-HCH	Chlordane - Total	DDT + DDE + DDD	d-HCH	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-HCH (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total)*	Chromium	Lead	Zinc
Units	-	-	-	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA						2		0.01			0.06	0.03		0.01				0.01			2	0.03			1	0.05			5	5	500
BH06_0.5	0.5																											< 0.01			
BH07_0.3	0.3																											< 0.01			
BH08_0.3	0.3																											< 0.01			
BH13_0.1	0.1																												0.11	0.9	
BH14_0.1	0.1			<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.005	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005		0.1	1.1	
BH14_0.3	0.3			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
BH15_0.1	0.1																												0.07	0.66	
BH16_0.1	0.1																												0.12	0.84	
BH16_0.5	0.5																											< 0.01			
BH19_0.3	0.3																												0.03	0.25	
BH21_0.1	0.1			<0.001	<0.001	<0.001	<0.001	0.002	0.006	<0.001	<0.005	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.006	<0.005				
BH21_0.3	0.3			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	< 0.01	< 0.01	0.06	
BH21_0.5	0.5																											< 0.01			
BH21_CONCRETE	CONCRETE			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
6P-0.0 (HA02)	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
7P-0.0 (HA03)	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
8-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.005	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
9-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	<0.001	<0.005	<0.001	<0.001	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.01	<0.005				
9P-0.0 (HA09)	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.005	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
10-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.005	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
11-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	<0.005	<0.001	<0.001	0.02	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.02	<0.005				
13P-0.0 (HA07)	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
14P-0.0 (HA10)	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.005	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
15-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.005	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				
34-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.012	<0.001	<0.005	<0.001	<0.001	0.012	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.012	<0.005				
36-0.0	0	0	1/10/2019	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.005	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005				

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DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																						Organophosphorus Pesticides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					Asbestos (ID)	ACM (w/w)	Asbestos Fines (w/w)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Azinophos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Counaphos	Demeton-O	Demeton-S	Dezinon	Deltameth	Disulfoton	EPN	Ethion	Ethoprop	Ethyl parathion																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Units	-	-		-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																				Organophosphorus Pesticides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					Asbestos (ID)	ACM (w/w)	Asbestos Fines (w/w)	4,4'-DDE	α-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	γ-chlordane	δ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Azinphos methyl	Boislar (Sulphos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Counaphos	Demeton-O	Demeton-S	Dezinon	Deltameth	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Ethyl parathion																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Units	-	-		-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	Asbestos			Organochlorine Pesticides																						Organophosphorus Pesticides																					
					Asbestos (ID)	ACM (w/w)	Asbestos Fines (w/w)	4,4'-DDE	α-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	chlordane	δ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Total OCP	Azinphos methyl	Boistar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Ethyl parathion				
Units	-	-		-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA																															50																				
BH01_CONCRETE	CONCRETE	CONCRETE		3/09/2021				<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1																			
BH03_CONCRETE	CONCRETE	CONCRETE		3/09/2021				<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1																		
BH05_CONCRETE	CONCRETE	CONCRETE		3/09/2021				1.6	<0.05	<0.05	0.13	<0.05	<0.1	<0.05	0.28	0.33	2.21	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	2.34																		
BH06_CONCRETE	CONCRETE	CONCRETE		3/09/2021				<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1																		
BH07_CONCRETE	CONCRETE	CONCRETE		3/09/2021				<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1																		
BH08_CONCRETE	CONCRETE	CONCRETE		3/09/2021				<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1																		
Accommodation Building (under building)	0	0	ACM	25/09/2013		0.0303%																																													
Unsealed External Areas	0	0.01		25/09/2013		0.0084%																																													
A01, A04, A10	0.15	0.15		25/09/2013		0.0090%																																													
A06, A10	0.15	0.15		25/09/2013		0.0038%																																													

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

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SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	anophosphate Pesticides																	Polyaromatic Hydrocarbons (PAH)																	Metals										
					Fenitrothion	Fensulfotion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Priniphos-methyl	Pyrazophos	Ronnel	Terbufos	Tetrachlorvinphos	Trichloronate	Tokuthion	Total OPP	Benzo(e)pyrene TEQ calc (Half)	Benzo(e)pyrene TEQ (LOR)	Benzo(e)pyrene TEQ calc (Zero)	Benzo(b+)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (II+VI)	Copper	Lead	Mercury
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA																				50																													
9P-0.0 (HA09)	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
15-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
11-0.45	0.45	0.45		1/10/2019																																													
13P-0.2 (HA07)	0.2	0.2		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
10-0.45	0.45	0.45		1/10/2019																																													
SS04	0	0.1		16/07/2013	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	<LOR	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	0.6	22	33	72	<0.1		
BH14_0.1	0.1	0.1		3/09/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<LOR																														
5-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
13P-0.0 (HA07)	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
SS01	0	0.1	ACM	16/07/2013	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.5		<0.2			<0.2	<0.2	<LOR	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	32	0.7	54	21	39	<0.1		
6-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
18-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
QC02 (TRIP 2-0.0)	0	0.1		1/10/2019																																													
HA06/SA11	0	0.1		25/09/2013																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	< 0.4	88	9.3	13	< 0.1	
9-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
HA04	0	0.1		25/09/2013																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	< 0.4	54	11	14	< 0.1
12-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
QC09 (DUP 14P-0.42)	0	0.1		1/10/2019																																													
6P-0.0 (HA02)	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
11-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
14P-0.42 (HA10)	0.42	0.42		1/10/2019																																													
QC10 (TRIP 14P-0.42)	0	0.1		1/10/2019																																													
3-0.0	0	0.1		1/10/2019																	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

[illegible]

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date	anophosphate Pesticides																Polyaromatic Hydrocarbons (PAH)																Metals											
					Fenitrothion	Fensulfotthion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Primiphos-methyl	Pyrazophos	Ronnel	Terbufos	Tetrachlorvinphos	Trichloronate	Tokuthion	Total OPP	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+h)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium (II+VI)	Copper	Lead
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA																				50																												
BH01_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
BH03_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
BH05_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
BH06_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
BH07_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
BH08_CONCRETE	CONCRETE	CONCRETE		3/09/2021																																												
Accomodation Building (under building)	0	0	ACM	25/09/2013																																												
Unsealed External Areas	0	0.01		25/09/2013																																												
A01, A04, A10	0.15	0.15		25/09/2013																																												
A06, A10	0.15	0.15		25/09/2013																																												

