Preliminary contamination investigation

277 Cargo Road, Orange NSW

Envirowest Consulting Pty Ltd ABN 18 103 955 246

• 9 Cameron Place, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •

• 6/72 Corporation Avenue, Bathurst NSW • Tel (02) 6334 3312 •

• Email admin@envirowest.net.au • Web www.envirowest.net.au •

Environmental
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Services

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Client Fenlor Group Pty Ltd 1 Borrodel Drive Orange NSW 2800					
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0	R15156c	14/4/2023	Felipe Canavez BSc Environmental Geologist	Greg Madafiglio CEnvP Senior Environmental Scientist	

Envirowest Consulting Pty Ltd
9 Cameron Place
PO Box 8158
Orange NSW 2800
T 02 6361 4954

6/72 Corporation Avenue
Bathurst NSW 2795
T 02 6334 3312

E admin@envirowest.net.au
W envirowest.net.au

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Summary report

Background

A residential subdivision is proposed for 277 Cargo Road, Orange NSW. The site has an area of approximately 11ha. Historical land-use is grazing in the southern section of the site and orcharding in the remaining areas. An area of infrastructure comprising two dwellings and several sheds are located in the north eastern section of the site. The historical land-use has potential to result in contamination of the site.

A preliminary contamination assessment of the site is required to determine suitability for residential land-use.

Objectives of investigation

The objective of the investigation was to determine suitability of the site for the proposed land-use.

Scope

The scope was to identify past potentially contaminating activities, identify potential contamination types, discuss the site condition, provide an assessment of site contamination and assess the need for remediation or suitability for residential land-use. The scope of works included site inspection, review of available information, soil sampling and analysis.

Summary

The site is an agricultural property currently used for grazing of sheep and horses on the western outskirts of Orange. Inspections were made on 25 and 31 January and 2 February 2023. Historical land-use included grazing in the southern section and orcharding in the remaining areas of the site. Two dams are located on the site.

Infrastructure comprising four sheds and two dwellings are located in the north eastern section of the site. A fuel pump and associated underground fuel storage tank (UST) were identified in the north eastern section of the site.

Vegetation cover on the site was generally 100% dominated by pasture grasses and broad leaved weeds. Scattered apple trees occur across the site with a cluster of remnant orchard trees located in the central eastern section. Two areas of disturbed soils associated with stockpiles of foreign materials were identified in the central and north eastern sections of the site. Two dams are located in the south western section of the site.

Potential areas of environmental concern identified from the site inspection and historical review were:

- Agricultural land-use
- Horticultural land-use as an apple orchard
- Infrastructure in the north eastern section including four sheds (Sheds 1, 2, 3 and 4) and two dwellings (Dwellings 1 and 2). A pesticide mixing area was identified south of Shed 3
- UST and fuel pump located in the north eastern section of the site
- Dam sludge
- Two areas of disturbed vegetation associated with stockpiles
- Two animal shelters located in the southern section of the site

Soil samples were collected at a grid pattern on the orchard and farming area. Samples were collected from the 0-100mm and analysed for the contaminants of concern.

Samples from potential areas of environmental concern were collected in a judgemental sampling pattern from the 50-150mm and samples from the UST area were collected to depths up to 2.0m.

Contaminants of concern within the grazing and orcharding areas are heavy metals and organochlorine pesticides (OCP).

Contaminants of concern within the potential areas of environmental concern are heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH) and organochlorine and organophosphorus pesticides (OC/OPP).

Contaminants of concern of samples from the dams are heavy metals and OC/OP pesticides.

The underground petrol storage system (UPSS) contaminants of concern are TRH and BTEXN.

The contaminated areas (AECs) identified across the site were:

- Hydrocarbon impacted soil in the areas of disturbed soil associated with stockpiles of foreign materials and sparse vegetation located in the central and north eastern sections of the site (AEC 1a and AEC 1b). The elevated levels were identified in samples collected from 50 to 150mm soil depth. The areas of impacted soil are estimated in 70m^2 and 50m^2 respectively and depths of up to 300mm.
- Hydrocarbon impacted soil from an area of discoloured soil located in the attached garage south of Shed 1 (AEC 2). The discolouration extends for about 1m^2 and to a depth of 200mm.
- Copper impacted soil at three locations in the pesticide mixing area at the rear of Shed 3 (AEC 3a). The contamination is up to 150mm deep.
- Zinc impacted soil at one location in the pesticide mixing area at the rear of the chemical storage shed - Shed 3 (AEC 3a). The contamination is up to 150mm deep.
- Hydrocarbon impacted soil in the northern section of Shed 3 (AEC 3b). The area is defined by surface staining and the location of the adjacent samples that were not impacted by high levels of hydrocarbons and estimated to be 200mm deep.

Suitability
The site requires remediation to be considered suitable for residential land-use.

Recommendations
Remediation of the areas of environmental concern (Table 11) is required to enable residential land-use and prevent environmental impacts. Remediation should be undertaken in accordance with a remediation action plan and will require a development application or notification to council.

A validation assessment should be undertaken to confirm effectiveness of remediation and that no residual contamination is detected after the completion of the works. The validation will determine suitability for residential land-use.

An unexpected finds procedure should be adopted for site development works.

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1. Introduction

A residential subdivision is proposed for 277 Cargo Road, Orange NSW. The site has an area of approximately 11ha. Historical land-use is grazing in the southern section of the site and orcharding in the remaining areas. An area of infrastructure comprising two dwellings and several sheds are located in the north eastern section of the site. The historical land-use has potential to result in contamination of the site.

A preliminary contamination assessment of the site is required to determine suitability for residential land-use.

2. Objectives

The objective of the investigation was to determine suitability of the site for the proposed land-use.

3. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Fenlor Group Pty Limited to undertake a preliminary contamination investigation, in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *SEPP (Hazards and Resilience)* of 277 Cargo Road, Orange NSW. The scope of works included site inspection, review of available information, soil sampling and analysis.

4. Site identification

Address	277 Cargo Road Orange NSW
Deposited plans	Lot A DP408148
Latitude and longitude	-33.29^{o} 149.06^{o}
Geographic coordinates	55H E691545m N6315075m
Client	Fenlor Group Pty Ltd
Owner	Celestina Maria Vardanega
Current occupier	Private tenant
Area	11ha
Local government area	Orange City Council
Current zoning	C3 – Environmental management RU1 – Primary production (Orange LEP 2011)
Trigger for investigation	Change in land-use
Locality map	Figure 1

5. Site history

5.1 Land-uses

Land-use of the site at the time of inspection was rural-residential including grazing of horses and sheep. Agricultural infrastructure is present in the north eastern section and includes two dwellings, four sheds and horse yards.

The historical land-use on the site is orcharding in the western, northern and central sections and grazing in the southern section.

5.2 Summary of council records

A planning certificate was obtained for Lot A DP408148, 277 Cargo Road, Orange NSW. Orange City Council has not received notice under the *Contaminated Land Management Act 1997* that the land is:

- significantly contaminated
- subject to a management order
- subject of an approved voluntary management proposal
- subject to an ongoing maintenance order
- subject to a site audit statement.

Review of the Section 10.7 certificate identified the site was not proclaimed to be a Mines Subsidence District.

Orange Local Environmental Plan (LEP 2011) has the site mapped as:

- Drinking water catchment
- Groundwater vulnerable
- Highly sensitive for terrestrial biodiversity

5.3 EPA databases

The site is not listed on the NSW EPA register of contaminated sites (21 March 2023) or sites notified to the EPA (8 March 2023).

No sites listed on NSW EPA register of contaminated sites or sites notified to the EPA have been identified within 1km of the site.

5.4 Safework NSW Storage of hazardous chemicals

A search of the SafeWork dangerous goods database was considered not necessary. One underground fuel storage tank was identified in the north eastern section of the site. No other tanks or use of fuel were identified from the searches and past land-uses.

5.5 POEO public register

The site is not listed on the NSW EPA POEO public register.

Sites listed on NSW EPA POEO public register have not been identified within 1km of the site.

5.6 Other government agency databases

The site is not listed on the following databases:

- National Liquid Fuel Facilities database
- The NSW Government PFAS Investigation Program
- Defence PFAS Investigation Program
- Defence PFAS Management Program
- Defence 3 Year Regional Contamination Investigation Program

- Airservices Australia National PFAS Management Program

No sites listed on government agency databases have been identified within 1km of the investigation area.

5.7 Sources of information

Site inspection 25 and 31 January and 2 February 2023 by Felipe Canavez of Envirowest Consulting Pty Ltd
NSW EPA records of public notices under the CLM Act 1997
Soil and geological maps
Historical aerial photographs (1964, 1973,1982, 1989, 1993, 1998, 2003, 2006, 2010, 2013, 2016, 2018, 2020, 2023) including NSW Government historical imagery, Google Earth and Nearmap
Orange LEP 2011

5.8 Review of historic aerial photographs, maps and plans

5.8.1 Aerial photographs

Year	Comment
1964	Land use on the northern and central sections of the site is orcharding. The southern section has been used for grazing. Sheds are visible in the northern section. No dwellings are evident within the property. Cargo Road is visible to north. Adjacent land-uses are grazing and orcharding.
1973	One dam is evident in the western section of the site.
1982	Two dwellings are evident in the north eastern section of the site.
1989	Additional sheds are evident south of the dwellings. Orchard coverage has reduced in the western section of the site.
1993	An additional dam is visible in the western section of the site.
1998	Tree coverage has been reduced on site indicating a reduction in the orcharding operations. A stockpile potentially containing foreign materials is visible in the central section of the site.
2003	Tree coverage has been reduced on site. Orcharding is restricted to the northern and central sections of the site. Western and southern sections of the site have been used for grazing.
2006	No changes evident on-site.
2010	Tree coverage has been reduced indicating orcharding operations have potentially ceased. A small remnant area of orcharding trees is visible in the central section of the site. Several stockpiles are visible on-site. Land-use is grazing.
2013	The site has been maintained by slashing. A horse yard is evident in the eastern section of the site.
2016	No changes evident on-site.
2018	Vegetation appears desiccated. Dams on-site are almost dry.
2020	No changes evident on-site.
2023	No changes evident on-site.

5.8.2 Topographic maps

The 1989 topographic map based in 1982 aerial imagery and field revision in 1987 depicts the site as two parts. Lot A comprises the central and northern sections and is depicted as an orchard and Pt. 95

comprising the southern section of the site is depicted as an area of scattered vegetation. Several buildings are depicted in the north eastern section of the site.

The current topographic map (Six Maps) depicts the northern section of the site as orchard with a dam in the western section. The southern section is depicted as vacant.

5.8.3 Historical parish maps

The site is situated in the parish of Orange, County of Wellington. Historical parish maps from 1897 to 1967 indicate the site comprises three portions. Portion 93 is owned by Mr W Burrows and Portions 94 and 95 are owned by Mr W Wylde.

5.8.4 Title search

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
14.02.1925 (1925 to 1936)	William Eslick (Orchardist) Sidney Augustus Eslick (Orchardist)	Volume 3695 Folios 227 & 228
06.11.1936 (1936 to 1951)	William Eslick (Orchardist) Christopher William Eslick (Orchardist)	Volume 3695 Folios 227 & 228
18.01.1951 (1951 to 1958)	Christopher William Eslick (Orchardist) (Transmission Application not investigated)	Volume 3695 Folios 227 & 228
13.06.1958 (1958 to 1958)	Reginald Allan Buckland (Orchardist) Guenevere Hazel Buckland (Married Woman)	Volume 3695 Folios 227 & 228
27.07.1958 (1958 to 2015)	Mario Vardanega (Orchardist)	Volume 3695 Folios 227 & 228 Then Volume 7686 Folio 188 Now A/408148
13.10.2015 (2015 to date)	# Celestina Maria Vardanega	A/408148

- current registered proprietor

5.9 Chronological list of site uses

Review of historical information suggests the site has a land-use history as mixed agriculture comprising orcharding in the central northern and western sections and grazing in the southern section of the lot until early 2000's. The orchard comprised apples, cherries and plums. The orchard operations ceased in the late 1990's and early 2000's.

Several sheds used for storage and packing of produce are evident in the north eastern section and two dwellings are evident from 1980's.

5.10 Heritage listings

The site is not listed on the following government heritage databases:

- Commonwealth Heritage List
- National Heritage List
- State Heritage Register
- Local Environmental Plan (Orange LEP 2011)

Several heritage items including homesteads and winery sheds are identified within 1km north, south and east of the site in the outskirts of Orange. The heritage items are not expected to have impacted on the contamination status of the site.

5.11 Buildings and infrastructure

Several buildings and structures are located in the north eastern section of the site comprising: two dwellings, four sheds, a horse yard a fuel pump and associated diesel underground storage tank (UST). The northern dwelling contained cement sheet walls and metal roof and the southern dwelling was brick with the roof comprising tiles. A septic tank was identified adjacent to the southern dwelling. The area adjacent to the dwellings located in the north eastern section of the site were inspected and no evidence of contamination was identified. An asbestos audit of the dwellings was not part of the scope of the works.

The eastern shed is the largest shed and used for fruit packing and farm machinery storage (Shed 1). The shed has corrugated metal walls and roof. Part of the walls in the northern section were timber and lined with wallpaper. Floor in the northern section was timber and floor in the southern section was earth. Pieces of vinyl lining material were identified on the timber floor section. Materials stored in the timber floor section included metals, timber, plastic, agricultural equipment and tools. A car was parked in the north western corner of the shed in a section of earth floor. Materials stored in the southern section included metal, timber and plastic materials and machinery including a lawnmower, trailer and a forklift. A dry white powder was identified on the floor and expected to be lime or fertiliser. A garage with earth floor was attached to the southern end of the shed and a tractor was being stored in the garage at the day of the inspection. Soil discolouration was identified under the tractor on the earth floor.

The western general storage shed (Shed 2) has corrugated metal walls and roof and part concrete floor. The shed was used for general storage of furniture and tools. The southern section of the shed was earth floor and used for storage of farming material, drums, a lawnmower and a tractor. Bottles of engine oil and coolant were identified in the southern section. Soil discolouration was identified in the southern section of the shed.

The chemicals storage shed (Shed 3) walls and roof are corrugated metal and the floor was earth. The shed was used for storage of crop pesticides and chemicals. During the inspection containers of paint, pesticides, wetting agents and fungicides were identified in the shed. Shed 3 contained a mixing area attached to the south comprising a corrugated metal roof and a water tank. The area was covered in grapevine. Floor in the mixing area was earth.

A small shed (Shed 4) was observed south of Shed 1 comprising corrugated metal walls and roof and earth floor. The shed was used for general storage of equipment including metal, plastic, a dog kennel and a ute canopy. No evidence of contamination was observed in Shed 4 during the inspection.

A fuel pump and associated UST were identified adjacent to Shed 2 to the east. The fuel pump was manual and the hose was damaged. The UST is expected to be diesel, with a 500 gallon capacity and buried to a depth of 1.8m. No surface staining was observed around the pump.

A water tank with a piece of cement sheet assumed to be asbestos was identified in the central section of the paddock.

The orchard was not irrigated. No irrigation water source was identified in the investigation.

The southern section of the site contained two sheds used as animal shelters. The shelters comprised corrugated metal walls and roof and earth floor. The eastern animal shelter was covered in blackberry.

Two stock dams are present in the western section of the site.

Farm fences are located across the site to divide the site into paddocks and horse yards.

5.12 Spills, losses or discharges

Soil discolouration potentially due to leaks and spills of fuels and fluids was observed in areas of Sheds 1 and 2 from machinery storage.

Damage on the fuel pump hose was identified during the inspection.

No records for spills or losses on the site were available. No records for discharges to land, water or air were available.

5.13 Relevant complaint history

None expected.

5.14 Previous investigations

None known.

5.15 Historical neighbouring land-use

North – Cargo Road, agricultural, grazing
South – Grazing, Great Western Railway, orchard
East – Rural, orchard, Witton Place, residential
West – Cargo Road, rural

Historical neighbouring land-uses are not expected to have impacted on the site.

5.16 Contaminant sources

Potential exists for contaminating activities to have been undertaken on site which may impact on the suitability for the proposed land-use. Orcharding and grazing land-uses may have resulted in application of pesticides in routine management of fruit trees and pastures. Fertilisers applied may contain heavy metal contaminants. Pesticide and fertiliser use is expected to be less in the grazing areas of the site compared with the orcharding areas. No bio solids are known to have been applied to the site.

Leaks and spill of oils and fuels potentially have occurred due to the storage of agricultural machinery in the shed areas and from the fuel pump and UST area. The fuel pump hose was damaged. Soil discolouration was observed in Sheds 1 and 2 from machinery storage.

Leaks and spill of chemicals potentially have occurred in Shed 3 and mixing area.

Storage of foreign material on-site was identified during the site inspection. Inert foreign materials comprising scrap metal, timber, plastic, drums and equipment were observed during the inspection in the north eastern section of the site. Inert foreign materials are considered an amenity issue. Potential contaminants associated with foreign materials are heavy metals and hydrocarbons.

Two areas of disturbed soil were identified in the central northern section of the site. Stockpiles containing timber, plastic, furniture, metal, coal, clothes and ash were observed in these areas. The stockpiles have been burnt and may potentially be contaminated with heavy metals and hydrocarbons.

Cement sheeting suspected to contain asbestos was used to cover a water tank located in the central section of the site. The material used as floor liner in the packing shed may potentially contain asbestos.

5.17 Contaminants of concern

Based on the orcharding and grazing land-use the contaminants of concern persistent in the soil are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Organochlorine pesticides (OCP)
- Organochlorine and organophosphorus pesticides (OC/OPP)

Non-persistent contaminants of concern in the soil are:

- Synthetic pyrethroids
- Crop oils.

Based on the storage of foreign materials, fuels and pesticides the contaminants of concern are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Organochlorine and organophosphorus pesticides (OC/OPP)

Based on the presence of cement sheeting and floor lining material the contaminants of concern are:

- Asbestos

5.18 Integrity assessment

The site history was obtained from a site inspection and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

6. Site condition and surrounding environment

6.1 Site inspection

The site was inspected by Felipe Canavez of Envirowest Consulting Pty Ltd on 25 and 31 January and 2 February 2023.

6.2 Land-use

The site current use is rural-residential including horse and sheep grazing. Two dwellings are located on-site. The northern dwelling appears vacant. Three sheds (1, 2 and 4) in the north eastern section are used for general storage of farm machinery and equipment. One shed (Shed 3) is used for storage of chemicals. Two sheds located in the southern section are used as animal shelters.

6.3 Current neighbouring land-use

North – Cargo Road, agricultural, grazing
South – Grazing, Great Western Railway, orchard
East – Large-lot residential, Witton Place, residential
West – Grazing, Cargo Road, rural

6.4 Surface cover and vegetation

Vegetation cover on the site was generally 100% dominated by pasture grasses included phalaris and clover. Broad leaved weeds were identified including thistle and Paterson's curse. Water-tolerant

vegetation including *Juncus* spp. was identified in wet areas around the dams. Scattered remnant apple trees occur across the site with a cluster of trees in the central eastern section of the site.

Two areas of disturbed soil were identified in the central section of the site.

6.5 Evidence of visible contamination

Soil discolouration was present in the sheds, including a potential residual lime or fertiliser stain in Shed 1, discolouration under a tractor in the garage at the rear of Shed 1 and next to the lawn mower in Shed 2.

Several chemical containers were observed in Shed 3 including paint, pesticides, wetting agents and fungicides including TOPAS and mancozeb.

Two areas of disturbed soil were identified in the central section of the site. Stockpiles containing timber, plastic, furniture, metal, coal, clothes and ash were observed in these areas. The stockpiles have been burnt.

Cement sheeting suspected to contain asbestos was used to cover a water tank located in the central section of the site. The material used as floor liner in the timber floor section of Shed 1 may potentially contain asbestos.

Foreign materials comprising scrap metal, timber, plastic, drums and equipment were observed within the sheds in the north eastern section of the site.

A car body was identified in the western section of the site.

No evidence of fill, sheep dips, mines or contaminating industrial activities was identified on the site.

No signs of settlement or subsidence was identified on the site.

6.6 Topography

The site morphology is an upper to mid-slope with gently inclined slopes to the west in the north western section and to the south east in the central and south eastern sections.

The southern section has the slopes inclined towards a drainage depression that traverses the central section in an approximate east-west direction.

Elevation is approximately 907 to 912 metres above sea level.

6.7 Soils and geology

The site is located within the Towac Soil Landscape. Soil in the Towac landscape consists of krasnozems and yellow podzolic/solodic soils. Parent material is *in situ* and colluvial-alluvial materials derived from basalt flows separated by layers of volcanic ash. Basalts are alkaline olivines, with trachytes and some shales and slates (eSPADE 2023).

Soils in the UST area comprised topsoil of brown sandy silt to 0.4m. Subsoils comprised dark reddish brown silty clay with trace gravel to 1.2m. Subsoil from 1.2m comprised dark red silty clays with medium plasticity to a depth of 2.0m.

6.8 Water

6.8.1 Surface water

Two dams are located on the site for use as stock watering. Surface water in the northern, central and western sections is expected to infiltrate or flow into the dams and off-site to the west. Surface water in the southern section is expected to flow to the drainage line located in the centre of the area and west.

Surface water infiltrates in the soil or flows off-site to a system of unnamed creeks and dams located to the west emptying in Molong Creek located approximately 1.7km west of the site.

6.8.2 Groundwater

No groundwater bores were identified on the site on the NSW Government Water NSW website (2023). Six registered groundwater bores are identified within 500m of the site on the NSW Government Water NSW website (2023). The bores are licenced for stock, domestic and irrigation. Water-bearing zones (WBZ) for bores which information is available was from 16m to 58m in silty clay, shale and basalt. Standing water level was from 8.6m.

No.	Date drilled	Location	SWL (m)	Use	Status
GW802690	22/08/2003	182m NE	10.0	Domestic	Supply Obtained
GW064525	1/11/1987	425m SW	8.6	Stock, domestic	Unknown
GW053937	1/09/1981	305m N	-	Irrigation	Unknown
GW802391	13/12/2004	289m NE	-	Stock, domestic	Supply Obtained
GW056843	1/01/1983	421m W	18.3	Stock, domestic	Unknown
GW803608	14/07/2008	405m NE	29.0	Stock, domestic	Supply Obtained

6.9 Evidence of possible naturally occurring contaminants

No natural sources of PAH were identified.

The site is not mapped as an acid sulphate soil risk (State Government of NSW and Department of Planning, Industry and Environment 1998).

The site is not mapped as a geological unit with asbestos potential (State Government of NSW and Department of Regional New South Wales 2015).

6.10 Environmentally sensitive features or habitats

The site is identified as a drinking water catchment, as an area of vulnerable groundwater and sensitive for biodiversity (Orange LEP 2011).

The Molong Creek is considered a moderately disturbed ecosystem due to urban and agricultural runoffs and is located approximately 1.7km west of the site.

No additional environmentally sensitive features or habitats are located on the development area.

6.11 Integrity assessment

The site history was obtained from a site inspection and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

7. Conceptual site model

7.1 Contaminant sources

Potential exists for contaminating activities to have been undertaken on site which may impact on the suitability for the proposed land-use. The historic mixed agricultural land-use comprising grazing and

orcharding is expected to have resulted in application of pesticides, fertilisers and contaminating activities to the site.

Foreign materials and chemicals stored in the sheds and across the site may have resulted in the application of contaminants.

The areas of disturbed soils associated with stockpiles containing burnt and unburnt foreign materials may have resulted in the application of contaminants.

Cement sheeting and the vinyl material used as floor liner in Shed 1 potentially contain asbestos.

7.2 Contaminants of concern

Based on the orcharding and grazing land-use and site inspection the contaminants of concern are persistent pesticides in the grazing, orchard and dams areas:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Organochlorine and organophosphorus pesticides (OC/OPP)

Based on the storage of fluids, fuels and chemicals the contaminants of concern in the potential areas of environmental concern are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Organochlorine and organophosphorus pesticides (OC/OPP)

Based on the presence of cement sheeting and the floor lining material the contaminant of concern is:

- Asbestos

7.3 Potential receptors

The proposed land-use of the site is residential. The site has historically been used for mixed agriculture comprising orcharding and grazing.

Human receptors include:

- Residents (adults and children)
- Visitors
- Site workers
- Construction workers
- Intrusive maintenance workers

Ecological receptors include:

- Flora and fauna on the site and adjacent to the site
- Aquatic flora and fauna receptors off-site

7.4 Exposure pathways

Pathways for exposure to contaminants are:

- Dermal contact following soil disturbance
- Ingestion and inhalation after soil disturbance
- Surface water and sediment runoff into waterways
- Leaching of contaminants into the groundwater
- Direct contact of flora and fauna with the soil

7.5 Source receptor linkages

Potential source pathway receptor linkages are identified to enable evaluation of any adverse impact on human health or ecology.

The proposed land-use of the site is residential and human receptors to the investigation area are likely. Proposed users of the site may have a risk of exposure if contaminants are present and the soil is disturbed. Residents, visitors, construction workers and intrusive maintenance workers may potentially be receptors to soil contaminants through direct contact to soil which includes ingestion and dermal contact.

The contaminants of concern include volatiles. Inhalation may occur as a result of soil disturbance and dust production. Major soil disturbance before and after the development of the site is considered unlikely. Soil disturbance during construction and development of the site is expected to be accompanied by erosion control measures which will reduce the incidence of dust production.

Vegetation on the site may be potential receptors to soil contamination through direct uptake of contaminants.

The source receptor linkage to aquatic organisms and ecosystems is considered incomplete as the site is well vegetated and movement of sediments from the site is unlikely. During construction work it is expected that erosion control measures will be implemented and movement of sediment off site will be unlikely. Following development of the site it is expected that vegetation or hard surfaces will be re-established which will control sediment movement from the site. The nearest waterway to the site is the Molong Creek and it is not expected that contaminants from the site will be transported to aquatic receptors within the creek. The Molong Creek is considered to be a moderately disturbed ecosystem.

The site is mapped as a groundwater vulnerable area. Groundwater is not identified as a potential receptor to contamination as potential contamination occurs on the surface or depths up to 2.0m and groundwater is identified at depths greater than 8.0m. Clay subsoils restrict downward movement of potential contaminants.

Source/contaminants	Transport	Potential exposure pathways	Receptors
☒ Pesticides Heavy metals Organochlorine pesticides (OCP) Organophosphorous pesticides (OPP)	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☐Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors
☒ Fertilisers Heavy metals	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☐Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors
☒ Foreign materials Heavy metals Hydrocarbons OCP OPP Asbestos	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☒Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors

☒ Storage of fuels and chemicals (heavy metals, hydrocarbons, pesticides) Heavy metals Hydrocarbons OCP OPP	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☒Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors
☒ UST Hydrocarbons	☐Wind ☐Sedimentation ☐Groundwater ☐Surface water ☒Volatilisation	☒Direct contact (ingestion and absorption) (human and environment) ☒Inhalation ☐Runoff ☐Leaching	☒Residents (adults and children) ☒Visitors (adults and children) ☒Construction workers ☒Intrusive maintenance workers ☒Vegetation ☐Aquatic receptors

☒Potential, ☐unknown/unlikely

8. Data quality objectives (DQO)

8.1 State the problem

A residential development is proposed for the site. Land-use will change from agriculture to residential. The agricultural land-use may have resulted in application of pesticides, fertilisers and contaminating activities to the site.

8.2 Identify the decision

The proposed land-use is residential. The decision problem is, do the levels of potential contaminants exceed the assessment criteria.

8.3 Identify the inputs decision

Investigation of the site is required to identify any potential contaminants from historical land-use. The inputs include:

- Field observation of aesthetic impacts or visible contamination
- Soil samples from the investigation area

8.4 Define the boundaries of the study

The investigation area is 277 Cargo Road, Orange NSW.

8.5 Develop a decision rule

Data collected for the purpose of the contamination investigation must be sufficiently accurate to be representative. The accuracy will be assessed by determination of:

- Current and historical land-use to describe potential contamination sources
- Site setting, potential receptors and pathways
- Soil samples to characterise potential contamination and analysis at accredited laboratories.

The adopted criteria is suitability for residential land-use and includes the thresholds listed in Schedule B1 of the NEPM (1999) *Guideline on Investigation Levels for Soil and Groundwater*. The data must be sufficiently representative to identify the extent of contamination and if further sampling and analysis is needed to delineate the nature and extent of contamination.

The decision rule for the investigation are:

- If the contamination levels were less than the adopted levels are potential risks low and acceptable

- If the levels were equal or greater that the investigations levels will exceedances affect the suitability for the proposed land-use.

8.6 Specify acceptable limits on the decision errors

A decision error in the context of the decision rule would lead to either underestimation or over estimation of the risk level associated with the property. Decision errors include:

- Limitations in available site history information
- Constraints associated with the ability to access certain areas of a site
- Errors in the sampling plan
- Data quality including comparability, representativeness and accuracy for data collection and analysis
- Analytic data validation

Where sample analysis is undertaken the quality of the data collected was assessed on a range of factors including:

- Documentation and data completeness
- Reference to relevant guidance documents
- Consistency of methodology
- Data quality including comparability, representativeness and accuracy for data collection and analysis
- Analytical data validation
- The 95% upper confidence interval of average levels of samples collected is less than the threshold levels, the results are less than 250% of relevant thresholds and the standard deviation is less than 50% of the assessment criteria.

8.7 Optimize the design for obtaining data

The methodology present in Sections 9 and 10 presents a framework for the contamination investigation which has been designed to meet the scope objectives and the nominated DQO.

Optimisation of the data collection process was informed by a review of historical information and observations made at the time of site inspection. The sampling was used to inform the potential contamination status of the site. The scope of work was undertaken to a level of accuracy and confidence in the ASC NEPM (NEPC 1999).

Analytes included heavy metals, TRH (C6-C40), BTEXN, PAH, OCP, OPP and asbestos.

9. Sampling analysis plan and sampling methodology

9.1 Sampling strategy

9.1.1 Sampling design

Visual inspections were undertaken over the site for indicators of contamination.

A systematic sampling pattern was adopted for the site. Uniform management practices are expected to have occurred across the site.

A systematic sampling pattern was adopted to assess the UST.

A judgemental sampling pattern was adopted to assess potential areas of environmental concern.

A judgemental sampling pattern was adopted to assess dam sludge.

9.1.2 Sampling locations

Discrete soil samples were collected from the site on an approximate 30m grid pattern. A total of 122 discrete soil samples were collected from the general site and analysed for heavy metals. A total of 30 discrete samples were analysed for OCP.

Twenty one soil samples were collected from potential areas of environmental concern. Sampling locations at areas of environmental concern were selected based on the most likely location of contaminants.

Three soil samples were collected from the boreholes drilled around the UST location to a depth of 2.0m

Two sludge samples were collected from the dams.

One sample of the floor lining material in Shed 1 was collected for asbestos identification.

The sampling locations are described in Figures 3, 4 and 5.

9.1.3 Sampling density

The sampling density can detect a potential hot spot across the general site with a radius of 18m at a 95% level of confidence.

The sampling frequency is in accordance with the minimum recommended by EPA (2022).

The number of samples collected from areas of environmental concern are expected to be sufficient to enable preliminary assessment.

9.1.4 Sampling depth

Any heavy metals or persistent pesticides present are generally immobile and expected to be contained in the 0 to 100mm which was the target sampling depth as minimal soil disturbance has occurred.

Samples from potential areas of environmental concern were collected from the 50 to 150mm soil layer to enable assessment of volatile hydrocarbons. Potential contaminants are expected to originate from the soil surface.

Boreholes were drilled on the site to up to 2.0m to enable assessment of the UST. Samples were screened for VOC using a PID and collected from a depth of 2.0m, considered representative of the bottom of the tank.

9.2 Analytes

Discrete soil samples collected from the general site were evaluated for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury and OCP. Heavy metals and OCP were identified as the contaminants of concern possibly present as a result of agricultural activities.
Discrete soil samples collected from areas of environmental concern were analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, TRH (C6-C40), BTEXN, PAH, OCP and OPP (Table 1).

Samples collected from the UST were screened onsite for volatile organic compounds (VOC) with a MiniRae photoionization detector (PID) using the headspace method and analysed for TRH and BTEXN.

9.3 Sampling methods

9.3.1 General site and areas of environmental concern

Soil samples from the general site and areas of environmental concern were taken using a stainless steel hand spade. Soil was taken at each individual sampling location below the vegetative and detrital layer. Discrete soil samples were transferred directly to a solvent rinsed glass jar with a Teflon lid.

Boreholes were drilled with an EZIPROBE ute mounted drilling rig with solid auger and soil samples collected directly from the extracted soil core or auger tip. Soil samples were transferred directly to a solvent rinsed glass jar with a Teflon lid.

Tools were decontaminated between sampling locations to prevent cross contamination by: brushing to remove caked or encrusted material, rinsing with clean tap water and allowing to air dry or using a clean towel.

The sample log is presented in Appendix 2.

Table 1. Schedule of samples and analyses

Sample ID	Location	Depth (mm)	Analysis undertaken
CR1 to CR123	General site	0-100	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), Nickel (Ni), zinc (Zn), mercury (Hg), selected samples analysed for organochlorine pesticides (OCP)
SL1	Dam 1	0-100	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP and Organophosphorous pesticides (OPP)
SL2	Dam 2	0-100	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP, OPP
HS1	Car body	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, OCP, OPP mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH)
HS2	Foreign materials - Stockpile 1	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS3	Western animal shelter	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS4	Foreign materials - Stockpile 2	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS5	Eastern animal shelter	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS6(100)	Pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS7(200)	Pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS8(100)	Pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS9(200)	Pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS10	Downslope of pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS11	Downslope of pesticide mixing area	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS12	Pesticide storage shed	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS13	Pesticide storage shed	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS14	Pesticide storage shed	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS15	Pesticide storage shed	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS16	Soil discolouration - general storage shed 2	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS17	General storage shed 2	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS18	Soil discolouration – attached garage - shed 1	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS19	Soil discolouration - shed 1	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS20	Garage - general storage shed 1	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
HS21	Fuel pump	50-150	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP
BH1(2000)	North of UST	50-150	TRH, BTEXN
BH2(2000)	East of UST	50-150	TRH, BTEXN
BH3(2000)	South of UST	50-150	TRH, BTEXN

10. Quality assurance and quality control

10.1 Sampling design

The sampling program is intended to provide data as to the presence and levels of contaminants.

Discrete soil samples were collected from the general site on a systematic grid pattern of approximately 30 metres. This sampling density will enable the detection of an area with an elevated concentration on a radius of 18m with a 95% confidence level.

The number of sampling locations is in accordance with the recommended density in the EPA sampling guidelines.

Boreholes were drilled around the UST location on a systematic pattern of 4 metres. This sampling density will enable the detection of an area with an elevated concentration on a radius of 2.4 metres across the site with a 95% confidence level. Boreholes were drilled to a depth of 2.0m, slightly below the depth of the bottom of the tank.

Sampling density of areas of environmental concern is expected to the sufficient to enable preliminary characterisation.

10.2 Field

The collection of samples was undertaken in accordance with accepted standard protocols (NEPC 1999).

All discrete samples were analysed for arsenic, cadmium, chromium, hexavalent chromium, copper, lead, nickel, zinc and mercury. Selected samples were analysed for OCP. Two samples were analysed for clay content, pH and cation exchange capacity (CEC). Discrete soil samples collected from areas of environmental concern were additionally analysed for heavy metals, OCP, OPP, TRH, BTEXN and PAH.

Samples collected from the UST were screened onsite for volatile organic compounds (VOC) with a MiniRae photoionization detector (PID) using the headspace method and analysed for TRH and BTEXN. Three boreholes were drilled to a depth of 2.0m adjacent to the tank location.

Sludge samples collected from the dam were analysed for heavy metals, OCP and OPP.

Sampling equipment was decontaminated between each sampling event. The appropriate storage conditions and duration were observed between sampling and analysis. A chain of custody form accompanied the samples to the laboratory (Appendix 3).

A single sampler was used to collect the samples using standard methods. Soil collected was a fresh sample from soil corer. After collection the samples were immediately placed in new glass sampling jars and placed in a cooler.

Nine duplicate samples were collected. No field blank, rinsate, trip blank or matrix spikes were submitted for analysis. Some samples from all batches did not contain contaminants which confirm the absence of cross contamination during transport and storage.