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date			TRH				BTEX						Other		
					Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA											20	600	1000			500	1000		
QC01A (TRIP HA05)	0	0.1		26/09/2013	27	74													
1-0.3	0.3	0.3		1/10/2019															
QC03 (DUP 2-0.3)	0.3	0.3		1/10/2019															
3-0.35	0.35	0.35		1/10/2019															
4-0.35	0.35	0.35		1/10/2019															
5-0.35	0.35	0.35		1/10/2019															
14-0.45	0.45	0.45		1/10/2019															
16-0.45	0.45	0.45		1/10/2019															
17-0.25	0.25	0.25		1/10/2019															
BH08_0.3	0.3	0.3		3/09/2021	26	20													
BH15_0.3	0.3	0.3		3/09/2021	14	26													
BH15_0.5	0.5	0.5		3/09/2021	15	18													
BH17_0.1	0.1	0.1		3/09/2021	21	75													
BH17_0.3	0.3	0.3	Ash, slag	3/09/2021	5.1	130													
QC09_210903 (DUP BH17_0.3)	0.3	0.3	Ash, slag	3/09/2021	<5	120													
QC10_210903 (TRIP BH17_0.3)	0.3	0.3	Ash, slag	3/09/2021	9	131													
BH17_0.5	0.5	0.5	Ash, slag	3/09/2021	<5	14													
BH18_0.1	0.1	0.1		3/09/2021	25	79													
BH18_0.3	0.3	0.3	Ash, slag	3/09/2021	15	39													
BH18_0.5	0.5	0.5	Ash, slag	3/09/2021	14	31													
BH19_0.1	0.1	0.1		3/09/2021	9.4	97													
BH19_0.3	0.3	0.3	Ash, slag	3/09/2021	20	100													
QC01_210903 (DUP BH19_0.3)	0.3	0.3	Ash, slag	3/09/2021	9.7	62													
HA02	0	0.1		25/09/2013	24	44													
HA03	0	0.1		25/09/2013	25	92													
QC02_210903 (TRIP BH19_0.3)	0.3	0.3	Ash, slag	3/09/2021	8	64													
BH19_0.5	0.5	0.5		3/09/2021	14	21													
BH20_0.1	0.1	0.1		3/09/2021	9.9	88													
BH20_0.3	0.3	0.3		3/09/2021	22	39													
BH20_0.5	0.5	0.5		3/09/2021	41	27													
BH09_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH10_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
HA09	0	0.2		25/09/2013	8.8	380													
HA10	0	0.2	Slag, Coal	25/09/2013	8.7	330													
BH11_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
HA11	0	0.1		25/09/2013	13	450											25	6.3	
HA01	0	0.1		25/09/2013	20	64													
HA07/SA12	0	0.1		25/09/2013	15	140											30	5.8	
10-0.0	0	0.1		1/10/2019	-	-													
32-0.0	0	0.1		1/10/2019	-	-													
8-0.0	0	0		1/10/2019	-	-													
7-0.0	0	0.1		1/10/2019	-	-													
SS02	0	0.1	ACM	16/07/2013	8.4	2000	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3			
36-0.0	0	0.1		1/10/2019	-	-													
BH12_0.1	0.1	0.1		3/09/2021	66	160													

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date			TRH				BTEX						Other		
					Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA											20	600	1000			500	1000		
9P-0.0 (HA09)	0	0.1		1/10/2019	-	-													
15-0.0	0	0.1		1/10/2019	-	-													
11-0.45	0.45	0.45		1/10/2019															
13P-0.2 (HA07)	0.2	0.2		1/10/2019	-	-													
10-0.45	0.45	0.45		1/10/2019															
SS04	0	0.1		16/07/2013	11	250	<20	<50	260	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3			
BH14_0.1	0.1	0.1		3/09/2021	6.9	210													
5-0.0	0	0.1		1/10/2019	-	-													
13P-0.0 (HA07)	0	0.1		1/10/2019	-	-													
SS01	0	0.1	ACM	16/07/2013	35	760	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3			
6-0.0	0	0.1		1/10/2019	-	-													
18-0.0	0	0.1		1/10/2019	-	-													
QC02 (TRIP 2-0.0)	0	0.1		1/10/2019															
HA06/SA11	0	0.1		25/09/2013	19	41													
9-0.0	0	0.1		1/10/2019	-	-													
2-0.0	0	0.1		1/10/2019	-	-													
HA04	0	0.1		25/09/2013	16	26													
12-0.0	0	0.1		1/10/2019	-	-													
QC09 (DUP 14P-0.42)	0	0.1		1/10/2019															
6P-0.0 (HA02)	0	0.1		1/10/2019	-	-													
11-0.0	0	0.1		1/10/2019	-	-													
4-0.0	0	0.1		1/10/2019	-	-													
14P-0.42 (HA10)	0.42	0.42		1/10/2019															
QC10 (TRIP 14P-0.42)	0	0.1		1/10/2019															
3-0.0	0	0.1		1/10/2019	-	-													
7P-0.0 (HA03)	0	0.1		1/10/2019	-	-													
QC01 (DUP 2-0.0)	0	0.1		1/10/2019															
SS03	0	0.1		16/07/2013	18	190	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3			
14P-0.0 (HA10)	0	0.1		1/10/2019	-	-													
QC07 (DUP 14P-0.0)	0	0.1		1/10/2019															
QC08 (TRIP 14P-0.0)	0	0.1		1/10/2019															
1-0.0	0	0.1		1/10/2019	-	-													
BH21_0.3	0.3	0.3		3/09/2021	61	160													
16-0.0	0	0.1		1/10/2019	-	-													
8-0.42	0.42	0.42		1/10/2019															
17-0.0	0	0.1		1/10/2019	-	-													
BH14_0.3	0.3	0.3		3/09/2021	<5	48													
6-0.45	0.45	0.45	Slag	1/10/2019	5.8	72													
BH21_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
7-0.45	0.45	0.45	Slag	1/10/2019	5.8	51													
12-0.25	0.25	0.25		1/10/2019															
7P-0.25 (HA03)	0.25	0.25		1/10/2019															
34-0.0	0	0.1		1/10/2019	-	-													
9-0.42	0.42	0.42		1/10/2019															

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date			TRH				BTEX						Other		
					Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA											20	600	1000			500	1000		
BH01_0.1	0.1	0.1		3/09/2021	22	22													
BH02_0.1	0.1	0.1		3/09/2021	18	16													
BH03_0.1	0.1	0.1		3/09/2021	22	29													
BH04_0.1	0.1	0.1		3/09/2021	9.2	16													
BH05_0.1	0.1	0.1		3/09/2021	14	19													
BH06_0.1	0.1	0.1		3/09/2021	<5	19													
BH06_0.3	0.3	0.3	Ash, slag fragments	3/09/2021	<5	24													
BH06_0.5	0.5	0.5		3/09/2021	45	27													
BH07_0.1	0.1	0.1		3/09/2021	<5	19													
BH07_0.3	0.3	0.3		3/09/2021	30	32													
BH08_0.1	0.1	0.1		3/09/2021	15	14													
6P-0.3 (HA02)	0.3	0.3		1/10/2019															
BH14_0.5	0.5	0.5		3/09/2021	17	20													
QC04 (TRIP 2-0.3)	0.3	0.3		1/10/2019															
HA08/SA13	0	0.1		25/09/2013	11	72													
2-0.3	0.3	0.3		1/10/2019															
18-0.2	0.2	0.2		1/10/2019	-	-													
9P-0.45 (HA09)	0.45	0.45		1/10/2019															
HA05	0	0.1		25/09/2013	19	45													
BH21_0.5	0.5	0.5		3/09/2021	84	34													
BH16_0.1	0.1	0.1		3/09/2021	9.5	320													
BH16_0.3	0.3	0.3		3/09/2021	21	53													
BH16_0.5	0.5	0.5		3/09/2021	45	43													
BH13_0.1	0.1	0.1		3/09/2021	25	250													
BH15_0.1	0.1	0.1		3/09/2021	13	250													
14-0.0	0	0.1		1/10/2019	-	-													
QC01 (DUP HA05)	0	0.1		26/09/2013	20	54													
SA01/A01	0	0.1	ACM	25/09/2013															
SA02/A02	0	0.1		25/09/2013															
SA03/A03	0	0.1		25/09/2013															
SA04/A04	0	0.1	Slag, Brick	25/09/2013															
SA05/A05	0	0.1	Slag	25/09/2013															
SA06/A06	0	0.1	Slag	25/09/2013															
SA06/A06	0.3	0.4	Slag	25/09/2013															
SA07/A07	0	0.1		25/09/2013															
SA08/A08	0	0.1	Slag, Concrete, Wood	25/09/2013															
SA09/A09	0	0.1		25/09/2013															
SA10/A10	0	0.1	Slag	25/09/2013															
SA11/A11	0	0.1		25/09/2013															
BH21_0.1	0.1	0.1		3/09/2021	<5	31													
SA13/A13	0	0.1		25/09/2013															
Main Hall (under building)	0	0	ACM	25/09/2013															
SLAG-1	SLAG-1	SLAG-1		3/09/2021	<5	19													
SLAG-2	SLAG-2	SLAG-2		3/09/2021	<5	<5													