A field sampling log is presented in Appendix 2.

10.3 Laboratory

Chemical analysis was conducted by SGS Laboratories, Alexandria, which is NATA accredited for the tests undertaken. The laboratories have quality assurance and quality control programs in place, which include internal replication and analysis of spike samples and recoveries.

Method blanks, matrix duplicates and laboratory control samples were within acceptance criteria. The quality assurance and quality control report is presented together with the laboratory report as Appendix 3.

10.4 Data evaluation

The laboratory quality control report indicates the data variability is within acceptable industry limits. The data is considered representative and usable for the purposes of the investigation. Data quality indicators are presented in Appendix 1.

11. Assessment criteria

Soil criteria around the UST location was determined by measurement of volatile organic compounds (VOC) to determine the potential for volatile hydrocarbon contamination. These criteria have been developed based on experience to assist in the assessment of hydrocarbon contamination levels in soil. It is important to note these generalised criteria are only a guide and that the level of VOC varies with hydrocarbon type. Soil VOC generalised criteria are outlined in Table 2.

Table 2. Generalised soil VOC criteria

Volatile organic compounds (VOC)	Description
<20ppm	Negligible
20 to 60ppm	Low
60 to 300ppm	Moderate
>300ppm	Significant

The main reference for environmental site assessment in Australia is the ASC NEPM (NEPC 1999 rev 2013). This document includes criteria for use in evaluating potential risk to human health and ecosystems from chemical impacts, which are presented as generic investigation levels and screening levels appropriate to a Tier 1 risk-based assessment applicable for site assessment. The application of these investigation levels and screening levels is subject to a range of limitations, and their selection and use must be in the context of a conceptual site model (CSM) relating to the nature and distribution of impacts and potential exposure pathways.

The proposed land-use is residential and appropriate initial criteria are described in *Guideline on Investigation Levels for Soil and Groundwater* (NEPC 1999).

The criteria lists health investigation levels (HIL) for a range of land-uses. The appropriate initial comparison for the site is residential (HIL A).

The NEPC (1999) also provides health screening levels (HSL) for hydrocarbons in soil. The HSLs have been developed to be protective of human health for soil types, depths below surface and apply to exposure to hydrocarbons through the predominant vapour exposure pathway. The appropriate HSL for the site is listed in Table 5. TRH>16 have physical properties which make the TRH fractions non-volatiles and therefore these TRH fractions are not applicable for vapour intrusion.
Ecological investigation levels (EIL) have been developed for the protection of terrestrial ecosystems for selected metals and organic substances in the soil in the guideline (NEPC 1999). Ecological screening

levels (ESL) assess the risk to terrestrial ecosystems from petroleum hydrocarbons in the soil. The EILs and ESLs consider the properties of the soil and contaminants and the capacity of the local ecosystem to accommodate increases in contaminant levels.

Two samples were collected for assessment of cation exchange capacity (CEC), clay content and pH. The average result was adopted in the calculations for EIL (Table 3). The result indicates CEC of soils is 4.3meq/100g, clay content of 3.5%, pH value of 5.0. Organic carbon content for soils in the locality are typically 4% (eSPADE v2.2). The proposed land-use is residential. The contaminants have been identified in the soil for at least two years and are considered aged. The ASC NEPM EIL calculation spreadsheet was used to determine the EIL. Default values for ambient background concentrations were adopted.

Historical land-use on the southern paddock indicated a grazing land-use. The grazing land-use is not expected to have been impacted by the same or similar contaminating activities as the orcharding area and would not have been impacted by the same magnitude. EPA (2022) describes such areas are suitable for determining the ambient concentration of metals in soil. The average chromium, copper, nickel and zinc results for samples collected from the southern section have been adopted as the ambient background concentration (ABC) for these metals.

Management limits have been developed to assess petroleum hydrocarbons following evaluation of human health and ecological risks (NEPC 1999). Management limits are applicable as screening levels after consideration of relevant ESLs and HSLs. The appropriate management limit for the site is listed in Table 5.

Chromium is analysed as total chromium which is the sum of chromium (III) and chromium (VI). Chromium (VI) is a potential contaminant from industrial processes including ferrochrome production, electroplating, pigment production and tanning (WHO 1998). Chromium (VI) is reduced to chromium (III) when it comes into contact with organic matter in biota, soil and water. Chromium in the environment is present in the trivalent state (WHO 1998).

Asbestos screening levels for residential land-use is no visible asbestos on the surface. The threshold for bonded asbestos is 0.01% w/w of soil and 0.001% w/w soil for friable asbestos.

Table 3. Soil properties for EIL calculation

Analyte	pH	CEC	Clay (%)
CR44	4.9	4.6	3.0
CR109	5.0	3.9	4.0
Average	5.0	4.3	3.5

Table 4. EIL Calculation sheet, residential land-use

Analyte	Rationale	ABC (mg/kg)	EIL (mg/kg)
Arsenic	Generic	-	100
Chromium (III)	Clay content 3.5%	8.4	290
Copper	CEC 4.3meq/100g, pH 5.0, organic carbon 4%	17.1	95
Lead	Generic	-	1,100
Nickel	CEC 4.3meq/100g	2.4	25
Zinc	CEC 4.3meq/100g, pH 5.0	61.0	200
Naphthalene	Generic	-	170
DDT	Generic	-	180

ACL – added contaminant limit, ABC – ambient background concentration, EIL – Ecological investigation limit (ACL+ABC)

Table 5. Assessment criteria

Analyte	*HIL A*	*Residential HSL clay soil, 0m to <1m*	*Residential HSL clay soil, 1m to <2m*	*Residential EIL*	*Residential ESL fine soil*	*Management limits - Residential*
Arsenic	100	-	-	100	-	-
Cadmium	20	-	-	-	-	-
Chromium	100[1]	-	-	290[2]	-	-
Copper	6,000	-	-	95	-	-
Lead	300	-	-	1,100	-	-
Nickel	400	-	-	25	-	-
Zinc	7,400	-	-	200	-	-
Mercury	40	-	-	-	-	-
OCP	-	-	-	-	-	-
DD's	240	-	-	-	-	-
DDT	-	-	-	180	-	-
Endosulfan	270	-	-	-	-	-
F1 (TRH C6-10)	-	50	90	-	180	800
F2 (TRH C10-16)	-	280	NL	-	120	1,000
F3 (TRH C16-34)	-	-	-	-	1,300	3,500
F4 (TRH C34-40)	-	-	-	-	5,600	10,000
Benzene	-	0.7	1.0	-	65	-
Toluene	-	480	NL	-	105	-
Ethylbenzene	-	NL	NL	-	125	-
Xylenes	-	110	310	-	45	-
Naphthalene	-	5	NL	170	-	-
Benzo(a)pyrene	-	-	-	-	0.7	-
Carcinogenic PAH	3	-	-	-	-	-
PAH (Total)	300	-	-	-	-	-

HIL – health investigation levels, HSL – health screening level, EIL – ecological investigation levels, ESL – ecological screening level, NL – non limiting, NA – not applicable, [1] Threshold for Chromium (VI), [2] Threshold for Chromium (III)

12. Results and discussion

12.1 Site inspection

The site land-use is rural-residential comprising grazing of horses and sheep. The has been divided into paddocks with two dams located in the western section. The historical land-use is grazing in the southern section and orcharding in the remaining areas.

Vegetation was generally 100% dominated by pasture grasses and broad leaved weeds. Two areas of disturbed soil were identified in the central northern section associated with stockpiles containing timber, plastic, furniture, metal, coal, clothes and ash.

Shed 1 located in the eastern section of the site was historically used for fruit packing and machinery storage. A white powder was identified on the floor during the inspection and expected to be lime or fertiliser. A garage with earth floor containing a tractor was attached to the southern end of the shed. Discolouration was identified in the soil at the garage from historical oil leaks. Pieces of vinyl on the timber floor did not contain asbestos.

Shed 2 was used for storage of furniture and tools and had a concrete floor. The southern section was earth floor and used for storage of farming equipment, bottles of fluids, drums, a lawnmower and a small tractor. Soil discolouration was identified in the southern section of the shed. One underground fuel storage tank (UST) was identified east of Shed 2.

Shed 3 was historically used for chemicals storage with a mixing area attached. During the inspection paint, pesticides, wetting agents and fungicides were identified in the shed.

Shed 4 was located south of the packing shed comprising corrugated metal walls and roof and earth floor. Foreign materials were being stored at Shed 4 and no evidence of contamination was identified during the inspection.

A fuel pump and UST were identified east of Shed 2. The fuel pump hose was damaged. The fuel tank is expected to be diesel, with a 500 gallon capacity and buried to a depth of 1.8m.

A water tank with a piece of cement sheet with an estimated area of 0.5m^2 suspected to be asbestos was identified in the central section of the paddock.

The southern section of the site contained two animal shelters. The western animal shelter comprised corrugated metal walls and roof and earth floor. The eastern animal shelter comprised metal walls and roof and earth floor and was covered in blackberry. The shelters were vacant at the time of the inspection.

No evidence of fill, mines or contaminating industrial activities were identified at the site.

12.2 Analytical results

12.2.1 Orchard and grazing areas

Three soil samples (CR21, CR84 and CR107) exceeded the adopted EIL for copper (Appendix 5). The 95% UCL for soil copper levels was less than the adopted EIL (Table 6).

Three soil samples (CR114, CR116 and CR117) exceeded the adopted EIL for zinc (Appendix 5, Table A5.1). The 95% UCL for all zinc samples was less than the EIL (Table 6).

The 95% UCL for the other metals was less than the adopted thresholds (Table 6).

OCPs were generally not detected in the samples collected from the general site. DDs and DDT were detected in some samples at levels less than the adopted thresholds (Appendix 5). The 95% UCL for pesticides was less than the adopted threshold (Table 7).

Table 6. Summary of analytical results and threshold concentrations (general site) - heavy metals (mg/kg)

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
Arithmetic mean	5.48	0.30	11.34	27.36	25.79	2.77	34.76	0.05
Standard deviation	9.77	0.05	5.42	22.66	39.98	1.43	67.08	0.00
Maximum	62.00	0.80	29.00	130.00	240.00	8.70	510.00	0.08
Median	2.00	0.30	9.90	22.00	11.00	2.30	18.00	0.05
Confidence interval	1.73	0.01	0.96	4.02	7.09	0.25	11.90	0.00
95% UCL	7.22	0.31	12.30	31.38	32.88	3.03	46.67	0.05
Number	122	122	122	122	122	122	122	122
Health Investigation Levels – Residential land-use threshold (NEPC 1999)								
	100	*20*	*100[1]*	*6,000*	*300*	*400*	*7,400*	*40*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)								
	100	*-*	*290[2]*	*95*	*1,100*	*25*	*200*	*-*

[1] Threshold for Chromium (VI), [2] Threshold for Chromium (III)

Table 7. Summary of analytical results and threshold concentrations (general site) - Pesticides (mg/kg)

Sample ID	OCP	DDs	DDT
Arithmetic mean	1.00	0.13	0.10
Standard deviation	0.00	0.07	0.00
Maximum	1.00	0.03	0.10
Median	1.00	0.15	0.10
Confidence interval	0.00	0.03	0.00
95% UCL	1.00	0.15	0.10
Number	30	30	30
Health Investigation Levels – Residential land-use threshold (NEPC 1999)			
	-	*240*	-
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)			
	-	-	*180*

12.2.2 Areas of environmental concern

12.2.2.1 Sheds 1 and 2

Levels of zinc detected in the sample HS17 (210mg/kg) collected in the southern section of Shed 2 exceeded the adopted EIL (200mg/kg) (Table 8).

Levels of metals in the remaining samples collected around Sheds 1 and 2 were less than adopted thresholds (Table 8).

Low levels of OCP's below adopted thresholds were generally detected in samples collected from Sheds 1 and 2. Levels of OPP's were below the detection limit in Sheds 1 and 2 (Table 9).

Levels of TRH F2 (C10-C16) (400mg/kg) exceeding HSL (280mg/kg) and ESL (120mg/kg), levels of TRH F3 (C16-C34) (23,000mg/kg) exceeding the ESL (1,300 mg/kg) and management limits (3,500mg/kg) and levels of TRH F4 (>C34-C40) (7,300mg/kg) exceeding the EIL (5,600mg/kg) were identified in sample HS18 (Table 10). The sample was collected from the soil discolouration area potentially caused by leaks and spills of oil from machinery (Figure 7). The depth of the discoloured area is estimated to be 200mm deep.

Levels of TRH, BTEXN and PAH were below the detection limits and the adopted thresholds for the remaining samples analysed from Sheds 1 and 2 (Table 10).

The sample of vinyl used to line the timber floor in Shed 1 did not contain asbestos (Appendix 6).

12.2.2.2 Shed 3 – chemical storage and mixing areas

Levels of copper detected in the samples HS6(100) (98mg/kg) and HS8(100) (240mg/kg) from the pesticide mixing area and HS11 (140mg/kg) collected downslope of the mixing area exceeded the adopted EIL (95mg/kg). Levels of zinc exceeded the adopted EIL (200mg/kg) for sample HS8(100) (610mg/kg) (Table 8).

The levels of heavy metals for the remaining samples from Shed 3 were below the adopted thresholds (Table 8).

Low levels of OCP's were generally detected in samples from Shed 3, below the adopted thresholds. Levels of OPP's were below the detection limit for all samples (Table 9).

Levels of TRH F3 (C16-C34) (4,500mg/kg) exceeding ESL (1,300mg/kg) and management limits (3,500mg/kg) were identified in sample HS12 (Table 10) located in the northern section of the chemical storage shed (Figure 7).

Levels of TRH, BTEXN and PAH were below the detection limits and the adopted thresholds for the remaining samples from Shed 3 and mixing area (Table 10).

12.2.2.3 UST

Levels of zinc exceeded the adopted EIL (200mg/kg) for the sample HS21 (370mg/kg) collected below the fuel pump. The levels of the other metals were below the adopted thresholds (Table 8). Low levels of OCP's below the adopted thresholds were detected in sample HS21. Levels of OPP's were below the detection limit (Table 9). The exceedances are not from fuel tank activities.

Levels of TRH F3 (C16-C34) at 150mm exceeded the ESL in sample HS21 (1,500mg/kg) around the fuel pump (Table 10). No impact on vegetation was observed around the fuel pump from the levels of zinc and TRH. The exceedance was from leaks from the pump.

Levels of BTEXN and PAH were below the detection limits and the adopted thresholds for sample HS21 collected from around the base of the pump (Table 10).

The VOC screening values were considered negligible for samples from boreholes BH1, BH2 and BH3 collected from the boreholes across the UST. No odour of hydrocarbon was identified in the soil from the borehole locations. The drilling borelogs are presented in Appendix 7.

Levels of TRH and BTEXN were below the detection limits and the adopted thresholds for samples BH1, BH2 and BH3 collected from a depth of 2.0m across the UST location (Table 10).

12.2.2.4 Areas of disturbed soil and foreign material stockpiles

The levels of heavy metals were below the adopted thresholds for the samples from the disturbed soil areas (Table 8).

Low levels of OCP's below the detection limit and the adopted thresholds were detected in samples from the disturbed soil areas. Levels of OPP's were below the detection limit (Table 9).

Levels of TRH F3 (C16-C34) (19,000mg/kg) exceeding ESL (1,300mg/kg) and management limits (3,500mg/kg) and levels of TRH F4 (>C34-C40) (8,400mg/kg) exceeding ESL (5,600mg/kg) were identified in sample HS2 collected from soil adjacent to Stockpile 1. TRH F3 exceeding the ESL (1,300mg/kg) was identified in sample HS4 (1,800mg/kg) from soil adjacent to Stockpile 2 (Table 10).

Levels of benzo(a)pyrene and total PAH were detected in sample HS2 below the adopted thresholds.

Levels of BTEXN were below the detection limits and the adopted thresholds for samples from the disturbed soil area (Table 10).

12.2.2.5 Other areas of environmental concern

Low levels of heavy metals, pesticides and hydrocarbons were identified in the samples collected from the car body in the western section of the site and within the eastern and western animal shelters in the central section of the site. The levels of contaminants were below the adopted thresholds (Tables 8, 9 and 10).

The samples of sludge collected from the dams located in the western section of the site presented low levels of heavy metals and pesticides, below the health and ecological thresholds (Tables 8 and 9).

The area adjacent to the dwellings located in the north eastern section of the site were inspected and no evidence of contamination was identified. An asbestos audit of the dwellings was not part of the scope of the works. A septic tank was observed adjacent to the southern dwelling, any existing on-site waste treatment system should be decommissioned (Figure 2).

Table 8. Analytical results and threshold concentrations (areas of environmental concern) - heavy metals and PAH (mg/kg)

Sample ID	Location	Depth (mm)	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury	Carcinogenic benzo(a)pyrene	Total PAH
HS1	Car body	50-150	<1	<0.3	8.1	3.3	9	1.3	8.2	<0.05	<0.3	<0.8
HS2	Foreign materials stockpile 1	50-150	<1	<0.3	8.5	4.2	8	1.4	13	<0.05	0.4	1.8
HS3	Western animal shelter	50-150	<1	<0.3	6.9	4.0	7	1.3	10	<0.05	<0.3	<0.8
HS4	Foreign materials stockpile 2	50-150	<1	<0.3	6.9	3.0	7	1.1	7.4	<0.05	<0.3	<0.8
HS5	Eastern animal shelter	50-150	<1	<0.3	5.5	3.0	7	1.1	10	<0.05	<0.3	<0.8
HS6(100)	Pesticide mixing area – Shed 3	50-100	4	<0.3	34	**98**	51	5.6	170	<0.05	<0.3	<0.8
HS7(200)	Pesticide mixing area – Shed 3	100-200	4	<0.3	29	40	25	5.3	68	<0.05	<0.3	<0.8
HS8(100)	Pesticide mixing area – Shed 3	50-100	4	0.8	29	**240**	29	4.8	**610**	<0.05	<0.3	<0.8
HS9(200)	Pesticide mixing area – Shed 3	100-200	4	<0.3	19	78	20	5.1	63	<0.05	<0.3	<0.8
HS10	Downslope of pesticide mixing area – Shed 3	50-150	4	<0.3	33	52	16	5.8	120	<0.05	<0.3	<0.8
HS11	Downslope of pesticide mixing area – Shed 3	50-150	5	<0.3	31	**140**	20	4.5	55	<0.05	<0.3	<0.8
HS12	Pesticide storage – Shed 3	50-150	4	<0.3	46	42	27	7.3	110	<0.05	<0.3	<0.8
HS13	Pesticide storage – Shed 3	50-150	4	<0.3	31	30	18	19	46	<0.05	<0.3	<0.8
HS14	Pesticide storage – Shed 3	50-150	3	<0.3	24	72	20	4.5	78	<0.05	<0.3	<0.8
HS15	Pesticide storage – Shed 3	50-150	2	<0.3	14	21	100	3.6	120	0.05	<0.3	<0.8
HS16	Soil discolouration - general storage Shed 2	50-150	3	<0.3	33	28	22	5.2	83	<0.05	<0.3	<0.8
HS17	General storage Shed 2	50-150	2	0.5	11	20	110	3.9	**210**	0.27	<0.3	<0.8
HS18	Soil discolouration – attached garage - Shed 1	50-150	2	<0.3	11	68	9	2.1	77	0.05	<0.3	<0.8
HS19	Soil discolouration - Shed 1	50-150	3	<0.3	24	40	76	4.3	120	<0.05	<0.3	<0.8
HS20	Garage - general storage Shed 1	50-150	2	<0.3	20	27	16	9.2	100	<0.05	<0.3	<0.8
HS21	Fuel pump	50-150	5	<0.3	36	30	55	8.1	**370**	0.05	<0.3	<0.8
SL1	Western dam	0-100	4	<0.3	20	39	16	4.6	39	<0.05	-	-
SL2	Eastern dam	0-100	<1	<0.3	5.7	2.2	7	0.8	4	<0.05	-	-
Health Investigation Levels – Residential land-use threshold (NEPC 1999)												
			100	*20*	*100[1]*	*6,000*	*300*	*400*	*7,400*	*40*	*3*	*300*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)												
			100	*-*	*290[2]*	*95*	*1,100*	*25*	*200*	*-*	*0.7*	*-*

[1] Threshold for Chromium (VI), [2] Threshold for Chromium (III)

Table 9. Analytical results and threshold concentrations (areas of environmental concern) - OCP (mg/kg)

Sample ID	Location	OCP	DDs	DDT	Endosulfan	Total OPP
HS1	Car body	<1	<0.1	<0.1	<0.2	<1.7
HS2	Foreign materials stockpile 1	<1	0.1	<0.1	<0.2	<1.7
HS3	Western animal shelter	<1	<0.1	<0.1	<0.2	<1.7
HS4	Foreign materials stockpile 2	<1	<0.1	<0.1	<0.2	<1.7
HS5	Eastern animal shelter	<1	<0.1	<0.1	<0.2	<1.7
HS6(100)	Pesticide mixing area	6	5.8	4.8	<0.2	<1.7
HS7(200)	Pesticide mixing area	1	1.2	0.8	<0.2	<1.7
HS8(100)	Pesticide mixing area	1	1.4	0.7	<0.2	<1.7
HS9(200)	Pesticide mixing area	<1	0.2	<0.1	<0.2	<1.7
HS10	Downslope of pesticide mixing area	<1	0.3	0.1	<0.2	<1.7
HS11	Downslope of pesticide mixing area	<1	<0.1	<0.1	<0.2	<1.7
HS12	Pesticide storage shed	4	3.6	2.7	0.3	<1.7
HS13	Pesticide storage shed	3	2.2	1.6	0.3	<1.7
HS14	Pesticide storage shed	6	5.7	4.1	0.8	<1.7
HS15	Pesticide storage shed	1	1.4	1.1	<0.2	<1.7
HS16	Soil discolouration - general storage shed 2	2	2.1	1.8	<0.2	<1.7
HS17	General storage shed 2	10	9.9	9.2	<0.2	<1.7
HS18	Soil discolouration - machinery storage area - shed 1	<1	<0.1	<0.1	<0.2	<1.7
HS19	Soil discolouration - shed 1	<1	0.3	0.3	<0.2	<1.7
HS20	Garage - general storage shed 1	<1	0.2	0.2	<0.2	<1.7
HS21	Fuel pump	<1	0.8	0.4	<0.2	<1.7
SL1	Western dam	<1	<0.1	<0.1	<0.2	<1.7
SL2	Eastern dam	<1	<0.1	<0.1	<0.2	<1.7
Health Investigation Levels – Residential land-use threshold (NEPC 1999)						
		-	240	-	270	-
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)						
		-	-	180	-	-

Table 10. Soil analysis results (areas of environmental concern) – hydrocarbons (mg/kg)

Sample I.D	Location	Depth (mm)	TRH F1 (C6-C10)	TRH F2 (C10-C16)	TRH F3 (C16-C34)	TRH F4 (C34-C40)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Benzo(a)pyrene
HS1	Car body	50-150	<25	<25	180	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS2	Foreign materials stockpile 1	50-150	<25	110	**19,000**	**8,400**	<0.1	<0.1	<0.1	<0.3	<0.1	0.2
HS3	Western animal shelter	50-150	<25	<25	<90	<120	0.2	<0.1	<0.1	<0.3	<0.1	<0.1
HS4	Foreign materials stockpile 2	50-150	<25	61	**1,800**	330	<0.1	<0.1	<0.1	<0.3	<0.1	0.1
HS5	Eastern animal shelter	50-150	<25	<25	240	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS6(100)	Pesticide mixing area	50-100	<25	<25	120	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS7(200)	Pesticide mixing area	100-200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS8(100)	Pesticide mixing area	50-100	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS9(200)	Pesticide mixing area	100-200	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS10	Downslope of pesticide mixing area	50-150	<25	<25	120	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS11	Downslope of pesticide mixing area	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS12	Pesticide storage shed	50-150	<25	<25	**4,500**	1100	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS13	Pesticide storage shed	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS14	Pesticide storage shed	50-150	<25	<25	290	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS15	Pesticide storage shed	50-150	<25	31	230	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS16	Soil discolouration - general storage shed 2	50-150	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS17	General storage shed 2	50-150	<25	<25	170	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS18	Soil discolouration - machinery storage area - shed 1	50-150	<25	**400**	**23,000**	**7,300**	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS19	Soil discolouration - shed 1	50-150	<25	<25	380	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS20	Garage - general storage shed 1	50-150	<25	<25	520	450	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HS21	Fuel pump	50-150	<25	<25	**1,500**	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
BH1(2000)	North of UST	2000	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
BH2(2000)	East of UST	2000	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
BH3(2000)	South of UST	2000	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1
HSL – Residential clay soil												
		0 to <1m	*50*	*280*	*-*	*-*	*0.7*	*480*	*NL*	*110*	*5*	*-*
		1 to <2m	*280*	*NL*	*NL*	*NL*	*1.0*	*NL*	*NL*	*310*	*NL*	*-*
EIL – Residential												
			-	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*170*	*-*
ESL – Residential												
			180	*120*	*1,300*	*5,600*	*65*	*105*	*125*	*45*	*-*	*0.7*
Management limits – Residential												
			800	*1,000*	*3,500*	*10,000*	*-*	*-*	*-*	*-*	*-*	*-*

ND – not detected, NL – Not limiting, HIL – health investigation levels, HSL – health screening level, EIL – ecological investigation level, ESL – ecological screening level

13. Site characterisation

13.1 Environmental contamination

Contamination was identified in the following areas:

- AEC 1 comprises the two areas of disturbed soil associated with stockpiles of foreign materials and sparse vegetation located in the central and north eastern sections of the site (Figure 6):
    - AEC 1a Foreign materials Stockpile 1: Levels of TRH F3 exceeded the adopted ESL and management limits and TRH F4 exceeded the ESL in sample HS2 collected at a depth of 50 to 150mm from the disturbed soil area around the foreign material stockpile. The area of impacted soil is expected to be defined by the extension of disturbed soil, estimated to be 70m^2.

    - AEC 1b – Foreign materials in Stockpile 2: Levels of TRH F3 in sample HS4 collected at a depth of 50 to 150mm from the disturbed soil area north of the foreign materials stockpile exceeded the adopted ESL. The area of impacted soil is estimated to be 50m^2.

- The TRH in the foreign material stockpiles and adjacent soil is suspected to be from spills of hydrocarbon containing products and due to the burning events. The extent of the hydrocarbon impacted area is expected to be associated with the disturbed soil areas. Depth of impacted area has not been determined but estimated to be to 0.3m deep in both areas. Vegetation around the stockpiles was very sparse and appeared to be impacted by the hydrocarbon levels and burning events.

- AEC 2 – Attached garage of Shed 1 (Figure 7): Elevated levels of TRH F2 exceeding the HSL and ESL was identified in sample HS18 collected from an area of discoloured soil to a depth of 200mm. The TRH is expected to from spills or leaks of fuel and fluids from farm machinery. The discoloured area was approximately 1m^2 and the depth is approximately 200mm estimated on the day of the inspection.

- AEC 3a: Pesticide mixing area (Figure 7) - Levels of copper exceeding the EIL were identified in samples HS6(100), HS8(100) and HS11 located in the mixing area at the rear of Shed 3. Levels of zinc exceeding the EIL were identified in sample HS8(100). The copper and zinc levels are expected to be from leaching of the corrugated walls and from use of fungicides. The extension of the impacted area is expected to be delineated by the shed walls to north and samples HS8(100) and HS11 locations to south. The depth is estimated to be up to 150mm deep.

- AEC 3b: Shed 3 (Figure 7) - Elevated levels of TRH F3 exceeding the ESL and management limits was identified in sample HS12 collected from a depth of 150mm in the northern section of Shed 3. The TRH is expected to be from spills or leaks of hydrocarbon containing chemicals stored in the shed. The extent of the impacted area has not been determined but expected to be restricted to the northern section of the shed. The remaining samples collected in the shed did not contain TRH above the adopted thresholds. The depth is estimated to be up to 200mm deep. No ecological receptors are likely to access the site under the current land-use.

13.2 Chemical degradation production

Heavy metals and asbestos do not degrade.

Hydrocarbons will slowly degrade over time due to natural attenuation.

13.3 Exposed population

13.3.1 Human health

The asbestos is classified as non-friable and will be a health hazard to people accessing the site if disturbed.

Levels of hydrocarbons exceeding the HSL were detected in samples collected from the garage at the rear of Shed 1. Direct contact may affect sensitive receptors. The current land-use is rural-residential and access to the area by sensitive receptors should be restricted.

13.3.2 Ecological

Localised impacts on the environment may occur from the areas of environment concern containing copper and zinc.

Vegetation in the areas of disturbed soil was sparse and potentially impacted by levels of TRH and burning activities.

No other impacts on vegetation were identified at the remaining impacted areas. No ecological receptors were located within the shed locations.

The impacts are not expected to extend off-site or on groundwater.

14. Conclusions and recommendations

14.1 Summary

The site is an agricultural property currently used for grazing of sheep and horses on the western outskirts of Orange. Inspections were made on 25 and 31 January and 2 February 2023. Historical land-use included grazing in the southern section and orcharding in the remaining areas of the site. Two dams are located on the site.

Infrastructure comprising four sheds and two dwellings are located in the north eastern section of the site. A fuel pump and associated underground fuel storage tank (UST) were identified in the north eastern section of the site.

Vegetation cover on the site was generally 100% dominated by pasture grasses and broad leaved weeds. Scattered apple trees occur across the site with a cluster of remnant orchard trees located in the central eastern section. Two areas of disturbed soils associated with stockpiles of foreign materials were identified in the central and north eastern sections of the site. Two dams are located in the south western section of the site.

Potential areas of environmental concern identified from the site inspection and historical review were:

- Agricultural land-use
- Horticultural land-use as an apple orchard
- Infrastructure in the north eastern section including four sheds (Sheds 1, 2, 3 and 4) and two dwellings (Dwellings 1 and 2). A pesticide mixing area was identified south of Shed 3
- UST and fuel pump located in the north eastern section of the site
- Dam sludge
- Two areas of disturbed vegetation associated with stockpiles
- Two animal shelters located in the southern section of the site

Soil samples were collected at a grid pattern on the orchard and farming area. Samples were collected from the 0-100mm and analysed for the contaminants of concern.

Samples from potential areas of environmental concern were collected in a judgemental sampling pattern from the 50-150mm and samples from the UST area were collected to depths up to 2.0m.

Contaminants of concern within the grazing and orcharding areas are heavy metals and organochlorine pesticides (OCP).

Contaminants of concern within the potential areas of environmental concern are heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH) and organochlorine and organophosphorus pesticides (OC/OPP).

Contaminants of concern of samples from the dams are heavy metals and OC/OP pesticides.

The underground petrol storage system (UPSS) contaminants of concern are TRH and BTEXN.

The contaminated areas (AECs) identified across the site were:

- Hydrocarbon impacted soil in the areas of disturbed soil associated with stockpiles of foreign materials and sparse vegetation located in the central and north eastern sections of the site (AEC 1a and AEC 1b). The elevated levels were identified in samples collected from 50 to 150mm soil depth. The areas of impacted soil are estimated in 70m^2 and 50m^2 respectively and depths of up to 300mm.
- Hydrocarbon impacted soil from an area of discoloured soil located in the attached garage south of Shed 1 (AEC 2). The discolouration extends for about 1m^2 and to a depth of 200mm.
- Copper impacted soil at three locations in the pesticide mixing area at the rear of Shed 3 (AEC 3a). The contamination is up to 150mm deep.
- Zinc impacted soil at one location in the pesticide mixing area at the rear of the chemical storage shed - Shed 3 (AEC 3a). The contamination is up to 150mm deep.
- Hydrocarbon impacted soil in the northern section of Shed 3 (AEC 3b). The area is defined by surface staining and the location of the adjacent samples that were not impacted by high levels of hydrocarbons and estimated to be 200mm deep.

14.2 Assumptions in reaching the conclusions

It is assumed the sampling sites are representative of the site. An accurate history has been obtained and typical past farming practices were adopted.

14.3 Extent of uncertainties

The analytical data relate only to the locations sampled. Soil conditions can vary both laterally and vertically and it cannot be excluded that unidentified contaminants may be present. The sampling density was designed to detect a 'hot spot' with a radius of approximately 18m and with a 95% level of confidence.

Soil beneath concrete slabs were not assessed.

14.4 Suitability for proposed use of the site

The site requires remediation to be considered suitable for residential land-use.

14.5 Limitations and constraints on the use of the site

Nil

14.6 Recommendation for further work

Remediation of the areas of environmental concern (Table 11) is required to enable residential land-use and prevent environmental impacts. Remediation should be undertaken in accordance with a remediation action plan and will require a development application or notification to council.

A validation assessment should be undertaken to confirm effectiveness of remediation and that no residual contamination is detected after the completion of the works. The validation will determine suitability for residential land-use.

Table 11. Summary of areas of environmental concern (AECs)

AEC	Contaminant	Location	Area impacted
1a	Total recoverable hydrocarbons (TRH)	Disturbed soil and foreign material stockpile 1 – sample HS2	Approximately 70m^2, estimated depth 300mm
1b	TRH	Disturbed soil and foreign material stockpile 2 – sample HS4	No Approximately 50m^2, estimated depth 300mm
2	TRH	Garage attached to Shed 1 – sample HS18	Approximately 1m^2, estimated depth 200mm
3a	Copper and zinc	Pesticide mixing area – samples HS6, HS8 and HS11	Approximately 45m^2, estimated depth 150mm
3b	TRH	Chemicals storage shed – sample HS12	Approximately 10m^2, estimated depth 200mm

An unexpected finds procedure should be adopted for site development works.

15. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of the contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus important to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

This report, including data contained and its findings and conclusions, remains the intellectual property of Envirowest Consulting Pty Ltd. A licence to use the report for the specific purpose identified is granted for the persons identified in that section after full payment for the services involved in preparation of the report. This report should not be used by persons or for purposes other than those stated and should not be reproduced without the permission of Envirowest Consulting Pty Ltd.