DVA Greenslopes Soil Data Lined Landfill Acceptance Criteria

SAMPLE ID	Sample Depth (m)	Sample Depth (m)	Anthropogenic Materials	Sampled_Date			TRH			BTEX						Other			
					Nickel	Zinc	C6-C10	C10-C16	C16-C34	C34-C40	Benzene	Toluene	Ethyl benzene	Xylene (m & p)	Xylene (o)	Xylenes	Total BTEX	CEC	pH
Units	-	-		-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
SYNTHETICALLY LINED LANDFILL DISPOSAL CRITERIA											20	600	1000			500	1000		
BH01_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH03_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH05_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH06_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH07_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
BH08_CONCRETE	CONCRETE	CONCRETE		3/09/2021															
Accomodation Building (under building)	0	0	ACM	25/09/2013															
Unsealed External Areas	0	0.01		25/09/2013															
A01, A04, A10	0.15	0.15		25/09/2013															
A06, A10	0.15	0.15		25/09/2013															

APPENDIX C: STAPYLTON WASTE ACCEPTANCE CRITERIA

Environmental authority BRID0046

	<p>b. liquid or semi-liquid waste that is incidental to, and commingled with, the permitted waste streams.</p> <ol style="list-style-type: none"> hot ash; material that is smouldering or aflame; material containing a substance which is ignitable, corrosive, reactive or toxic material (other than materials containing a toxic substance from domestic premises) unless this material is to be deposited into a dedicated monocell with a written approval of the administering authority; all radioactive wastes, unless otherwise approved under the <i>Radiation Safety Act 1999</i> or approved contaminated soil; an explosive; ammunition, other than ammunition that no longer contains explosives, pyrotechnics or propellants apart from trace residues that are no longer capable of supporting combustion or an explosive reaction. 														
W3	Incompatible wastes must not be mixed in the same container or waste storage area.														
W4	Deposited waste must be covered as soon as practicable to limit stormwater infiltration, prevent exposure of waste and prevent issues arising from vectors and pest species.														
W5	With the exception of landfill gas waste must not be burnt.														
W6	<p>Waste and any contaminated soil disposed of at the premises to which this environmental authority relates:</p> <ol style="list-style-type: none"> must be accepted subject to effectively implementing risk assessment practices and procedures for contaminant testing that ensure that the material accepted complies with the maximum contaminant levels and the allowable leaching contaminant levels prescribed in Table 4—Maximum contaminant levels in soils and Table 5—Allowable leaching contaminant levels respectively; and if the contaminated soil is used as coverage material, contaminant levels must not exceed the maximum concentration limits in Table 6, must not cause contaminated stormwater release and must not include any soil that is contaminated due to the concentration of monocyclic aromatic hydrocarbons, polycyclic aromatic hydrocarbons, chlorinated hydrocarbons, pesticides, or petroleum hydrocarbons. <p>Table 4—Maximum contaminant levels in waste and soil</p> <table> <tr> <th>Contaminant</th><th>Maximum contaminant level for double-lined landfills (mg/kg)</th></tr> <tr> <td colspan="2"><i>Monocyclic aromatic hydrocarbons (MAH)</i></td></tr> <tr> <td>Benzene</td><td>20</td></tr> <tr> <td>Ethyl Benzene</td><td>1,000</td></tr> <tr> <td>Toluene</td><td>600</td></tr> <tr> <td>Xylene</td><td>500</td></tr> <tr> <td>Total MAH</td><td>1,000</td></tr> </table>	Contaminant	Maximum contaminant level for double-lined landfills (mg/kg)	<i>Monocyclic aromatic hydrocarbons (MAH)</i>		Benzene	20	Ethyl Benzene	1,000	Toluene	600	Xylene	500	Total MAH	1,000
Contaminant	Maximum contaminant level for double-lined landfills (mg/kg)														
<i>Monocyclic aromatic hydrocarbons (MAH)</i>															
Benzene	20														
Ethyl Benzene	1,000														
Toluene	600														
Xylene	500														
Total MAH	1,000														

Environmental authority BRID0046

<i>Polycyclic aromatic hydrocarbons (PAH)</i>	
Total PAH	1,000
<i>Phenolic contaminants - Non halogenated compounds:</i>	
Phenol	250
m-cresol	500
o-cresol	500
p-cresol	500
Total non-halogenated phenol	500
<i>Phenolic contaminants - Halogenated phenol</i>	
Chlorophenol	5
Pentachlorophenol	20
Trichlorophenol	20
Total halogenated phenol	20
<i>Chlorinated Hydrocarbons - Chlorinated aliphatic compounds:</i>	
Carbon tetrachloride	10
1,2 Dichloroethane	20
1,1 Dichloroethene	1
Tetrachloroethene	20
Trichloroethene	25
Total chlorinated aliphatic compounds	50
<i>Chlorinated aromatic compounds:</i>	
Chlorobenzene	200
Hexachlorobenzene	1
Total chlorinated aromatic compounds	200
Non-scheduled solid polychlorinated biphenyls (PCBs)	50
<i>Pesticides (screening)</i>	
Total organochlorine	50
Total herbicides	50
Total carbamates	50
Total organophosphorus	50
<i>Petroleum hydrocarbons</i>	

Environmental authority BRID0046

Total petroleum hydrocarbons (C ₆ -C ₉)	1,000
Total petroleum hydrocarbons (C ₁₀ -C ₁₄)	10,000
Total petroleum hydrocarbons (C ₁₅ -C ₂₈)	50,000
Total petroleum hydrocarbons (C ₂₉ -C ₃₆)	50,000
Organotins	
Tributyltin oxide	10

Table 5—Allowable leaching contaminant levels in waste and soil

Contaminant	Allowable leaching contaminant levels (TCLP) for double-lined landfills (mg/L)
<i>Non-specific contaminants</i>	
Biochemical oxygen demand	20,000
Total organic carbon	10,000
Petroleum hydrocarbons	50
<i>Metals/metalloids</i>	
Antimony	5
Arsenic	5
Barium	100
Cadmium	0.5
Chromium	5
Cobalt	5
Copper	100
Lead	5
Mercury	0.1
Molybdenum	5
Nickel	5
Selenium	1
Silver	5
Thallium	1
Tin	3
Vanadium	5
Zinc	500