16. References

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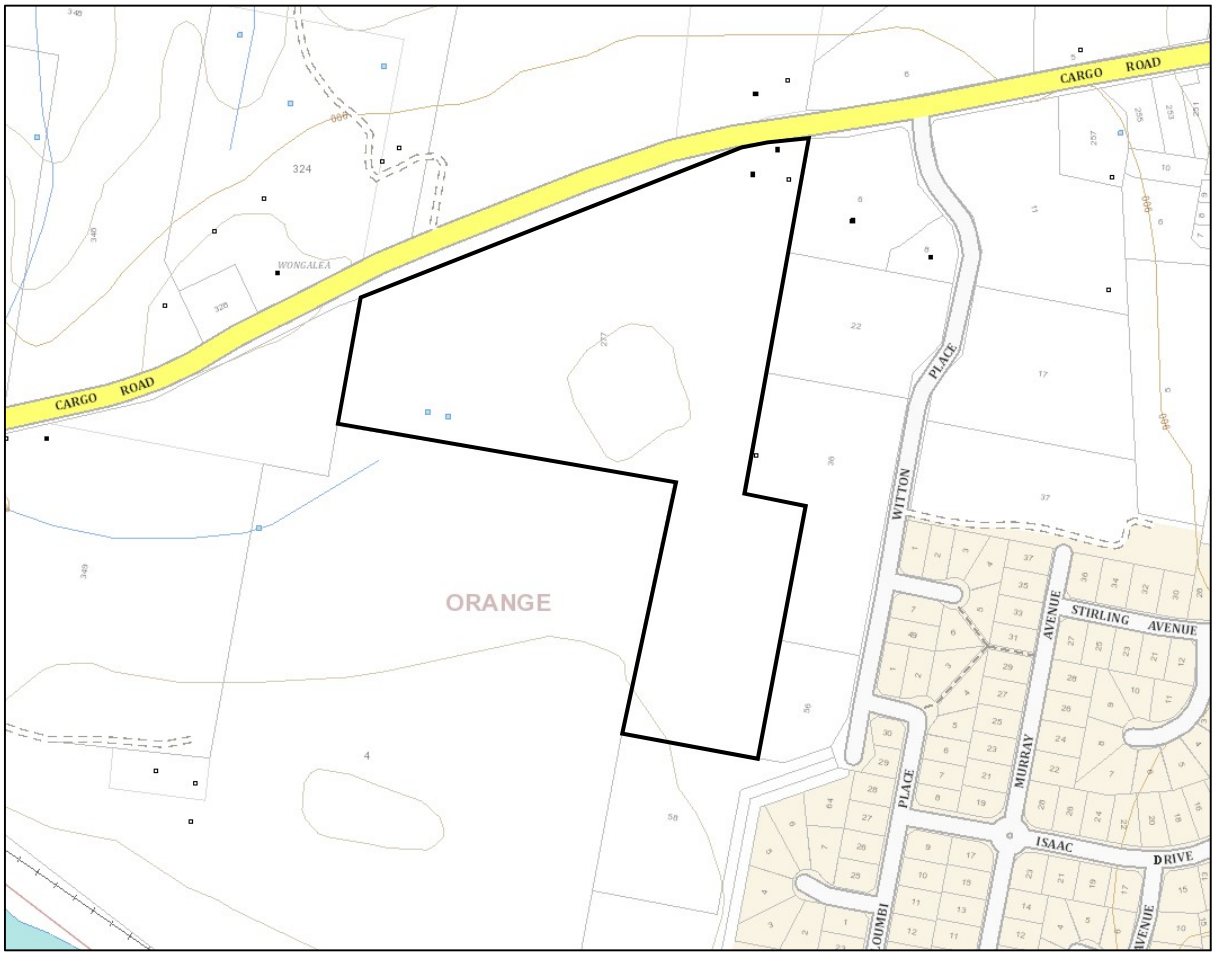
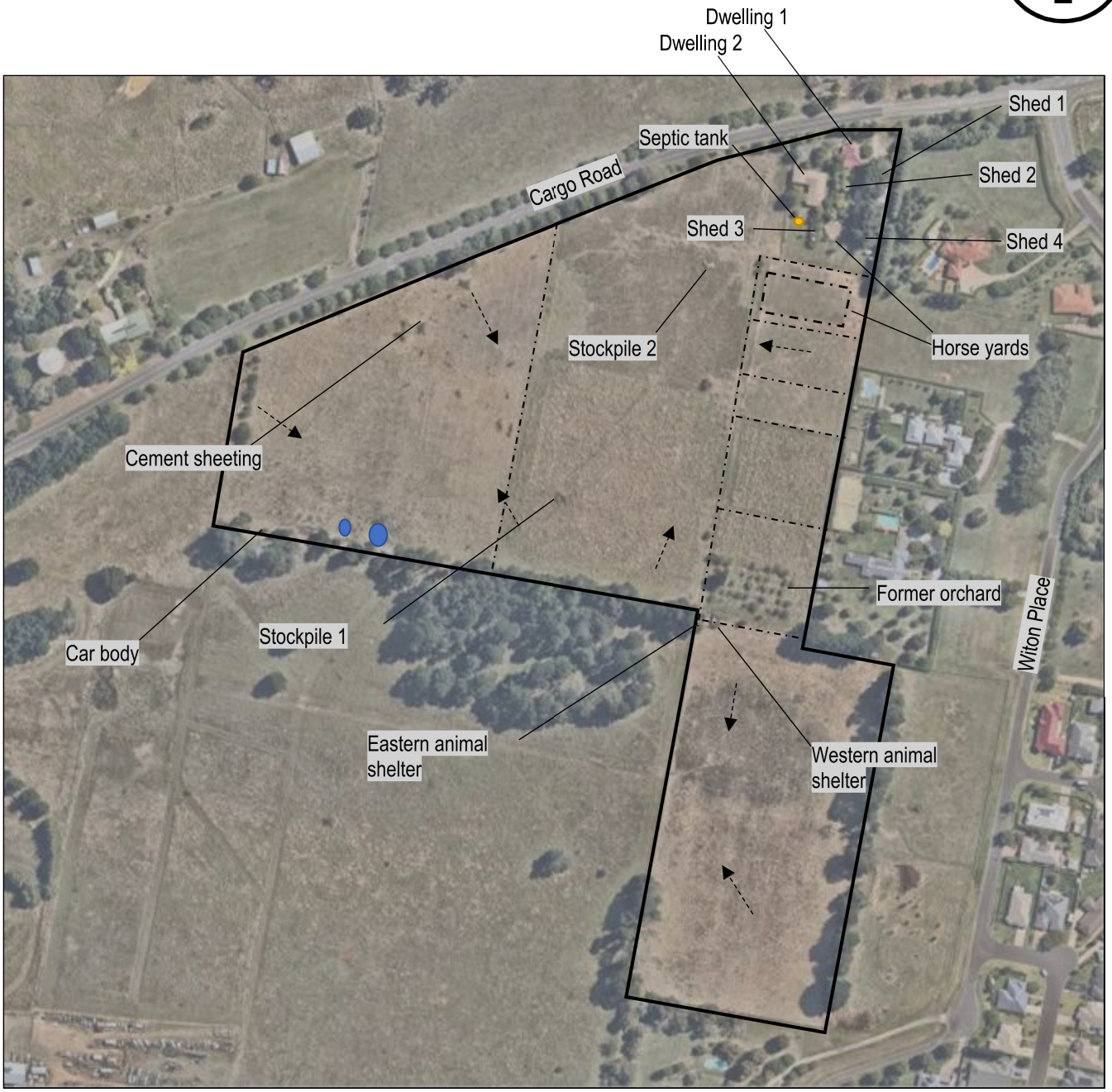
Figures



Legend

—— Investigation area

Figure 1. Site locality		
277 Cargo Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job: R15156c	Drawn by: FC	Date: 15/03/2023



Legend

- Investigation area
- Fence
- Slope
- Dam

Approximate Scale 1: 4,000

0 40 80 160m

Figure 2. Aerial image and site layout (2023)		
277 Cargo Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job: R15156c	Drawn by: FC	Date: 15/3/2023

Legend

— Investigation area

⊗ Sampling location

Approximate Scale 1: 1,700

0 17 34 68m

Figure 3. General site sampling locations		
277 Cargo Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job: R15156c	Drawn by: FC	Date: 15/3/2023

Legend

- Investigation area
- ⊗ Sampling location
- Dam

Approximate Scale 1: 3,300

0 33 66 132m

Figure 4. Potential areas of environmental concern sampling locations		
277 Cargo Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job: R15156c	Drawn by: FC	Date: 15/3/2023

Legend

Investigation area

UST estimated location

Sampling location

Fence

Shed

Approximate Scale 1:500

0 5 10 20m

Figure 5. Potential areas of environmental concern – north eastern section

277 Cargo Road, Orange NSW

Envirowest Consulting Pty Ltd

Job: R15156c	Drawn by: FC	Date: 15/3/2023

Legend

- Investigation area
- Sampling location
- Dam
- AEC extent (based on disturbed soil area)

Approximate Scale 1: 6,600

0 33 66 132m

Figure 6. Areas of environmental concern and exceedances		
277 Cargo Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job: R15156c	Drawn by: FC	Date: 27/3/2023

Legend

- Investigation area
- Sampling location
- Fence
- Shed
- UST estimated location
- AEC extent

Approximate Scale 1:500

0 5 10 20m

Figure 7. Areas of environmental concern and exceedances – north eastern section

277 Cargo Road, Orange NSW

Envirowest Consulting Pty Ltd

Job: R15156c	Drawn by: FC	Date: 27/3/2023

Figure 8. Photographs of the site

General site

General site

General site

General site

General site

General site

Car body

Foreign material stockpile 1

Foreign material stockpile 2

Eastern animal shelter

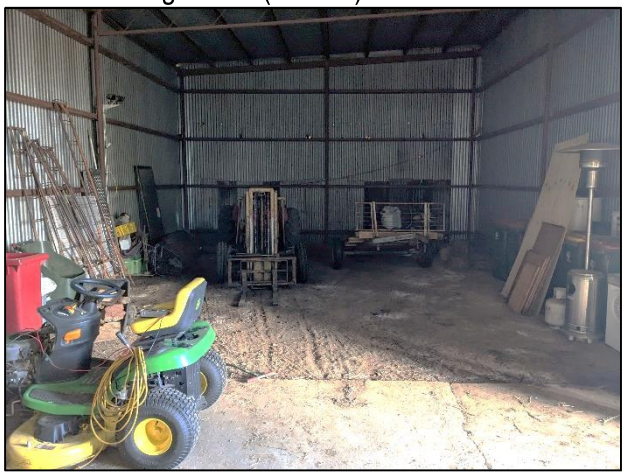
Septic tank

Pesticide mixing area

Pesticide storage shed (Shed 3)

General storage shed (Shed 2)

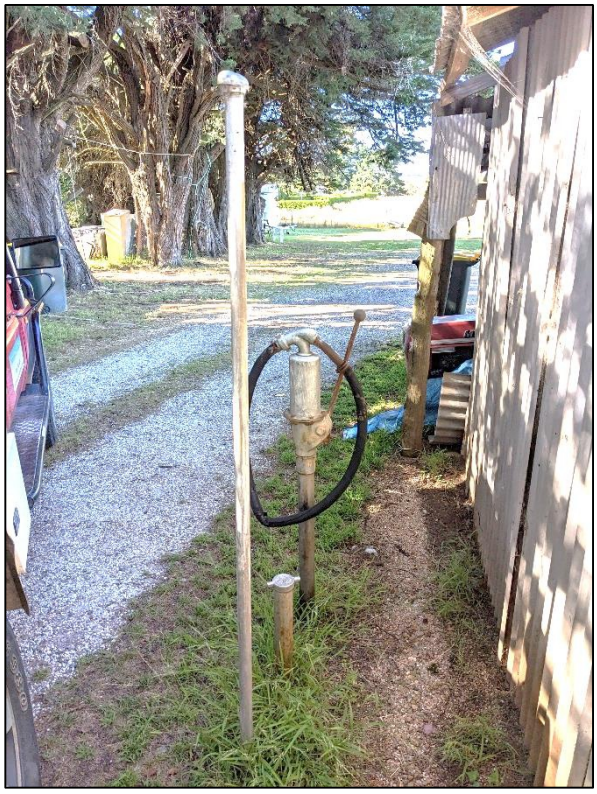
General storage shed/packhouse (Shed 1)



General storage shed (Shed 1)

Soil discolouration in Shed 1

Soil discolouration under tractor stored at the attached garage south of Shed 1



Fuel pump and vent

Kinks identified in the fuel pump hose

Cement sheeting on top of a water tank

Appendices

Appendix 1. Sample analysis, quality assurance and quality control (QAQC) report

1. Data quality indicators (DQI) requirements

1.1 Completeness

A measure of the amount of usable data for a data collection activity. Greater than 95% of the data must be reliable based on the quality objectives. Where greater than two quality objectives have less reliability than the acceptance criterion the data may be considered with uncertainty.

1.1.1 Field

Consideration	Requirement
Locations and depths to be sampled	Described in the sampling plan. The acceptance criterion is 95% data retrieved compared with proposed. Acceptance criterion is 100% in crucial areas.
SOP appropriate and compiled	Described in the sampling plan.
Experienced sampler	Sampler or supervisor
Documentation correct	Sampling log and chain of custody completed

1.1.2 Laboratory

Consideration	Requirement
Samples analysed	Number according to sampling and quality plan
Analytes	Number according to sampling and quality plan
Methods	EPA or other recognised methods with suitable PQL
Sample documentation	Complete including chain of custody and sample description
Sample holding times	Metals 6 months, OCP 14 days

1.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event. The data must show little or no inconsistencies with results and field observations.

1.2.1 Field

Consideration	Requirement
SOP	Same sampling procedures to be used
Experienced sampler	Sampler or supervisor
Climatic conditions	Described as may influence results
Samples collected	Sample medium, size, preparation, storage, transport

1.2.2 Laboratory

Consideration	Requirement
Analytical methods	Same methods, approved methods
PQL	Same
Same laboratory	Justify if different
Same units	Justify if different

1.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

1.3.1 Field

Consideration	Requirement
Appropriate media sampled	Sampled according to sampling and quality plan or in accordance with the EPA (1995) sampling guidelines.
All media identified	Sampling media identified in the sampling and quality plan. Where surface water bodies on the site sampled.

1.3.2 Laboratory

Consideration	Requirement
Samples analysed	Blanks

1.4 Precision

A quantitative measure of the variability (or reproduced of the data). Is measured by standard deviation or relative percent difference (RPD). An RPD analysis is calculated and compared to the adopted criteria of 30%.

Data not conforming to the acceptance criterion will be examined for determination of suitability for the purpose of site characterisation.

1.4.1 Field

Consideration	Requirement
Field duplicates	Frequency of 5%, results to be within RPD or discussion required indicate the appropriateness of SOP

1.4.2 Laboratory

Consideration	Requirement
Laboratory and inter lab duplicates	Frequency of 5%, results to be within RPD or discussion required. Inter laboratory duplicates will be one sample per batch.
Field duplicates	Frequency of 5%, results to be within RPD or discussion required
Laboratory prepared volatile trip spikes	One per sampling batch, results to be within RPD or discussion required

1.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value.

1.5.1 Field

Consideration	Requirement
SOP	Complied
Inter laboratory duplicates	Frequency of 5%. Analysis criterion 60% RPD for levels greater than 10 times the PQL 85% RPD for levels between 5 to 10 times the PQL 100% RPD at levels between 2 to 5 times the PQL Absolute difference, 3.5 times the PQL where levels are, 2 times PQL

1.5.2 Laboratory

Recovery data (surrogates, laboratory control samples and matrix spikes) data subject to the following control limits:

- 60-140% acceptable data
- 20-60% discussion required, may be considered acceptable
- 10-20% data should considered as estimates
- 10% data should be rejected

Consideration	Requirement
Field blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Rinsate blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Method blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	Frequency of 5%, results to be within +/-40% or discussion required
Matrix duplicates	Sample injected with a known concentration of contaminants with tested. Frequency of 5%, results to be within +/-40% or discussion required
Surrogate spikes	QC monitoring spikes to be added to samples at the extraction process in the laboratory where applicable. Surrogates are closely related to the organic target analyte and not normally found in the natural environment. Frequency of 5%, results to be within +/-40% or discussion required
Laboratory control samples	Externally prepared reference material containing representative analytes under investigation. These will be undertaken at one per batch. It is to be within +/-40% or discussion required
Laboratory prepared spikes	Frequency of 5%, results to be within +/-40% or discussion required

2. Laboratory analysis summary

Four analysis batches were undertaken over the preliminary investigation program. Samples were collected on 25 and 31 January and 2 February 2022. A total of 148 samples were submitted for analytical testing. The samples were collected in the field by an environmental scientist from Envirowest Consulting Pty Ltd, placed into laboratory prepared receptacles as recommended in NEPM (1999). The samples preservation and storage was undertaken using standard industry practices. A chain of custody form accompanied transport of the samples to the laboratory.

The samples were analysed at the laboratories of SGS laboratories, Alexandria NSW which is National Association of Testing Authorities (NATA) accredited for the tests undertaken. The analyses undertaken, number of samples tested and methods are presented in the following tables:

Laboratory analysis schedule

Sample id.	Number of samples	Duplicate	Analyses	Date collected	Substrate	Laboratory report
CR1, CR2, CR3, CR4, CR5, CR6, CR7, CR8, CR9, CR10, CR11, CR12, CR13, CR14, CR15, CR16, CR17, CR18, CR19, CR20, CR21, CR22, CR23, CR24, CR25, CR26, CR27, CR28, CR29, CR30, CR31, CR32, CR33, CR34, CR35, CR36, CR37, CR38, CR39, CR40, CR41, CR42, CR43, CR44, CR45, CR46, CR47, CR48, CR49, CR50, CR51, CR52, CR53, CR54, CR55, CR56, CR57, CR58, CR59, CR60, CR61, CR62, CR63, CR64, CR65, CR66, CR67, CR68, CR69, CR70, CR71, CR72, CR73, CR74, CR75, CR76, CR77, CR78, CR79, CR80, CR81, CR82, CR83, CR84, CR85, CR86, CR87, CR88, CR89, CR90, CR91, CR92, CR93, CR94, CR95, CR96, CR97, CR98, CR99, CR100,	122	7	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg)	25/1/2023	Soil	SE242417 SE242417RE SE242420 SE242420RE

CR101, CR102, CR103, CR104, CR105, CR106, CR107, CR108, CR109. CR110, CR111, CR112, CR113, CR114, CR115, CR116, CR117, CR118, CR119, CR120, CR121, CR122						
CR4, CR8, CR12, CR16, CR20, CR24, CR28, CR32, CR36, CR40, CR44, CR48, CR52, CR56, CR60, CR64, CR68, CR72, CR76, CR80, CR84, CR88, CR92, CR96, CR100, CR104, CR108, CR112, CR116, CR120	30	0	Organochlorine pesticides (OCP)	25/1/2023	Soil	SE242417 SE242420
CR44, CR109	2	0	pH, cation exchange capacity, clay content	25/1/2023	Soil	CE164439 CE164440 SE242417 SE242420
HS1, HS2, HS3, HS4, HS5	5	0	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, Total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH)	25/1/2023	Soil	SE242420 SE242420A
SL1, SL2	2	0	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP and organophosphorous pesticides (OPP)	25/1/2023	Soil	SE242420 SE242420B
HS6(100), HS7(200), HS8(100), HS9(200), HS10, HS11, HS12, HS13, HS14, HS15, HS16, HS17, HS18, HS19, HS20, HS21	16	1	As, Cd, Cr, Cu, Pb, Ni, Zn, mercury (Hg), Total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH), OCP, OPP	31/1/2023 and 2/2/2023	Soil	SE242441 SE242583
BH1(2000), BH2(2000), BH3(2000)	3	1	TRH, BTEXN	2/2/2023	Soil	SE242583

Analytical methods

Analyte	Extraction	Laboratory methods
Metals	USEPA 200.2 Mod	APHA USEPA SW846-6010
Chromium (III)	-	APHA 3500 CR-A&B & 3120 and USEPA SW846-3060A
Chromium (VI)	USEPA SW846-3060A	USEPA SW846-3060A
Mercury	USEPA 200.2 Mod	APHA 3112
TRH(C6-C9)	USPEA SW846-5030A	USPEA SW 846-8260B
TRH(C10-C40), PAH	Tumbler extraction of solids	USEPA SW 846-8270B
PCB	Tumbler extraction of solids	USEPA SW 846-8270B
BTEX	Tumbler extraction of solids	USEPA SW 846-8260B
OC Pesticides	Tumbler extraction of solids	USEPA SW 846-8270B

3. Field quality assurance and quality control

Nine intra laboratory duplicate samples were collected for the investigation. The frequency was 6% which was in accordance with the recommended frequency of 5%. Table A1 outlines the samples collected and differences in replicate analyses. Relative differences were deemed to pass if they were within the acceptance limits of +/- 30% for replicate analyses or less than 5 times the detection limit.

Field duplicate frequency

Sample id.	Number of samples	Duplicate	Frequency (%)	Date collected	Substrate	Laboratory report
CR1, CR2, CR3, CR4, CR5, CR6, CR7, CR8, CR9, CR10, CR11, CR12, CR13, CR14, CR15, CR16, CR17, CR18, CR19, CR20, CR21, CR22, CR23, CR24, CR25, CR26, CR27, CR28, CR29, CR30, CR31, CR32, CR33, CR34, CR35, CR36, CR37, CR38, CR39, CR40, CR41, CR42, CR43, CR44, CR45, CR46, CR47, CR48, CR49, CR50, CR51, CR52, CR53, CR54, CR55, CR56, CR57, CR58, CR59, CR60, CR61, CR62, CR63, CR64, CR65, CR66, CR67, CR68, CR69, CR70, CR71, CR72, CR73, CR74, CR75, CR76, CR77, CR78, CR79, CR80, CR81, CR82, CR83, CR84, CR85, CR86, CR87, CR88, CR89, CR90, CR91, CR92, CR93, CR94, CR95, CR96, CR97, CR98, CR99, CR100, CR101, CR102, CR103, CR104, CR105, CR106, CR107, CR108, CR109. CR110, CR111, CR112, CR113, CR114, CR115, CR116, CR117, CR118, CR119, CR120, CR121, CR122, HS1, HS2, HS3, HS4, HS5, SL1, SL2	129	7	5	25/1/2023	Soil	SE242417 SE242417RE SE242420 SE242420A SE242420B SE242420RE
HS6(100), HS7(200), HS8(100), HS9(200), HS10, HS11, HS12, HS13, HS14, HS15, HS16, HS17, HS18, HS19, HS20	15	1	7	31/1/2023	Soil	SE242441

BH1(2000), BH2(2000), BH3(2000), HS21	4	1	25	2/2/2023	Soil	SE242583

Table A1. Relative differences for intra laboratory duplicates

	CR1	DA1	Relative difference (%)	Pass/Fail	CR21	DA2	Relative difference (%)	Pass/Fail
Arsenic	3	3	0	Pass	59	67	13	Pass
Cadmium	<0.3	<0.3	NA	-	0.7	0.7	0	Pass
Chromium (total)	8.3	12	36	Fail	16	13	21	Pass
Copper	13	15	14	Pass	120	130	8	Pass
Lead	14	19	30	Pass	210	250	17	Pass
Nickel	3.0	3.7	21	Pass	3.6	4.3	18	Pass
Zinc	84	74	13	Pass	40	41	2	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit

	CR41	DA3	Relative difference (%)	Pass/Fail	CR61	DA4	Relative difference (%)	Pass/Fail
Arsenic	2	2	0	Pass	1	1	0	Pass
Cadmium	<0.3	<0.3	NA	-	<0.3	<0.3	NA	-
Chromium (total)	7.0	6.9	1	Pass	11	13	17	Pass
Copper	18	19	5	Pass	35	40	13	Pass
Lead	9	10	11	Pass	7	8	13	Pass
Nickel	2.1	2.1	0	Pass	2.7	3.0	11	Pass
Zinc	21	26	21	Pass	15	13	14	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit

	CR81	DA5	Relative difference (%)	Pass/Fail	CR101	DA6	Relative difference (%)	Pass/Fail
Arsenic	6	7	15	Pass	1	<1	NA	-
Cadmium	<0.3	<0.3	NA	-	<0.3	<0.3	NA	-
Chromium (total)	16	17	6	Pass	7.3	6.3	15	Pass
Copper	43	54	23	Pass	3.1	2.9	7	Pass
Lead	26	29	11	Pass	7	7	0	Pass
Nickel	4.1	4.6	11	Pass	1.3	1.2	8	Pass
Zinc	16	15	6	Pass	11	11	0	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit

	GC118	DA7	Relative difference (%)	Pass/Fail	HS(100)	DA8	Relative difference (%)	Pass/Fail
Arsenic	1	1	0	Pass	4	3	29	Pass
Cadmium	0.3	0.3	NA	-	<0.3	<0.3	NA	-
Chromium (total)	6.5	8.8	30	Pass	34	30	13	Pass
Copper	3.3	4.5	31	Fail	98	110	12	Pass
Lead	8	11	32	Fail	51	56	9	Pass
Nickel	1.3	1.6	21	Pass	5.6	5.8	4	Pass
Zinc	13	8.0	48	Fail	170	170	0	Pass

NA – relative difference unable to be calculated as results are less than laboratory detection limit, [1] Result less than 5 times the detection limit

	BH1(2000)	DA9	Relative difference (%)	Pass/Fail
TRH F1	<25	<25	NA	-
TRH F2	<25	<25	NA	-
TRH F3	<90	<90	NA	-
TRH F4	<120	<120	NA	-
Benzene	<0.1	<0.1	NA	-
Toluene	<0.1	<0.1	NA	-
Xylenes	<0.3	<0.3	NA	-
Naphthalene	<0.1	<0.1	NA	-

NA – relative difference unable to be calculated as results are less than laboratory detection limit

No trip blanks or spikes were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers after sampling to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

4. Laboratory quality assurance and quality control

Sample holding times are recommended in NEPM (1999). The time between collection and extraction was generally less than the criteria listed below:

Analyte	Maximum holding time
Metals	6 months
Mercury	28 days
BTEXN, TRH, PAH, OCP, OPP	14 days

The laboratory interpretative reports are presented with individual laboratory report. Assessment is made of holding time, frequency of control samples and quality control samples. Outliers exist for moisture in SE238483 with analysis 1 day over due. The laboratory report also contains a detailed description of preparation methods and analytical methods.

The results, quality report, interpretative report and chain of custody are presented in the attached appendices. The quality report contains the laboratory duplicates, spikes, laboratory control samples, blanks and where appropriate matrix spike recovery (surrogate).

5. Data quality indicators (DQI)

5.1 Completeness

A measure of the amount of usable data for a data collection activity (total to be greater than 90%)

5.1.1 Field

Consideration	Accepted	Comment
Locations to be sampled	Yes	In accordance with sampling methodology, described in the report.
SOP appropriate and compiled	Yes	In accordance with sampling methodology
Experienced sampler	Yes	Environmental scientist
Documentation correct	Yes	Chain of custody completed

5.1.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	In accordance with chain of custody and analysis plan.
Analytes	Yes	In accordance with chain of custody and analysis plan.
Methods	Yes	Analysed in NATA accredited laboratory with recognised methods and suitable PQL
Sample documentation	Yes	Completed including chain of custody and sample results and quality results
Sample holding times	Yes	Metals < 6 months Mercury < 28 days OCP, OPP, PAH, TRH, PCB, BTEXN < 14 days

5.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event.

5.2.1 Field

Consideration	Accepted	Comment
SOP	Yes	Same sampling procedures used and sampled on one date
Experienced sampler	Yes	Experienced environmental scientist
Climatic conditions	Yes	Sampling log
Samples collected	Yes	Suitable size and storage

5.2.2 Laboratory

Consideration	Accepted	Comment
Analytical methods	Yes	Same methods all samples
PQL	Yes	Suitable for analytes
Same laboratory	Yes	-
Same units	Yes	-

5.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

5.3.1 Field

Consideration	Accepted	Comment
Appropriate media sampled	Yes	Sampled according to sampling and quality plan
All media identified	Yes	Soil sampling media identified in the sampling and quality plan

5.3.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	Undertaken in NATA accredited laboratory. Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

5.4 Precision

A quantitative measure of the variability (or reproduced of the data)

5.4.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field duplicates	Yes	Collected

5.4.2 Laboratory

Consideration	Accepted	Comment
Laboratory duplicates	No	Frequency of 5%, results to be within +/-40% or discussion required. RPD failed acceptance criteria due to sample heterogeneity (SE242417, SE242441, SE242583). Recovery failed acceptance criteria due to sample heterogeneity (SE242441).
Field duplicates (intra and inter laboratory)	Yes	Frequency of 5%, results to be within +/-30% or discussion required. Two duplicates exceeded the adopted RPD. Highest result reported. Not expected to impact on conclusions.
Laboratory prepared volatile trip spikes	NA	Frequency of 5%, results to be within +/-30% or discussion required.

5.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value

5.5.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field blanks	No	Not collected

5.5.2 Laboratory

Consideration	Accepted	Comment
Method blanks	Yes	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	No	Frequency of 5%, results to be within +/-40% or discussion required. Recovery failed acceptance criteria due to sample heterogeneity (SE242417, SE242417RE, SE242420B, SE242420RE, SE242441). Recovery failed acceptance due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level) (SE242441, SE242583). At least 2 of 3 surrogates are within acceptance criteria (SE242441).
Matrix duplicates	Yes	Frequency of 5%, results to be within +/-40% or discussion required.
Surrogate spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required.
Laboratory control samples	Yes	Frequency of 5%, results to be within +/-40% or discussion required.
Laboratory prepared spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required.

No trip blanks, field spikes or sample rinsates were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork methods used for soil sampling were consistent throughout the project with all in situ samples collected from material which had not been subject to exposure.
- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers as quickly as possible, with the containers filled to minimize headspace. The sample containers were sealed immediately after the sample was collected and chilled in an esky containing ice.

- The samples were stored in a refrigerator and transported with ice bricks to ensure preservation during transport and storage.

- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.

- Samples in the analysis batches contained analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

6. Conclusion

All media appropriate to the objectives of this investigation have been adequately analysed and no area of significant uncertainty exist. It is concluded the data is usable for the purposes of the investigation.

Appendix 2. Field sampling log

Sampling log

Client	Fenlor
Contact	Dave Fenton
Job number	15156
Location	277 Cargo Road, Orange NSW
Date	25 January 2023
Investigator	Felipe Canavez
Weather conditions	Fine and hot

Sample ID	Matrix	Date	Analysis required	Observations/comments
CR1	Soil	25/01/2023	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), Nickel (Ni), zinc (Zn), mercury (Hg)	
CR2	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg,	
CR3	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR4	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, organochlorine pesticides (OCP)	
CR5	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR6	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR7	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR8	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR9	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR10	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR11	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR12	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR13	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR14	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR15	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR16	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR17	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR18	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR19	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR20	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR21	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR22	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR23	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR24	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR25	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR26	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR27	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR28	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR29	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR30	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR31	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR32	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR33	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR34	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR35	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR36	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR37	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR38	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR39	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR40	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR41	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR42	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR43	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	

CR44	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP, pH, cation exchange capacity, clay content	
CR45	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR46	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR47	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR48	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR49	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR50	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR51	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR52	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR53	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR54	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR55	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR56	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR57	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR58	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR59	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR60	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR61	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR62	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR63	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR64	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR65	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR66	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR67	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR68	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR69	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR70	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR71	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR72	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR73	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR74	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR75	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR76	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR77	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR78	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR79	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR80	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR81	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR82	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR83	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR84	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR85	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR86	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR87	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR88	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR89	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR90	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR91	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR92	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR93	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR94	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR95	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR96	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR97	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR98	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR99	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR100	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	

Sampling log

Client	Fenlor
Contact	Dave Fenton
Job number	15156-1
Location	277 Cargo Road, Orange NSW
Date	25 January 2023
Investigator	Felipe Canavez
Weather conditions	Fine and hot

Sample ID	Matrix	Date	Analysis required	Observations/comments
CR101	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR102	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR103	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR104	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR105	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR106	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR107	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR108	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR109	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, pH, cation exchange capacity, clay content	
CR110	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR111	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR112	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR113	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR114	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR115	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR116	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR117	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR118	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR119	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR120	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	
CR121	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
CR122	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	
HS1	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, mercury (Hg), total recoverable hydrocarbons (TRH (C6-C40)), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH)	Car body
HS2	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Foreign materials stockpile 1
HS3	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Western animal shelter
HS4	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Foreign materials stockpile 2
HS5	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH	Eastern animal shelter
SL1	Sludge	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP and Organochlorine pesticides (OPP)	Western dam
SL2	Sludge	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP, OPP	Eastern dam
DA1	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC8
DA2	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC21
DA3	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC41
DA4	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC61
DA5	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC81
DA6	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC101
DA7	Soil	25/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of GC121

Sampling log

Client	Fenlor
Contact	Dave Fenton
Job number	15156-2
Location	277 Cargo Road, Orange NSW
Date	31 January 2023
Investigator	Felipe Canavez
Weather conditions	Fine and hot

Sample ID	Matrix	Date	Analysis required	Observations/comments
HS6(100)	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide mixing area
HS7(200)	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide mixing area
HS8(100)	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide mixing area
HS9(200)	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide mixing area
HS10	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Area downslope of pesticide mixing area
HS11	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Area downslope of pesticide mixing area
HS12	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide storage shed
HS13	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide storage shed
HS14	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide storage shed
HS15	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Pesticide storage shed
HS16	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Soil discolouration from general storage shed 2
HS17	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	General storage shed 2
HS18	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Soil discolouration from machinery storage area, general storage shed 1
HS19	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Soil discolouration in general storage shed 1
HS20	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Garage in general storage shed 1
DA8	Soil	31/01/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	Duplicate of HS6(100)
15156-1	Vinyl liner	31/01/2023	Asbestos identification	Floor liner

Sampling log

Client	Fenlor
Contact	Dave Fenton
Job number	15156-3
Location	277 Cargo Road, Orange NSW
Date	2 February 2023
Investigator	Felipe Canavez
Weather conditions	Fine and hot

Sample ID	Matrix	Date	Analysis required	Observations/comments
BH1(2000)	Soil	02/02/2023	TRH, BTEXN	North of underground subterranean tank (UST)
BH2(2000)	Soil	02/02/2023	TRH, BTEXN	East of UST
BH3(2000)	Soil	02/02/2023	TRH, BTEXN	South of UST
HS21	Soil	02/02/2023	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, OCP, OPP	Fuel pump
DA9	Soil	02/02/2023	TRH, BTEXN	Duplicate of BH1(2000)

Appendix 3. Soil analysis results – SGS report number SE242417, SE242417RE, SE242420, SE242420A, SE242420B, SE242420RE, SE242441, SE242583 and chain of custody forms

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156**
Order Number	**15156**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242417 R0**
Date Received	31/1/2023
Date Reported	7/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

Clay Content subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No. CE164439.

SIGNATORIES

[redacted]
Akheeqar BENIAMEEN
Chemist

[redacted]
Bennet LO
Senior Chemist

[redacted]
Dong LIANG
Metals/Inorganics Team Leader

[redacted]
Huong CRAWFORD
Production Manager

[redacted]
Kamrul AHSAN
Senior Chemist

[redacted]
Shane MCDERMOTT
Inorganic/Metals Chemist

OC Pesticides in Soil [AN420] Tested: 31/1/2023

PARAMETER	UOM	LOR	CR4 SOIL - 25/1/2023 SE242417.004	CR8 SOIL - 25/1/2023 SE242417.008	CR12 SOIL - 25/1/2023 SE242417.012	CR16 SOIL - 25/1/2023 SE242417.016	CR20 SOIL - 25/1/2023 SE242417.020
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 31/1/2023 (continued)

PARAMETER	UOM	LOR	CR24 SOIL - 25/1/2023 SE242417.024	CR28 SOIL - 25/1/2023 SE242417.028	CR32 SOIL - 25/1/2023 SE242417.032	CR36 SOIL - 25/1/2023 SE242417.036	CR40 SOIL - 25/1/2023 SE242417.040
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 31/1/2023 (continued)

PARAMETER	UOM	LOR	CR44 SOIL - 25/1/2023 SE242417.044	CR48 SOIL - 25/1/2023 SE242417.048	CR52 SOIL - 25/1/2023 SE242417.052	CR56 SOIL - 25/1/2023 SE242417.056	CR60 SOIL - 25/1/2023 SE242417.060
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	0.2
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 31/1/2023 (continued)

PARAMETER	UOM	LOR	CR64 SOIL - 25/1/2023 SE242417.064	CR68 SOIL - 25/1/2023 SE242417.068	CR72 SOIL - 25/1/2023 SE242417.072	CR76 SOIL - 25/1/2023 SE242417.076	CR80 SOIL - 25/1/2023 SE242417.080
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	**0.4**	<0.1	**0.3**	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 31/1/2023 (continued)

PARAMETER	UOM	LOR	CR84 SOIL - 25/1/2023 SE242417.084	CR88 SOIL - 25/1/2023 SE242417.088	CR92 SOIL - 25/1/2023 SE242417.092	CR96 SOIL - 25/1/2023 SE242417.096	CR100 SOIL - 25/1/2023 SE242417.100
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

pH in soil (1:5) [AN101] Tested: 3/2/2023

PARAMETER	UOM	LOR	CR44 SOIL - 25/1/2023 SE242417.044
pH	pH Units	0.1	**5.4**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 6/2/2023

PARAMETER	UOM	LOR	CR44 SOIL - 25/1/2023 SE242417.044
Exchangeable Calcium, Ca	mg/kg	2	**670**
Exchangeable Calcium, Ca	meq/100g	0.01	**3.3**
Exchangeable Calcium Percentage*	%	0.1	**72.7**
Exchangeable Potassium, K	mg/kg	2	**130**
Exchangeable Potassium, K	meq/100g	0.01	**0.32**
Exchangeable Potassium Percentage*	%	0.1	**7.0**
Exchangeable Magnesium, Mg	mg/kg	2	**110**
Exchangeable Magnesium, Mg	meq/100g	0.02	**0.91**
Exchangeable Magnesium Percentage*	%	0.1	**19.9**
Exchangeable Sodium, Na	mg/kg	2	**5**
Exchangeable Sodium, Na	meq/100g	0.01	**0.02**
Exchangeable Sodium Percentage*	%	0.1	**0.5**
Cation Exchange Capacity	meq/100g	0.02	**4.6**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/2/2023