Environmental authority BRID0046

<i>Inorganic anions</i>	
Bromide	50
Chloride	6,000
Cyanide (total)	5
Fluoride	150
Nitrate	1,000
Sulphate	4,000
<i>Monocyclic aromatic hydrocarbon (MAH)</i>	
Benzene	1
Ethyl benzene	50
Toluene	30
Xylene	20
Total MAH	50
<i>Polycyclic aromatic hydrocarbons (PAH)</i>	
Anthracene	0.7
Benz (a) anthracene	0.05
Benz (c) phenanthrene	0.05
Benzo (a) pyrene	0.02
Benzo (b) fluoranthene	0.05
Benzo (k) fluoranthene	0.05
Chrysene	0.1
Dibenz (a,h) anthracene	0.02
Dibenz (a,h) pyrene	0.1
Dimethylbenz (a) anthracene	0.05
Fluoranthene	0.2
Indeno (1,2,3-cd) pyrene	0.1
Naphthalene	0.7
Phenanthrene	0.1
Pyrene	0.7
Total PAH	1
<i>Phenolic contaminants – Non-halogenated compounds:</i>	

Environmental authority BRID0046

Phenol	10
m-cresol	20
o-cresol	20
p-cresol	20
<i>Phenolic contaminants – Halogenated phenols</i>	
Chlorophenol	0.1
Pentachlorophenol	1
Trichlorophenol	1
<i>Chlorinated hydrocarbons - Chlorinated aliphatic compounds</i>	
Carbon tetrachloride	0.3
1,2 Dichloroethane	1
1,1 Dichloroethene	0.03
Tetrachloroethene	1
Trichloroethene	3
<i>Chlorinated hydrocarbons - Chlorinated aromatic compounds</i>	
Chlorobenzene (total)	10
Hexachlorobenzene	0.02
<i>Pesticides - Organochlorine</i>	
Aldrin	0.01
Chlordane	0.06
Chlorpyrifos	0.03
Dieldrin	0.01
DDT	0.03
Endrin	0.01
Heptachlor	0.03
Lindane	1
Methoxychlor	1
Toxaphene	0.05
<i>Pesticides - Herbicides</i>	
2,4-D	1
2,4-DB	2

Environmental authority BRID0046

2,4,5 -T	0.02												
MCPA	2												
<i>Pesticides - Carbamates:</i>													
Carbaryl	0.6												
Carbofuran	0.3												
<i>Pesticides - Organophosphorus</i>													
Diazinon	0.1												
Methyl Parathion	0.06												
Parathion	0.3												
<i>Pesticides - Triazines:</i>													
Atrazine	0.03												
Simazine	0.03												
<i>Fluorinated organic compounds</i>													
Total fluorinated organic compounds (if leachate reused on or off-site)	0.0003												
Total fluorinated organic compounds (if leachate not reused on or off-site)	0.05												
<i>Organotins</i>													
Tributyltin oxide	0.4												
For any waste or soil contaminated by radioactive material, the gross alpha and gross beta activity concentration in the Toxicity Characteristic Leaching Procedure (TCLP) extracts from the material are no more than 100 times the concentrations for the screening of gross alpha and gross beta activity concentrations specified in the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines, 2011.													
<p>*Allowable leaching levels to be determined using the TCLP procedure mentioned in United States Environmental Protection Agency (USEPA), Washington DC (2008) 'Test methods for evaluating solid waste, physical/chemical methods' Document number SW 846. 3rd Edition or more recent editions or supplement to that procedure as they become available.</p> <p>Table 6—Maximum total contaminant levels in soils used as cover material (note: this material is not suitable for final capping)</p> <table> <tr> <th>Contaminant</th><th>Maximum total contaminant levels in soils used as cover material (mg/kg)</th></tr> <tr> <td colspan="2">Metals and metalloids</td></tr> <tr> <td>Arsenic (total)</td><td>200</td></tr> <tr> <td>Beryllium</td><td>40</td></tr> <tr> <td>Cadmium</td><td>40</td></tr> <tr> <td>Chromium (III)</td><td>240,000</td></tr> </table>		Contaminant	Maximum total contaminant levels in soils used as cover material (mg/kg)	Metals and metalloids		Arsenic (total)	200	Beryllium	40	Cadmium	40	Chromium (III)	240,000
Contaminant	Maximum total contaminant levels in soils used as cover material (mg/kg)												
Metals and metalloids													
Arsenic (total)	200												
Beryllium	40												
Cadmium	40												
Chromium (III)	240,000												

Environmental authority BRID0046

Chromium (VI)	200
Copper	2,000
Lead	600
Manganese	3,000
Mercury (inorganic)	30
Methyl Mercury	20
Nickel	600
Zinc	14,000
Others	
PFOS (Perfluoro-octane sulfonate)	6
PFOA (Perfluoro-octanoic acid)	16
Total fluorinated organic compounds	10 (not including PFOS & PFOA)

Definitions

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Heritage Protection or its successor or predecessors.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Background means noise, measured in the absence of the noise under investigation, as $L_{A90,T}$ being the A-weighted sound pressure level exceeded for 90 per cent of the time period of not less than 15 minutes, using Fast response.

Blasting means the use of explosive materials to fracture:

- (a) rock, coal and other minerals for later recovery; or
- (b) structural components or other items to facilitate removal from a site or reuse.

Boundary means within one metre of the cadastral boundary of the site.

Clay lined means a landfill lined with compacted clay at least 600 mm thick achieving a maximum permeability of 1×10^{-9} metres per second or alternate such as an engineered geosynthetic agreed in writing as equivalent in performance by the **administering authority**.

Commercial waste as defined in the *Environmental Protection Regulation 2008*.

APPENDIX D: SOIL DISPOSAL PERMITS

Notice

Environmental Protection Act 1994

Notice of decision to grant a soil disposal permit with conditions

This information notice is issued by the administering authority in accordance with section 424(5) of the Environmental Protection Act 1994 (EP Act) to advise you of the decision to grant your application for a soil disposal permit, but to impose conditions on the permit, and to inform you of the reasons for the decision and your review and appeal rights.

To: Enviropacific Services Limited
1392 Kingsford Smith Drive
Pinkenba QLD 4000
Email: mick.merriman@enviropacific.com.au
cc: ivan.neralic@tetrattech.com

Reference: 101/0017235

Attention: Mick Merriman

Dear Mr Merriman,

Re: Application to remove and dispose of 150m³ of contaminated soil from 51-55 Headfort Street, Greenslopes, QLD 4120 (Lots 123, 124 and 125 on RP46047).

1 Decision

The administering authority has considered your application received on 8 June 2023 and has decided to grant the application, but to impose conditions on the permit.

2 Grounds for the decision

The granting of the permit subject to the conditions imposed is consistent with the standard criteria defined in Schedule 4 of the Environmental Protection Act 1994 (EP Act).

3 Assessment criteria used in making the decision

In accordance with section 424(4) of the EP Act in making its decision to grant the application for disposal permit the administering authority has considered the standard criteria listed in Schedule 4 of the EP Act including:

- best practice environmental management for removal treatment and disposal of contaminated soil
- any applicable environmental protection policy
- any applicable site investigation- report or validation report or site management plan
- any applicable Commonwealth, State or local government plans, standards, agreements or requirements.

Notice of decision to grant a soil disposal permit with conditions

4 Findings as a result of the administering authority's assessment of the application

The information provided in the disposal permit application is sufficient to justify the disposal of the soil

5 Information considered by the administering authority in making its determination

Information provided in the application submitted by Enviropacific Services Limited and validated on 9 June 2023 including:

- Application form and supporting documentation,
- Email correspondence from the applicant, dated 22 June 2023,
- Email correspondence from Veolia Environmental Services, dated 22 June 2023 and
- Letter of acceptance provided by Veolia Environmental Services, dated 7 June 2023 stating they are willing to accept **150m³** of contaminated soil from **51-55 Headfort Street, Greenslopes, QLD 4120 (Lot 123, 124 and 125 RP46047)** for **Monocell Disposal** at the **Ti Tree bioENERGY facility**, located at **55 Champions Way, Willowbank, QLD 4306 (Lot 3 on SP167885 & Lot 8 on RP24574)** and operating under the EA EPPR00573913.

Additional information obtained by the department:

- Monocell disposal approval letter from Waste Assessment, DES, dated 1 June 2023. Monocell disposal has been approved until **24 December 2023**.

6 Review and appeal details

This decision is not an original decision under the EP Act and so there are no formal review and appeal rights if you are dissatisfied with the decision made by the administering authority. If you are dissatisfied with this decision, you may make an application to the administering authority to review the decision, however, the administering authority is not required to conduct a review. You may have other legal rights and should seek legal advice.

Should you have any questions in relation to this matter, please contact Malika Kirchner from Contaminated Land on (07) 3330 6085.



Signature

22 June 2023

Date

Bronwyn Cruse
Department of Environment and Science
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Malika Kirchner
Contaminated Land Assessment
Department of Environment and Science
Email: Malika.Kirchner@des.qld.gov.au
Ph: (07) 3330 6085

SOIL DISPOSAL PERMIT
Environmental Protection Act 1994 (EP Act)

Disposal permit number: SDP010002171

Commencement date: 23 June 2023

Expiry Date: 24 December 2023

Permit Holder: Enviropacific Services Limited

Authorised activity: Removal of 150m³ of contaminated soil from 51-55 Headfort Street, Greenslopes, QLD 4120 (Lot 123, 124 and 125 RP46047) for ***Monocell Disposal*** at the Ti Tree bioENERGY Facility (Licensed under EA EPPR00573913, Veolia Environmental Services (Australia) Pty Ltd) located at 55 Champions Way, Willowbank, QLD 4306 (Lot 3 on SP167885 & Lot 8 on RP24574).

Maximum volume: 150m³

This disposal permit is subject to the conditions endorsed hereon or attached hereto in Schedule A.



Signature

22 June 2023

Date

Bronwyn Cruse
Department of Environment and Science
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Malika Kirchner
Contaminated Land Assessment
Department of Environment and Science
Email: Malika.Kirchner@des.qld.gov.au
Ph: (07) 3330 6085

Schedule A - Conditions

1. Records of soil removal, treatment and disposal authorised under this permit must be kept for a period of no less than seven years and be available to the administering authority by request. The information to be kept in the records must include:
 - a) the quantity of material disposed; and
 - b) acceptance receipts from the waste disposal/treatment facility.
2. The permit holder must provide a copy of the permit to any person acting under the permit.
3. Contaminated soil must not be released to air, land or water during excavation, loading, storage, treatment and transport of the soil in a manner that causes environmental harm.

Notice

Environmental Protection Act 1994

Notice of decision to grant a soil disposal permit with conditions

This information notice is issued by the administering authority in accordance with section 424(5) of the Environmental Protection Act 1994 (EP Act) to advise you of the decision to grant your application for a soil disposal permit, but to impose conditions on the permit, and to inform you of the reasons for the decision and your review and appeal rights.

To: Enviropacific Services Limited
1392 Kingsford Smith Drive
Pinkenba, QLD 4008
Email: mick.merriman@enviropacific.com.au
cc: ivan.neralic@enviropacific.com.au

Reference: 101/0017235

Attention: Mick Merriman

Dear Mr Merriman

Re: Application to remove and dispose of 500m³ of contaminated soil from 51-55 Headfort Street, Greenslopes, QLD 4120 (Lots 123, 124 and 125 RP46047).

1 Decision

The administering authority has considered your application received on 22 June 2023 and has decided to grant the application, but to impose conditions on the permit.

2 Grounds for the decision

The granting of the permit subject to the conditions imposed is consistent with the standard criteria defined in Schedule 4 of the Environmental Protection Act 1994 (EP Act).

3 Assessment criteria used in making the decision

In accordance with section 424(4) of the EP Act in making its decision to grant the application for disposal permit the administering authority has considered the standard criteria listed in Schedule 4 of the EP Act including:

- best practice environmental management for removal treatment and disposal of contaminated soil
- any applicable environmental protection policy
- any applicable site investigation- report or validation report or site management plan
- any applicable Commonwealth, State or local government plans, standards, agreements or requirements.

Notice of decision to grant a soil disposal permit with conditions

4 Findings as a result of the administering authority's assessment of the application

The information provided in the disposal permit application is sufficient to justify the disposal of the soil.

5 Information considered by the administering authority in making its determination

Information provided in the application submitted by Enviropacific Services Limited and validated on 22 June 2023 including:

- Application form and supporting documentation,
- Letter of acceptance provided by BMI Group, dated 21 June 2023 stating they are willing to accept **500m³** of contaminated soil from **51-55 Headfort Street, Greenslopes, QLD 4120 (Lot 123, 124 and 125 RP46047)** for **Lined Landfill Disposal** at the **Stapylton Resource Recovery Facility**, located at **144 Rossmanns Road, Stapylton, QLD 4207 (Lots 2 and 3 SP279441)** and operating under the EA P-EA-100287544.

6 Review and appeal details

This decision is not an original decision under the EP Act and so there are no formal review and appeal rights if you are dissatisfied with the decision made by the administering authority. If you are dissatisfied with this decision, you may make an application to the administering authority to review the decision, however, the administering authority is not required to conduct a review. You may have other legal rights and should seek legal advice.

Should you have any questions in relation to this matter, please contact Malika Kirchner from Contaminated Land on (07) 3330 6085.



Signature

5 July 2023

Date

Kathrin Sherman
Department of Environment and Science
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
 Malika Kirchner
 Contaminated Land Assessment
 Department of Environment and Science
 Email: Malika.Kirchner@des.qld.gov.au
 Ph: (07) 3330 6085

SOIL DISPOSAL PERMIT
Environmental Protection Act 1994 (EP Act)

Disposal permit number: SDP010002201

Commencement date: 6 July 2023

Expiry Date: 5 July 2024

Permit Holder: Enviropacific Services Limited

Authorised activity: Removal of **500m³** of contaminated soil from **51-55 Headfort Street, Greenslopes QLD 4120 (Lot 123, 124 and 125 RP46047)** for ***Lined Landfill Disposal*** at the **Stapylton Resource Recovery Facility** (Licensed under EA P-EA-100287544), located at **144 Rossmanns Road, Stapylton, QLD 4207 (Lots 2 and 3 SP279441)**.

Maximum volume: 500m³

This disposal permit is subject to the conditions endorsed hereon or attached hereto in Schedule A.