PARAMETER	UOM	LOR	CR1 SOIL - 25/1/2023 SE242417.001	CR2 SOIL - 25/1/2023 SE242417.002	CR3 SOIL - 25/1/2023 SE242417.003	CR4 SOIL - 25/1/2023 SE242417.004	CR5 SOIL - 25/1/2023 SE242417.005
Arsenic, As	mg/kg	1	3	2	5	10	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	10	9.6	8.2	5.3	5.5
Copper, Cu	mg/kg	0.5	15	11	17	16	27
Lead, Pb	mg/kg	1	20	11	30	48	9
Nickel, Ni	mg/kg	0.5	3.5	2.5	1.7	0.9	1.9
Zinc, Zn	mg/kg	2	78	21	14	17	30

PARAMETER	UOM	LOR	CR6 SOIL - 25/1/2023 SE242417.006	CR7 SOIL - 25/1/2023 SE242417.007	CR8 SOIL - 25/1/2023 SE242417.008	CR9 SOIL - 25/1/2023 SE242417.009	CR10 SOIL - 25/1/2023 SE242417.010
Arsenic, As	mg/kg	1	2	1	1	3	27
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	7.8	7.7	6.4	9.4
Copper, Cu	mg/kg	0.5	18	10	4.7	14	31
Lead, Pb	mg/kg	1	9	6	6	12	83
Nickel, Ni	mg/kg	0.5	2.4	1.6	1.2	1.5	1.7
Zinc, Zn	mg/kg	2	25	11	9	17	13

PARAMETER	UOM	LOR	CR11 SOIL - 25/1/2023 SE242417.011	CR12 SOIL - 25/1/2023 SE242417.012	CR13 SOIL - 25/1/2023 SE242417.013	CR14 SOIL - 25/1/2023 SE242417.014	CR15 SOIL - 25/1/2023 SE242417.015
Arsenic, As	mg/kg	1	23	2	3	24	18
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.9	18	15	9.8	7.5
Copper, Cu	mg/kg	0.5	27	16	10	41	37
Lead, Pb	mg/kg	1	60	10	15	100	93
Nickel, Ni	mg/kg	0.5	1.7	4.0	4.7	2.2	1.7
Zinc, Zn	mg/kg	2	14	140	46	14	14

PARAMETER	UOM	LOR	CR16 SOIL - 25/1/2023 SE242417.016	CR17 SOIL - 25/1/2023 SE242417.017	CR18 SOIL - 25/1/2023 SE242417.018	CR19 SOIL - 25/1/2023 SE242417.019	CR20 SOIL - 25/1/2023 SE242417.020
Arsenic, As	mg/kg	1	5	1	<1	<1	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.9	4.9	4.8	6.1	8.2
Copper, Cu	mg/kg	0.5	15	7.9	6.6	8.1	8.6
Lead, Pb	mg/kg	1	21	6	5	5	7
Nickel, Ni	mg/kg	0.5	1.1	0.9	1.0	1.3	1.5
Zinc, Zn	mg/kg	2	8	9	7	13	13

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/2/2023

(continued)

PARAMETER	UOM	LOR	CR21 SOIL - 25/1/2023 SE242417.021	CR22 SOIL - 25/1/2023 SE242417.022	CR23 SOIL - 25/1/2023 SE242417.023	CR24 SOIL - 25/1/2023 SE242417.024	CR25 SOIL - 25/1/2023 SE242417.025
Arsenic, As	mg/kg	1	59	30	37	3	26
Cadmium, Cd	mg/kg	0.3	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	15	16	11	13	19
Copper, Cu	mg/kg	0.5	110	56	77	16	59
Lead, Pb	mg/kg	1	200	110	130	11	95
Nickel, Ni	mg/kg	0.5	3.4	4.0	4.0	4.7	4.0
Zinc, Zn	mg/kg	2	35	18	26	28	69

PARAMETER	UOM	LOR	CR26 SOIL - 25/1/2023 SE242417.026	CR27 SOIL - 25/1/2023 SE242417.027	CR28 SOIL - 25/1/2023 SE242417.028	CR29 SOIL - 25/1/2023 SE242417.029	CR30 SOIL - 25/1/2023 SE242417.030
Arsenic, As	mg/kg	1	25	2	3	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	12	17	22	10
Copper, Cu	mg/kg	0.5	68	24	18	11	16
Lead, Pb	mg/kg	1	120	11	11	12	10
Nickel, Ni	mg/kg	0.5	2.8	3.9	4.4	5.0	3.4
Zinc, Zn	mg/kg	2	26	18	24	110	16

PARAMETER	UOM	LOR	CR31 SOIL - 25/1/2023 SE242417.031	CR32 SOIL - 25/1/2023 SE242417.032	CR33 SOIL - 25/1/2023 SE242417.033	CR34 SOIL - 25/1/2023 SE242417.034	CR35 SOIL - 25/1/2023 SE242417.035
Arsenic, As	mg/kg	1	13	2	1	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	11	8.6	16	24
Copper, Cu	mg/kg	0.5	22	12	14	21	26
Lead, Pb	mg/kg	1	44	8	8	9	12
Nickel, Ni	mg/kg	0.5	3.1	3.4	2.6	4.6	5.8
Zinc, Zn	mg/kg	2	20	20	20	20	27

PARAMETER	UOM	LOR	CR36 SOIL - 25/1/2023 SE242417.036	CR37 SOIL - 25/1/2023 SE242417.037	CR38 SOIL - 25/1/2023 SE242417.038	CR39 SOIL - 25/1/2023 SE242417.039	CR40 SOIL - 25/1/2023 SE242417.040
Arsenic, As	mg/kg	1	2	1	<1	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	9.6	6.7	6.6	9.8
Copper, Cu	mg/kg	0.5	24	16	12	12	12
Lead, Pb	mg/kg	1	7	6	5	4	9
Nickel, Ni	mg/kg	0.5	2.8	1.7	1.4	1.1	2.2
Zinc, Zn	mg/kg	2	20	12	11	10	14

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/2/2023

(continued)

PARAMETER	UOM	LOR	CR41 SOIL - 25/1/2023 SE242417.041	CR42 SOIL - 25/1/2023 SE242417.042	CR43 SOIL - 25/1/2023 SE242417.043	CR44 SOIL - 25/1/2023 SE242417.044	CR45 SOIL - 25/1/2023 SE242417.045
Arsenic, As	mg/kg	1	2	1	1	2	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.3	10	8.3	11	5.9
Copper, Cu	mg/kg	0.5	16	21	23	23	22
Lead, Pb	mg/kg	1	8	6	6	6	5
Nickel, Ni	mg/kg	0.5	1.8	1.7	1.6	1.9	1.4
Zinc, Zn	mg/kg	2	32	21	14	16	24

PARAMETER	UOM	LOR	CR46 SOIL - 25/1/2023 SE242417.046	CR47 SOIL - 25/1/2023 SE242417.047	CR48 SOIL - 25/1/2023 SE242417.048	CR49 SOIL - 25/1/2023 SE242417.049	CR50 SOIL - 25/1/2023 SE242417.050
Arsenic, As	mg/kg	1	2	1	2	2	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.6	8.6	17	18	14
Copper, Cu	mg/kg	0.5	34	30	32	30	46
Lead, Pb	mg/kg	1	12	10	9	10	8
Nickel, Ni	mg/kg	0.5	2.0	1.7	3.4	3.5	3.3
Zinc, Zn	mg/kg	2	39	35	28	15	22

PARAMETER	UOM	LOR	CR51 SOIL - 25/1/2023 SE242417.051	CR52 SOIL - 25/1/2023 SE242417.052	CR53 SOIL - 25/1/2023 SE242417.053	CR54 SOIL - 25/1/2023 SE242417.054	CR55 SOIL - 25/1/2023 SE242417.055
Arsenic, As	mg/kg	1	2	1	1	1	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	24	9.5	9.1	20
Copper, Cu	mg/kg	0.5	38	36	35	24	35
Lead, Pb	mg/kg	1	9	8	6	6	14
Nickel, Ni	mg/kg	0.5	4.2	3.3	2.2	1.9	2.0
Zinc, Zn	mg/kg	2	20	13	13	10	11

PARAMETER	UOM	LOR	CR56 SOIL - 25/1/2023 SE242417.056	CR57 SOIL - 25/1/2023 SE242417.057	CR58 SOIL - 25/1/2023 SE242417.058	CR59 SOIL - 25/1/2023 SE242417.059	CR60 SOIL - 25/1/2023 SE242417.060
Arsenic, As	mg/kg	1	7	24	11	11	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	8.3	6.9	8.3	10
Copper, Cu	mg/kg	0.5	32	39	37	45	49
Lead, Pb	mg/kg	1	28	98	43	48	49
Nickel, Ni	mg/kg	0.5	2.0	1.6	1.8	1.8	1.9
Zinc, Zn	mg/kg	2	14	18	18	20	21

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/2/2023

(continued)

PARAMETER	UOM	LOR	CR61 SOIL - 25/1/2023 SE242417.061	CR62 SOIL - 25/1/2023 SE242417.062	CR63 SOIL - 25/1/2023 SE242417.063	CR64 SOIL - 25/1/2023 SE242417.064	CR65 SOIL - 25/1/2023 SE242417.065
Arsenic, As	mg/kg	1	2	2	2	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	13	13	21	22
Copper, Cu	mg/kg	0.5	34	34	40	43	51
Lead, Pb	mg/kg	1	7	7	8	12	10
Nickel, Ni	mg/kg	0.5	2.4	2.5	3.5	5.2	3.8
Zinc, Zn	mg/kg	2	15	14	18	31	26

PARAMETER	UOM	LOR	CR66 SOIL - 25/1/2023 SE242417.066	CR67 SOIL - 25/1/2023 SE242417.067	CR68 SOIL - 25/1/2023 SE242417.068	CR69 SOIL - 25/1/2023 SE242417.069	CR70 SOIL - 25/1/2023 SE242417.070
Arsenic, As	mg/kg	1	1	3	2	3	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	29	17	24	24
Copper, Cu	mg/kg	0.5	28	67	32	46	41
Lead, Pb	mg/kg	1	8	18	10	13	24
Nickel, Ni	mg/kg	0.5	2.3	5.5	3.2	5.2	6.1
Zinc, Zn	mg/kg	2	23	60	53	100	46

PARAMETER	UOM	LOR	CR71 SOIL - 25/1/2023 SE242417.071	CR72 SOIL - 25/1/2023 SE242417.072	CR73 SOIL - 25/1/2023 SE242417.073	CR74 SOIL - 25/1/2023 SE242417.074	CR75 SOIL - 25/1/2023 SE242417.075
Arsenic, As	mg/kg	1	3	3	2	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	13	12	8.8	7.3
Copper, Cu	mg/kg	0.5	32	29	35	24	19
Lead, Pb	mg/kg	1	13	14	13	16	12
Nickel, Ni	mg/kg	0.5	3.4	4.8	3.4	2.1	1.6
Zinc, Zn	mg/kg	2	28	21	18	13	20

PARAMETER	UOM	LOR	CR76 SOIL - 25/1/2023 SE242417.076	CR77 SOIL - 25/1/2023 SE242417.077	CR78 SOIL - 25/1/2023 SE242417.078	CR79 SOIL - 25/1/2023 SE242417.079	CR80 SOIL - 25/1/2023 SE242417.080
Arsenic, As	mg/kg	1	2	3	6	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.8	7.0	10	17	19
Copper, Cu	mg/kg	0.5	21	18	34	33	31
Lead, Pb	mg/kg	1	10	12	26	24	20
Nickel, Ni	mg/kg	0.5	1.5	1.8	2.4	3.3	4.0
Zinc, Zn	mg/kg	2	14	15	12	13	18

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/2/2023

(continued)

PARAMETER	UOM	LOR	CR81 SOIL - 25/1/2023 SE242417.081	CR82 SOIL - 25/1/2023 SE242417.082	CR83 SOIL - 25/1/2023 SE242417.083	CR84 SOIL - 25/1/2023 SE242417.084	CR85 SOIL - 25/1/2023 SE242417.085
Arsenic, As	mg/kg	1	6	5	8	6	7
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	15	26	22	15
Copper, Cu	mg/kg	0.5	42	35	65	130	63
Lead, Pb	mg/kg	1	26	23	240	30	30
Nickel, Ni	mg/kg	0.5	4.1	4.6	6.3	5.1	4.2
Zinc, Zn	mg/kg	2	19	65	22	32	15

PARAMETER	UOM	LOR	CR86 SOIL - 25/1/2023 SE242417.086	CR87 SOIL - 25/1/2023 SE242417.087	CR88 SOIL - 25/1/2023 SE242417.088	CR89 SOIL - 25/1/2023 SE242417.089	CR90 SOIL - 25/1/2023 SE242417.090
Arsenic, As	mg/kg	1	6	4	5	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	13	10	7.5	5.9
Copper, Cu	mg/kg	0.5	50	33	28	20	18
Lead, Pb	mg/kg	1	26	22	22	16	14
Nickel, Ni	mg/kg	0.5	4.9	5.2	3.4	2.3	1.5
Zinc, Zn	mg/kg	2	30	31	27	11	18

PARAMETER	UOM	LOR	CR91 SOIL - 25/1/2023 SE242417.091	CR92 SOIL - 25/1/2023 SE242417.092	CR93 SOIL - 25/1/2023 SE242417.093	CR94 SOIL - 25/1/2023 SE242417.094	CR95 SOIL - 25/1/2023 SE242417.095
Arsenic, As	mg/kg	1	<1	2	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.8	11	6.6	6.4	6.7
Copper, Cu	mg/kg	0.5	12	9.5	6.1	6.5	3.6
Lead, Pb	mg/kg	1	12	11	11	11	8
Nickel, Ni	mg/kg	0.5	2.2	3.3	2.1	1.8	1.3
Zinc, Zn	mg/kg	2	98	24	11	11	8

PARAMETER	UOM	LOR	CR96 SOIL - 25/1/2023 SE242417.096	CR97 SOIL - 25/1/2023 SE242417.097	CR98 SOIL - 25/1/2023 SE242417.098	CR99 SOIL - 25/1/2023 SE242417.099	CR100 SOIL - 25/1/2023 SE242417.100
Arsenic, As	mg/kg	1	<1	<1	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.9	5.9	7.6	6.9	6.1
Copper, Cu	mg/kg	0.5	5.1	3.5	7.7	3.8	3.1
Lead, Pb	mg/kg	1	8	8	8	8	6
Nickel, Ni	mg/kg	0.5	1.7	1.3	2.1	1.4	1.2
Zinc, Zn	mg/kg	2	24	12	21	14	10

Mercury in Soil [AN312] Tested: 2/2/2023

PARAMETER	UOM	LOR	CR1 SOIL - 25/1/2023 SE242417.001	CR2 SOIL - 25/1/2023 SE242417.002	CR3 SOIL - 25/1/2023 SE242417.003	CR4 SOIL - 25/1/2023 SE242417.004	CR5 SOIL - 25/1/2023 SE242417.005
Mercury	mg/kg	0.05	**0.05**	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR6 SOIL - 25/1/2023 SE242417.006	CR7 SOIL - 25/1/2023 SE242417.007	CR8 SOIL - 25/1/2023 SE242417.008	CR9 SOIL - 25/1/2023 SE242417.009	CR10 SOIL - 25/1/2023 SE242417.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR11 SOIL - 25/1/2023 SE242417.011	CR12 SOIL - 25/1/2023 SE242417.012	CR13 SOIL - 25/1/2023 SE242417.013	CR14 SOIL - 25/1/2023 SE242417.014	CR15 SOIL - 25/1/2023 SE242417.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR16 SOIL - 25/1/2023 SE242417.016	CR17 SOIL - 25/1/2023 SE242417.017	CR18 SOIL - 25/1/2023 SE242417.018	CR19 SOIL - 25/1/2023 SE242417.019	CR20 SOIL - 25/1/2023 SE242417.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR21 SOIL - 25/1/2023 SE242417.021	CR22 SOIL - 25/1/2023 SE242417.022	CR23 SOIL - 25/1/2023 SE242417.023	CR24 SOIL - 25/1/2023 SE242417.024	CR25 SOIL - 25/1/2023 SE242417.025
Mercury	mg/kg	0.05	**0.08**	<0.05	**0.06**	<0.05	<0.05

PARAMETER	UOM	LOR	CR26 SOIL - 25/1/2023 SE242417.026	CR27 SOIL - 25/1/2023 SE242417.027	CR28 SOIL - 25/1/2023 SE242417.028	CR29 SOIL - 25/1/2023 SE242417.029	CR30 SOIL - 25/1/2023 SE242417.030
Mercury	mg/kg	0.05	**0.08**	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR31 SOIL - 25/1/2023 SE242417.031	CR32 SOIL - 25/1/2023 SE242417.032	CR33 SOIL - 25/1/2023 SE242417.033	CR34 SOIL - 25/1/2023 SE242417.034	CR35 SOIL - 25/1/2023 SE242417.035
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Mercury in Soil [AN312] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	CR36 SOIL - 25/1/2023 SE242417.036	CR37 SOIL - 25/1/2023 SE242417.037	CR38 SOIL - 25/1/2023 SE242417.038	CR39 SOIL - 25/1/2023 SE242417.039	CR40 SOIL - 25/1/2023 SE242417.040
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR41 SOIL - 25/1/2023 SE242417.041	CR42 SOIL - 25/1/2023 SE242417.042	CR43 SOIL - 25/1/2023 SE242417.043	CR44 SOIL - 25/1/2023 SE242417.044	CR45 SOIL - 25/1/2023 SE242417.045
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR46 SOIL - 25/1/2023 SE242417.046	CR47 SOIL - 25/1/2023 SE242417.047	CR48 SOIL - 25/1/2023 SE242417.048	CR49 SOIL - 25/1/2023 SE242417.049	CR50 SOIL - 25/1/2023 SE242417.050
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR51 SOIL - 25/1/2023 SE242417.051	CR52 SOIL - 25/1/2023 SE242417.052	CR53 SOIL - 25/1/2023 SE242417.053	CR54 SOIL - 25/1/2023 SE242417.054	CR55 SOIL - 25/1/2023 SE242417.055
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR56 SOIL - 25/1/2023 SE242417.056	CR57 SOIL - 25/1/2023 SE242417.057	CR58 SOIL - 25/1/2023 SE242417.058	CR59 SOIL - 25/1/2023 SE242417.059	CR60 SOIL - 25/1/2023 SE242417.060
Mercury	mg/kg	0.05	<0.05	**0.06**	<0.05	<0.05	**0.05**