Signature

5 July 2023

Date

Kathrin Sherman
Department of Environment and Science
Delegate of the Administering Authority
Environmental Protection Act 1994

Enquiries:
Malika Kirchner
Contaminated Land Assessment
Department of Environment and Science
Email: Malika.Kirchner@des.qld.gov.au
Ph: (07) 3330 6085

Schedule A - Conditions

1. Records of soil removal, treatment and disposal authorised under this permit must be kept for a period of no less than seven years and be available to the administering authority by request. The information to be kept in the records must include:
 - a) the quantity of material disposed; and
 - b) acceptance receipts from the waste disposal/treatment facility.
2. The permit holder must provide a copy of the permit to any person acting under the permit.
3. Contaminated soil must not be released to air, land or water during excavation, loading, storage, treatment and transport of the soil in a manner that causes environmental harm.

APPENDIX E: WASTE LEVY EXEMPTION

Certificate of Exempt Waste

Waste Reduction and Recycling Act 2011

Notice of approval of waste as exempt waste (waste levy) Contaminated earth

This certificate documents the granting of the approval of waste as exempt waste under section 31 of the Waste Reduction and Recycling Act 2011. Present this certificate to the waste disposal site operator each time the exempt waste is delivered. The operator will need to see this certificate to record the Exempt Waste Number in the gate transaction record. This approval only relates to exemption from the waste levy. It does not affect requirements or conditions of any soil disposal permit or any other approval, permit or obligation under the Environmental Protection Act 1994, the Waste Reduction and Recycling Act 2011, or any other act.

Exempt Waste Number:

230021CSE

Waste approved as exempt waste: Earth contaminated with a hazardous contaminant from land recorded in the Environmental Management Register (EMR) or Contaminated Land Register (CLR)

Issued to:

Entity name:	Enviropacific Services Limited
ABN:	43 111 372 064
Registered address:	1392 Kingsford-Smith Drive, Pinkenba, QLD 4008
Contact name:	Ivan Neralic
Contact phone number:	(07) 3239 9300
Contact email:	ivan.neralic@tetrattech.com mick.merriman@enviropacific.com

Exemption period:

Active from: 12 May 2023	To: 18 May 2025
--------------------------	-----------------

The following conditions apply to the approval:

Condition Number	Condition
Condition 1	The maximum weight of exempt waste must not exceed 910 tonnes over the exemption period.

Certificate of Exempt Waste
Notice of approval of waste as exempt waste (waste levy)
Contaminated Earth

Condition 2	<p>The waste, approved as exempt waste under this certificate, is earth from land listed on the EMR or CLR, contaminated with a hazardous contaminant and is not mixed with any other waste, from the following site:</p> <p>a) 114 Newdegate Street, Greenslopes, QLD 4120</p> <p>Lot 123 on RP46047 (EMR Site ID 148512), Lot 124 on RP46047 (EMR Site ID 148513), and Lot 125 on RP46047 (EMR Site ID 148514)</p>
Condition 3	<p>The waste, approved as exempt waste under this certificate, must be disposed of in accordance with a relevant soil disposal permit issued under the <i>Environmental Protection Act 1994</i>.</p>
Condition 4	<p>The waste, approved as exempt waste under this certificate, must be delivered to the levyable waste disposal site¹ of the following sites:</p> <p>a) Stapylton Resource Recovery (C203143)</p> <p>144 Rossmanns Road, Stapylton, QLD 4207</p> <p>b) Ti Tree Bioenergy (C114122)</p> <p>Champions Way, Willowbank, QLD 4306</p>

David Drew
Department of Environment and Science
Delegate for chief executive
Waste Reduction and Recycling Act 2011

Enquiries:
Waste and Enforcement Services
Department of Environment and Science
Email: wastelevyapps@des.qld.gov.au

Date granted: 12 May 2023

¹ Levyable waste disposal site does not include a part of the waste disposal site that is a resource recovery area, as per definition in the *Waste Reduction and Recycling Act 2011*.

APPENDIX F: DATA QUALITY OBJECTIVES AND INDICATORS

As stated in Section 18 Appendix B of Schedule B2 of the ASC NEPM, the DQO process is a seven-step iterative planning approach used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site.

The seven-step DQO process adopted for the validation of remediation is summarised in the following table.

F.1 DATA QUALITY OBJECTIVES

1. State the problem	<p>The primary objectives for the remediation of the Site are to make it suitable for park and community use, and to remove the OCP contaminated soil from the Site as practicable such that the property can be removed from the EMR.</p> <p>Remediation is required to remove the Site from the EMR and will include:</p> <ul style="list-style-type: none">the removal of OCP impacted soil materials which exceed the Remediation Criteria in Section 7.3the removal of Unsuitable Fill Materials (fill materials containing anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space) <p>Validation of the Site is required to confirm that the remediation objectives have been achieved. The main problems are:</p> <ul style="list-style-type: none">What areas require remediation?How should site soils be validated?What validation sampling density should be used?What contaminants should be analysed for?
2. Identify the decision	<p>Is the data suitable for assessing whether the areas requiring remediation have been remediated?</p> <p>Is the Site suitable for the proposed land uses?</p>
3. Identify inputs to the decision	<p>The primary inputs to assessing the above include:</p> <ul style="list-style-type: none">Previous investigations (where applicable)Field observations including the presence of Unsuitable Fill MaterialsAnalytical data of validation sample media, and quality assurance / quality control (QA/QC) samplesData quality protocolsRemediation criteria (refer to Section 7.3).
4. Define the boundaries of the study	<p>The boundaries for the validation sampling program are identified as follows:</p> <ul style="list-style-type: none">Spatial Boundaries: Lot 123 on RP46047, Lot 124 on RP46047, and Lot 125 on RP46047.Temporal boundaries: The status of the sampling points at the time of the investigation.The vertical study boundary will be the depth of the validation samples described in Section 8.6.

5. Develop a decision rule	<p>The decision rules to be applied to the DSI include:</p> <p>For OCPs in soil, the following approach is to be adopted:</p> <ul style="list-style-type: none"> • Where OCPs concentrations for each sample are below the adopted remediation criteria, no further remediation is required. • Where soil contaminant concentrations are reported to exceed the adopted remediation criteria, and it is not practicable to remediate the Site so it can be removed from the EMR, the soil contaminant concentrations will be compared to NEPM HIL-C criteria. If there is an exceedance of HIL-C remediation criteria the following additional steps will be undertaken: <ul style="list-style-type: none"> – Where sufficient data is available, calculate the 95% Upper Confidence Level of the mean (95%UCL), data range and standard deviation. – Where the 95% UCLs are less than the assessment criteria and no individual results in the data set are to be greater than 250% of the assessment criteria; and the standard deviation of the data set is to be within 50% of the assessment criteria, no further remediation is required. – Where the 95% UCL is more than the assessment criteria, consider these results in the context of the current CSM to evaluate whether there are plausible pollutant linkages remaining. – If plausible pollutant linkages are identified, then further remediation should be undertaken to remove impacted soil. <p>For Unsuitable Fill Materials, the following approach is to be adopted:</p> <ul style="list-style-type: none"> • A SQP who is competent in the identification of Unsuitable Fill Materials will inspect the site to confirm that these materials have been removed.
6. Acceptable limits on decision error	<p>Decision errors are incorrect decisions caused by using data that is not representative of site conditions due to sampling or analytical error. As a result, a decision may be made that remediation/management is not needed when it is, or vice versa. There are two types of decision error:</p> <ul style="list-style-type: none"> • Sampling errors, which occur when the samples collected are not representative of the conditions within the investigation area; and • Measurement errors, which occur during sample collection, handling, preparation, analysis and data reduction. <p>To consider whether decision errors have been made, an assessment of data quality indicators will be undertaken as described in Section 8.6.4 (including a QA/QC assessment of the data collected). The closeness of the data to the assessment criteria will also be considered.</p>
7. Optimise the design for obtaining data	<p>The methodology and rationale for obtaining relevant data for validation is described in Section 8.6.</p>

F.2 DATA QUALITY INDICATORS

Data Quality Indicators (DQIs) are used to show that the DQOs have been met. DQIs for the project are based on the field and laboratory considerations in Section 19.6 of ASC NEPM 2013 Schedule B2 Appendix B, which include:

- Completeness – a measure of the amount of useable data (expressed as %) from a data collection activity.
- Comparability – the confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.
- Representativeness – the confidence (expressed qualitatively) that data are representative of each media present on the Site.
- Precision – A quantitative measure of the variability (or reproducibility) of data.
- Accuracy – a quantitative measure of the closeness of reported data to the true value; and
- The QA review will include a check of performance against the DQIs.

The DQIs adopted for soil sampling is discussed in the following tables.

Table A: DQI Completeness

DQI	Field Considerations	DQI Criteria	Laboratory Considerations	DQI Criteria
Completeness	Critical locations sampled	Samples will be collected from nominated locations with no deviation from the sampling plan, without reasonable justification.	Critical samples analysed according to sampling plan.	Samples will be analysed for COPC.
	Samples collected	Samples will be collected in accordance with Tetra Tech Coffey's Standard Operating Procedures (SOPs) during the assessment.	Identified COPCs included.	As above.
	Standard Operating Procedures (SOPs) appropriate and complied with	No departure from Tetra Tech Coffey SOPs without reasonable justification.	Appropriate methods and LORs	Samples will be analysed by NATA accredited laboratories, for the analyses to be performed and appropriate methods were used. LORs were less than assessment criteria.
	Experienced sampler	Experienced Tetra Tech Coffey Environmental Scientists will undertake the sampling.	Sample documentation complete	Chain of custody's (COCs) will be returned, signed and dated by laboratory. NATA endorsed laboratory

				certificates will be completed in accordance with Schedule B3 of the ASC NEPM. Field logs will be completed in accordance with Coffey SOPs.
	Documentation correct	Samples will be handled and transported under appropriate chain of custody (COC) documentation. Coffey will keep original COC documentation. Sample Receipt Notifications (SRN) from the laboratory will be reviewed to assess that samples were received cool and in good condition.	Sample holding times will be complied with	Samples will be analysed within holding times specified in Schedule B3 of the ASC NEPM.

Table B: DQI Comparability

DQI	Field Considerations	DQI Criteria	Laboratory Considerations	DQI Criteria
Comparability	Same SOPs used on each occasion	Tetra Tech Coffey SOPs will be implemented.	Same sample analytical methods will be used.	The same NATA accredited laboratories will be used to undertake analyses of primary, duplicate and triplicate samples collected for this study. The laboratory will use the same analytical methods for each sample for each analytical parameter.
	Experienced sampler	Experienced Tetra Tech Coffey Environmental Scientist will conduct sampling.	Same sample LORs	As above
	Climatic conditions (temperature, rainfall, wind etc.)	Environmental scientist will attempt to sample in similar climatic conditions if practicable.	Same laboratories	As above
	Same types of samples collected	Samples will be collected in the appropriate laboratory supplied container specific to the analyses performed.	Same units	As above

Table C: DQI Representativeness

DQI	Field Considerations	DQI Criteria	Laboratory Considerations	DQI Criteria
Representativeness	Appropriate media sampled according to sample plan	Soil samples and groundwater will be collected and analysed in accordance with TETRA TECH COFFEYs SOPs.	Appropriate media sampled according to this plan	Collected samples will be analysed by NATA accredited laboratories.
	All media identified in sample plan	Soil collected and analysed in accordance with TETRA TECH COFFEYs SOPs.	-	-
	SOPs appropriate and complied	TETRA TECH COFFEYs SOPs will be implemented.	Analysis of field duplicates	Laboratory duplicates will be analysed in general accordance with ASC NEPM. Duplicate and triplicate samples collected for soil.

Table D: DQI Precision

DQI	Field Considerations	DQI Criteria	Laboratory Considerations	DQI Criteria
Precision	SOPs appropriate will be complied with	Tetra Tech Coffey's SOPs will be implemented.	Analysis of laboratory duplicates	Relative Percent Differential (RPD) values for laboratory duplicates and recovery of matrix spikes should be within acceptable ranges.
	Analysis of field duplicates	As for laboratory considerations	Analysis of field duplicates	Duplicates were analysed at a frequency set out in Section 8.7.4. RPDs will be calculated and compared to relevant acceptance criteria. Tetra Tech Coffey will adopt 30% for concentrations more than 10 times the LOR and 50% for concentrations less than 10 times the LOR (Standards Australia 1997).

Table E: DQI Accuracy

DQI	Field Considerations	DQI Criteria	Laboratory Considerations	DQI Criteria
Accuracy	SOP appropriate and complied with	Tetra Tech Coffey SOPs will be implemented	Same sample analytical methods will be used.	The same NATA accredited laboratories will be used to undertake analyses of primary, duplicate and triplicate samples collected for this study. The laboratory will use the same analytical methods for each sample for each analytical parameter.
	Trip blanks	Trip blank sample will be collected using laboratory supplied distilled water.	Trip blanks	A laboratory prepared trip blank will be included for each sample set.
	Rinsate sample	Where reusable sampling equipment is utilised (if any) a rinsate sample will be collected using laboratory supplied distilled water. If rinsate sampling is not completed as part of the assessment, justification will be required.	Rinsate sample	Non-detection of COPCs in rinsate sample.
	-	-	Laboratory duplicate and Matrix spike	RPD values for laboratory control duplicates and recovery of matrix spikes should be within acceptance limits.

APPENDIX G: MATERIALS REQUIRING REMEDIATION

Table A: Materials Requiring Remediation Ground Surface to 0.25 m bgs (refer to Figure 4A, Appendix 1)

Area	Requirement for Remediation
Area 1A Area 1B Area 1C Area 3C	<p>Requirement for Remediation</p> <p>OCPs exceed NEPM HIL-C and NEPM HIL-A guidelines for parks and open space and residential areas respectively and exceeded the lined landfill acceptance criteria. While the majority of OCP contamination is expected to be within the first 0.2 m bgs of soil, based on the existing data OCP contamination extends further into deeper soil deposits (~0.4 m bgs).</p> <p>ACM is potentially present in shallow soil materials. Fill materials containing anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space are also potentially present and are herein referred to in this RAP as "Unsuitable Fill Materials".</p> <p>Materials in these areas to be excavated to 0.25 m bgs for disposal to monocell. Refer to Table C in this appendix regarding how areas requiring disposal to monocell have been defined.</p>
Area 1	<p>Requirement for Remediation</p> <p>OCPs in Area 1 exceed NEPM HIL-C and NEPM HIL-A guidelines for parks and open space and residential areas respectively. While the majority of OCP contamination is expected to be within the first 0.2 m bgs of soil, based on the existing data OCP contamination extends further into deeper soil deposits (~0.4 to 0.5 m bgs).</p> <p>ACM is potentially present in shallow soil materials. Fill materials containing anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space are also potentially present and are herein referred to in this RAP as "Unsuitable Fill Materials".</p> <p>Materials in this area is to be excavated to 0.25 m bgs for disposal to lined landfill as contaminated soil potentially containing ACM.</p>
Area 2	<p>Requirement for Remediation</p> <p>Area 2 has detectable concentration of OCP with concentrations below NEPM HIL-A guidelines for residential areas with accessible gardens. Based on the existing data OCP contamination is expected to be within the upper 0.2 m of soil, however there would be potential for detectable concentrations to be present which are deeper than 0.2 m.</p> <p>ACM is potentially present in shallow soil materials. Unsuitable Fill Materials are also potentially present.</p> <p>Materials in this area is to be excavated to 0.25 m bgs for disposal to lined landfill as contaminated soil potentially containing ACM.</p>
Area 3A Area 3B	<p>Requirement for Remediation</p> <p>Area 3A/3B has detectable concentration of OCP with concentrations below NEPM HIL-A guidelines for residential areas with accessible gardens¹⁹. Based on the existing data OCP contamination is expected to be within the upper 0.2 m of soil, detectable concentrations have also been identified in materials deeper than 0.2 m bgs.</p> <p>ACM is potentially present in shallow soil materials. Unsuitable Fill Materials are also potentially present.</p> <p>Materials in this area is to be excavated to 0.25 m bgs for disposal to lined landfill as contaminated soil potentially containing ACM.</p>
Area 4A	<p>Requirement for Remediation</p> <p>OCPs in Area 4A are below the NEPM HIL-A guidelines for residential areas with accessible gardens. Detectable OCPs concentrations were observed at the perimeter of Area 4A (at sampling locations BH01, BH03, BH12). These detectable OCP concentrations are below the NEPM HIL-A guidelines for residential areas with accessible gardens; however, they exceed the adopted remediation criteria of standard LOR (Section 7.3).</p> <p>ACM is not expected to be present in shallow soil materials in this area based on the site geology being natural material (and no apparent fill) and the soil material being covered in hardstand.</p> <p>Following the removal of concrete materials soil materials are to be excavated to 0.25 m bgs for recovery for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility.</p>
Area 4B	<p>Requirement for Remediation</p> <p>OCPs in Area 4B were not detected in the samples analysed from this area.</p> <p>ACM is not expected to be present in shallow soil materials in this area based on available data and the soil material being covered in hardstand.</p> <p>No excavation of these materials is planned with the exception of Unsuitable Fill Materials (if present). Materials in this area to be recovered for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility where Unsuitable Fill Materials are present.</p>

Note: **Unsuitable Fill Materials** are those containing anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space.

¹⁹ Sample locations 6,7 and 4,5 are considered to be representative of Area 3A/Area 3B

Table B: Materials Requiring Remediation 0.25 m bgs to 0.4 m bgs (refer to Figure 4B, Appendix 1)

Area	Requirement for Remediation
Area 1	<p>Requirement for Remediation</p> <p>OCPs in Area 1 exceed NEPM HIL-C and NEPM HIL-A guidelines for parks and open space and residential areas respectively. While the majority of OCP contamination is expected to be within the first 0.2 m bgs of soil, based on the existing data OCP contamination extends further into deeper soil deposits (~0.4 to 0.5 m bgs).</p> <p>Materials in this area is to be excavated from 0.25 to 0.4 m bgs for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility.</p>
Area 2	<p>Requirement for Remediation</p> <p>Area 2 has detectable concentration of OCP with concentrations below NEPM HIL-A guidelines for residential areas with accessible gardens. Based on the existing data OCP contamination is expected to be within the upper 0.2 m of soil, however there would be potential for detectable concentrations to be present which are deeper than 0.2 m.</p> <p>Materials in this area is to be excavated from 0.25 to 0.4 m bgs for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility.</p>
Area 4A Area 4B	<p>Requirement for Remediation</p> <p>Materials in this area is to be excavated from 0.25 to 0.4 m bgs for beneficial reuse at BMI Group at the Redbank Resource Recovery Facility where Unsuitable Fill Materials are present.</p>

Notes:

- 1) **Unsuitable Fill Materials** are those containing anthropogenic materials which pose physical hazards (sharp and angular) are unsuitable for use in a park/open space.
- 2) Further excavation to that described in the tables may be required based on the validation data and the presence of Unsuitable Fill Materials.

Table C: Monocell

Area	Description
1A	<p>Sample HA10 exceeded lined landfill acceptance criteria for Total OCP, and Sample 11 exceeded the lined landfill acceptance criteria TCLP dieldrin. Soil materials requiring disposal to monocell are bound by sample locations BH11 / 15, 14, BH19 and 12, which were all within lined landfill criteria.</p> <p>Refer to Note 1 regarding vertical delineation.</p>
1B	<p>Sample 9, HA09 and BH21 exceeded lined landfill acceptance criteria for Total OCP. The area is bound by samples 8, 16, BH13, 10 and HA07/SA12.</p> <p>Refer to Note 1 regarding vertical delineation.</p>
1C	<p>Sample location 34 exceeded lined landfill criteria for TCLP Dieldrin. The monocell area is bound by the site northern boundary and sample locations 18 and HA06/SA11 in the south. Prior to the excavation of materials north of the accommodation building confirmatory samples at 5 m spacings (0-0.1 m bgs) will be collected along the length of the northern side of the building and analysed for OCPs and TCLP OCP. The results of sampling will be provided to the Site Auditor in an email and included in the CLID and will confirm the eastern/western extent of Area 1C which has been assumed in the RAP. QA/QC sampling will also be undertaken based on Section 8.7.4.</p> <p>Refer to Note 1 regarding vertical delineation.</p>
3C	<p>Sample locations HA02 and [-0n9hb8uiyhghthuijkop;[</p> <p>HA03 exceeded lined landfill acceptance criteria for Total TCLP. These samples were collected from the garden bed adjacent to the building in 2013 (see photograph below table) and the locations were resampled in 2019 (6P for HA02; and 7P for HA03) which returned concentrations below the lined landfill acceptance criteria. All other samples along the garden bed collected in 2019 (1, 2, 3) had concentrations below the lined landfill acceptance criteria. Based on the requirements of the recipient landfill a conservative position has been taken in regard the disposal of soil to monocell. Area 3C has been assumed to include materials in the garden bed from sample location 3 to approximately 2.5 m west of HA02. Sample locations in this area include HA02, 6P, HA03, 7P, 2, 3, SSA/A06.</p> <p>Dimensions of Area 3C: Within the garden bed the eastern most extent of Area 3C starts at 15 m from the eastern property boundary. The length of this area is 21 m and its width is the width of the garden bed (see photograph below table).</p> <p>Refer to Note 1 regarding vertical delineation.</p>

Note 1: Elevated concentrations of OCPs have been observed in materials less than 0.2 m bgs in the majority of sample locations which is consistent with the application of termiticides into shallow soils ~0.1 m bgs. Refer to Section 9.1 of the Supplementary Investigation for further information.

Area 3C Garden Bed