PARAMETER	UOM	LOR	CR61 SOIL - 25/1/2023 SE242417.061	CR62 SOIL - 25/1/2023 SE242417.062	CR63 SOIL - 25/1/2023 SE242417.063	CR64 SOIL - 25/1/2023 SE242417.064	CR65 SOIL - 25/1/2023 SE242417.065
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR66 SOIL - 25/1/2023 SE242417.066	CR67 SOIL - 25/1/2023 SE242417.067	CR68 SOIL - 25/1/2023 SE242417.068	CR69 SOIL - 25/1/2023 SE242417.069	CR70 SOIL - 25/1/2023 SE242417.070
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Mercury in Soil [AN312] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	CR71 SOIL - 25/1/2023 SE242417.071	CR72 SOIL - 25/1/2023 SE242417.072	CR73 SOIL - 25/1/2023 SE242417.073	CR74 SOIL - 25/1/2023 SE242417.074	CR75 SOIL - 25/1/2023 SE242417.075
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR76 SOIL - 25/1/2023 SE242417.076	CR77 SOIL - 25/1/2023 SE242417.077	CR78 SOIL - 25/1/2023 SE242417.078	CR79 SOIL - 25/1/2023 SE242417.079	CR80 SOIL - 25/1/2023 SE242417.080
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR81 SOIL - 25/1/2023 SE242417.081	CR82 SOIL - 25/1/2023 SE242417.082	CR83 SOIL - 25/1/2023 SE242417.083	CR84 SOIL - 25/1/2023 SE242417.084	CR85 SOIL - 25/1/2023 SE242417.085
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR86 SOIL - 25/1/2023 SE242417.086	CR87 SOIL - 25/1/2023 SE242417.087	CR88 SOIL - 25/1/2023 SE242417.088	CR89 SOIL - 25/1/2023 SE242417.089	CR90 SOIL - 25/1/2023 SE242417.090
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR91 SOIL - 25/1/2023 SE242417.091	CR92 SOIL - 25/1/2023 SE242417.092	CR93 SOIL - 25/1/2023 SE242417.093	CR94 SOIL - 25/1/2023 SE242417.094	CR95 SOIL - 25/1/2023 SE242417.095
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR96 SOIL - 25/1/2023 SE242417.096	CR97 SOIL - 25/1/2023 SE242417.097	CR98 SOIL - 25/1/2023 SE242417.098	CR99 SOIL - 25/1/2023 SE242417.099	CR100 SOIL - 25/1/2023 SE242417.100
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 2/2/2023

PARAMETER	UOM	LOR	CR1 SOIL - 25/1/2023 SE242417.001	CR2 SOIL - 25/1/2023 SE242417.002	CR3 SOIL - 25/1/2023 SE242417.003	CR4 SOIL - 25/1/2023 SE242417.004	CR5 SOIL - 25/1/2023 SE242417.005
% Moisture	%w/w	1	25.2	26.2	32.0	10.4	29.4

PARAMETER	UOM	LOR	CR6 SOIL - 25/1/2023 SE242417.006	CR7 SOIL - 25/1/2023 SE242417.007	CR8 SOIL - 25/1/2023 SE242417.008	CR9 SOIL - 25/1/2023 SE242417.009	CR10 SOIL - 25/1/2023 SE242417.010
% Moisture	%w/w	1	24.1	20.5	14.0	21.0	15.2

PARAMETER	UOM	LOR	CR11 SOIL - 25/1/2023 SE242417.011	CR12 SOIL - 25/1/2023 SE242417.012	CR13 SOIL - 25/1/2023 SE242417.013	CR14 SOIL - 25/1/2023 SE242417.014	CR15 SOIL - 25/1/2023 SE242417.015
% Moisture	%w/w	1	19.3	14.9	13.7	16.2	12.8

PARAMETER	UOM	LOR	CR16 SOIL - 25/1/2023 SE242417.016	CR17 SOIL - 25/1/2023 SE242417.017	CR18 SOIL - 25/1/2023 SE242417.018	CR19 SOIL - 25/1/2023 SE242417.019	CR20 SOIL - 25/1/2023 SE242417.020
% Moisture	%w/w	1	8.9	15.4	15.0	9.4	20.4

PARAMETER	UOM	LOR	CR21 SOIL - 25/1/2023 SE242417.021	CR22 SOIL - 25/1/2023 SE242417.022	CR23 SOIL - 25/1/2023 SE242417.023	CR24 SOIL - 25/1/2023 SE242417.024	CR25 SOIL - 25/1/2023 SE242417.025
% Moisture	%w/w	1	11.3	11.3	20.2	12.7	11.3

PARAMETER	UOM	LOR	CR26 SOIL - 25/1/2023 SE242417.026	CR27 SOIL - 25/1/2023 SE242417.027	CR28 SOIL - 25/1/2023 SE242417.028	CR29 SOIL - 25/1/2023 SE242417.029	CR30 SOIL - 25/1/2023 SE242417.030
% Moisture	%w/w	1	16.8	21.6	25.9	13.7	18.6

PARAMETER	UOM	LOR	CR31 SOIL - 25/1/2023 SE242417.031	CR32 SOIL - 25/1/2023 SE242417.032	CR33 SOIL - 25/1/2023 SE242417.033	CR34 SOIL - 25/1/2023 SE242417.034	CR35 SOIL - 25/1/2023 SE242417.035
% Moisture	%w/w	1	16.1	14.6	8.1	10.0	8.5

Moisture Content [AN002] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	CR36 SOIL - 25/1/2023 SE242417.036	CR37 SOIL - 25/1/2023 SE242417.037	CR38 SOIL - 25/1/2023 SE242417.038	CR39 SOIL - 25/1/2023 SE242417.039	CR40 SOIL - 25/1/2023 SE242417.040
% Moisture	%w/w	1	26.5	12.3	8.8	9.2	10.5

PARAMETER	UOM	LOR	CR41 SOIL - 25/1/2023 SE242417.041	CR42 SOIL - 25/1/2023 SE242417.042	CR43 SOIL - 25/1/2023 SE242417.043	CR44 SOIL - 25/1/2023 SE242417.044	CR45 SOIL - 25/1/2023 SE242417.045
% Moisture	%w/w	1	20.1	8.0	12.9	11.0	17.0

PARAMETER	UOM	LOR	CR46 SOIL - 25/1/2023 SE242417.046	CR47 SOIL - 25/1/2023 SE242417.047	CR48 SOIL - 25/1/2023 SE242417.048	CR49 SOIL - 25/1/2023 SE242417.049	CR50 SOIL - 25/1/2023 SE242417.050
% Moisture	%w/w	1	10.6	11.9	9.6	5.5	9.8

PARAMETER	UOM	LOR	CR51 SOIL - 25/1/2023 SE242417.051	CR52 SOIL - 25/1/2023 SE242417.052	CR53 SOIL - 25/1/2023 SE242417.053	CR54 SOIL - 25/1/2023 SE242417.054	CR55 SOIL - 25/1/2023 SE242417.055
% Moisture	%w/w	1	8.1	14.9	9.0	11.8	9.8

PARAMETER	UOM	LOR	CR56 SOIL - 25/1/2023 SE242417.056	CR57 SOIL - 25/1/2023 SE242417.057	CR58 SOIL - 25/1/2023 SE242417.058	CR59 SOIL - 25/1/2023 SE242417.059	CR60 SOIL - 25/1/2023 SE242417.060
% Moisture	%w/w	1	9.2	15.9	12.1	10.5	12.9

PARAMETER	UOM	LOR	CR61 SOIL - 25/1/2023 SE242417.061	CR62 SOIL - 25/1/2023 SE242417.062	CR63 SOIL - 25/1/2023 SE242417.063	CR64 SOIL - 25/1/2023 SE242417.064	CR65 SOIL - 25/1/2023 SE242417.065
% Moisture	%w/w	1	8.1	8.7	13.0	9.9	5.0

PARAMETER	UOM	LOR	CR66 SOIL - 25/1/2023 SE242417.066	CR67 SOIL - 25/1/2023 SE242417.067	CR68 SOIL - 25/1/2023 SE242417.068	CR69 SOIL - 25/1/2023 SE242417.069	CR70 SOIL - 25/1/2023 SE242417.070
% Moisture	%w/w	1	7.9	7.9	9.9	7.2	8.6

Moisture Content [AN002] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	CR71 SOIL - 25/1/2023 SE242417.071	CR72 SOIL - 25/1/2023 SE242417.072	CR73 SOIL - 25/1/2023 SE242417.073	CR74 SOIL - 25/1/2023 SE242417.074	CR75 SOIL - 25/1/2023 SE242417.075
% Moisture	%w/w	1	9.5	24.8	10.1	13.0	4.4

PARAMETER	UOM	LOR	CR76 SOIL - 25/1/2023 SE242417.076	CR77 SOIL - 25/1/2023 SE242417.077	CR78 SOIL - 25/1/2023 SE242417.078	CR79 SOIL - 25/1/2023 SE242417.079	CR80 SOIL - 25/1/2023 SE242417.080
% Moisture	%w/w	1	8.8	9.3	8.6	10.9	12.2

PARAMETER	UOM	LOR	CR81 SOIL - 25/1/2023 SE242417.081	CR82 SOIL - 25/1/2023 SE242417.082	CR83 SOIL - 25/1/2023 SE242417.083	CR84 SOIL - 25/1/2023 SE242417.084	CR85 SOIL - 25/1/2023 SE242417.085
% Moisture	%w/w	1	5.9	18.8	6.5	6.6	9.6

PARAMETER	UOM	LOR	CR86 SOIL - 25/1/2023 SE242417.086	CR87 SOIL - 25/1/2023 SE242417.087	CR88 SOIL - 25/1/2023 SE242417.088	CR89 SOIL - 25/1/2023 SE242417.089	CR90 SOIL - 25/1/2023 SE242417.090
% Moisture	%w/w	1	16.1	13.4	9.2	8.6	4.3

PARAMETER	UOM	LOR	CR91 SOIL - 25/1/2023 SE242417.091	CR92 SOIL - 25/1/2023 SE242417.092	CR93 SOIL - 25/1/2023 SE242417.093	CR94 SOIL - 25/1/2023 SE242417.094	CR95 SOIL - 25/1/2023 SE242417.095
% Moisture	%w/w	1	11.4	22.5	24.8	11.0	13.5

PARAMETER	UOM	LOR	CR96 SOIL - 25/1/2023 SE242417.096	CR97 SOIL - 25/1/2023 SE242417.097	CR98 SOIL - 25/1/2023 SE242417.098	CR99 SOIL - 25/1/2023 SE242417.099	CR100 SOIL - 25/1/2023 SE242417.100
% Moisture	%w/w	1	20.9	32.2	18.5	28.5	17.5

Particle sizing of soils by sieving [AN005] Tested: 7/2/2023

PARAMETER	UOM	LOR	CR44 SOIL - 25/1/2023 SE242417.044
Passing 75µm*	%w/w	1	91
Retained 75µm*	%w/w	1	9

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 7/2/2023

PARAMETER	UOM	LOR	CR44 SOIL - 25/1/2023 SE242417.044
Clay (<0.002mm)*	%w/w	0.1	3.0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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STATEMENT OF QA/QC PERFORMANCE

SE242417 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156**
Order Number	**15156**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242417 R0**
Date Received	31 Jan 2023
Date Reported	07 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in soil (1:5)	1 item
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	100 Soil	Type of documentation received	COC
Date documentation received	31/1/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242417 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR44	SE242417.044	LB270623	25 Jan 2023	31 Jan 2023	22 Feb 2023	06 Feb 2023	22 Feb 2023	06 Feb 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR1	SE242417.001	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR2	SE242417.002	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR3	SE242417.003	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR4	SE242417.004	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR5	SE242417.005	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR6	SE242417.006	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR7	SE242417.007	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR8	SE242417.008	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR9	SE242417.009	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR10	SE242417.010	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR11	SE242417.011	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR12	SE242417.012	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR13	SE242417.013	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR14	SE242417.014	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR15	SE242417.015	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR16	SE242417.016	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR17	SE242417.017	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR18	SE242417.018	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR19	SE242417.019	LB270325	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR20	SE242417.020	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR21	SE242417.021	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR22	SE242417.022	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR23	SE242417.023	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR24	SE242417.024	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR25	SE242417.025	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR26	SE242417.026	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR27	SE242417.027	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR28	SE242417.028	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR29	SE242417.029	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR30	SE242417.030	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR31	SE242417.031	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR32	SE242417.032	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR33	SE242417.033	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR34	SE242417.034	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR35	SE242417.035	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR36	SE242417.036	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR37	SE242417.037	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR38	SE242417.038	LB270326	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR39	SE242417.039	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR40	SE242417.040	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR41	SE242417.041	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR42	SE242417.042	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR43	SE242417.043	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR44	SE242417.044	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR45	SE242417.045	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR46	SE242417.046	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR47	SE242417.047	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR48	SE242417.048	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR49	SE242417.049	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR50	SE242417.050	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR51	SE242417.051	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR52	SE242417.052	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR53	SE242417.053	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR54	SE242417.054	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR55	SE242417.055	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023

HOLDING TIME SUMMARY

SE242417 R0

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Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil (continued) — Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR56	SE242417.056	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR57	SE242417.057	LB270327	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR58	SE242417.058	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR59	SE242417.059	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR60	SE242417.060	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR61	SE242417.061	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR62	SE242417.062	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR63	SE242417.063	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR64	SE242417.064	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR65	SE242417.065	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR66	SE242417.066	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR67	SE242417.067	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR68	SE242417.068	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR69	SE242417.069	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR70	SE242417.070	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR71	SE242417.071	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR72	SE242417.072	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR73	SE242417.073	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR74	SE242417.074	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR75	SE242417.075	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR76	SE242417.076	LB270328	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	03 Feb 2023
CR77	SE242417.077	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR78	SE242417.078	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR79	SE242417.079	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR80	SE242417.080	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR81	SE242417.081	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR82	SE242417.082	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR83	SE242417.083	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR84	SE242417.084	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR85	SE242417.085	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR86	SE242417.086	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR87	SE242417.087	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR88	SE242417.088	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR89	SE242417.089	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR90	SE242417.090	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR91	SE242417.091	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR92	SE242417.092	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR93	SE242417.093	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR94	SE242417.094	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR95	SE242417.095	LB270329	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR96	SE242417.096	LB270347	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR97	SE242417.097	LB270347	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR98	SE242417.098	LB270347	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR99	SE242417.099	LB270347	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR100	SE242417.100	LB270347	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023

Moisture Content — Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR1	SE242417.001	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR2	SE242417.002	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR3	SE242417.003	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR4	SE242417.004	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR5	SE242417.005	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR6	SE242417.006	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR7	SE242417.007	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR8	SE242417.008	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR9	SE242417.009	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR10	SE242417.010	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR11	SE242417.011	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR12	SE242417.012	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023

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Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

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Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR13	SE242417.013	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR14	SE242417.014	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR15	SE242417.015	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR16	SE242417.016	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR17	SE242417.017	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR18	SE242417.018	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR19	SE242417.019	LB270338	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR20	SE242417.020	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR21	SE242417.021	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR22	SE242417.022	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR23	SE242417.023	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR24	SE242417.024	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR25	SE242417.025	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR26	SE242417.026	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR27	SE242417.027	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR28	SE242417.028	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR29	SE242417.029	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR30	SE242417.030	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR31	SE242417.031	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR32	SE242417.032	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR33	SE242417.033	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR34	SE242417.034	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR35	SE242417.035	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR36	SE242417.036	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR37	SE242417.037	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR38	SE242417.038	LB270339	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR39	SE242417.039	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR40	SE242417.040	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR41	SE242417.041	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR42	SE242417.042	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR43	SE242417.043	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR44	SE242417.044	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR45	SE242417.045	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR46	SE242417.046	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR47	SE242417.047	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR48	SE242417.048	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR49	SE242417.049	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR50	SE242417.050	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR51	SE242417.051	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR52	SE242417.052	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR53	SE242417.053	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR54	SE242417.054	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR55	SE242417.055	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR56	SE242417.056	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR57	SE242417.057	LB270340	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR58	SE242417.058	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR59	SE242417.059	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR60	SE242417.060	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR61	SE242417.061	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR62	SE242417.062	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR63	SE242417.063	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR64	SE242417.064	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR65	SE242417.065	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR66	SE242417.066	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR67	SE242417.067	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR68	SE242417.068	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR69	SE242417.069	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR70	SE242417.070	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR71	SE242417.071	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR72	SE242417.072	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023

HOLDING TIME SUMMARY

SE242417 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR73	SE242417.073	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR74	SE242417.074	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR75	SE242417.075	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR76	SE242417.076	LB270341	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	03 Feb 2023
CR77	SE242417.077	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR78	SE242417.078	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR79	SE242417.079	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR80	SE242417.080	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR81	SE242417.081	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR82	SE242417.082	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR83	SE242417.083	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR84	SE242417.084	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR85	SE242417.085	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR86	SE242417.086	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR87	SE242417.087	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR88	SE242417.088	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR89	SE242417.089	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR90	SE242417.090	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR91	SE242417.091	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR92	SE242417.092	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR93	SE242417.093	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR94	SE242417.094	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR95	SE242417.095	LB270342	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR96	SE242417.096	LB270351	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR97	SE242417.097	LB270351	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR98	SE242417.098	LB270351	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR99	SE242417.099	LB270351	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR100	SE242417.100	LB270351	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR4	SE242417.004	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR8	SE242417.008	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR12	SE242417.012	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR16	SE242417.016	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR20	SE242417.020	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR24	SE242417.024	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR28	SE242417.028	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR32	SE242417.032	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR36	SE242417.036	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR40	SE242417.040	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR44	SE242417.044	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR48	SE242417.048	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR52	SE242417.052	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR56	SE242417.056	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR60	SE242417.060	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR64	SE242417.064	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR68	SE242417.068	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR72	SE242417.072	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR76	SE242417.076	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR80	SE242417.080	LB270133	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	03 Feb 2023
CR84	SE242417.084	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR88	SE242417.088	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR92	SE242417.092	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR96	SE242417.096	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR100	SE242417.100	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR44	SE242417.044	LB270548	25 Jan 2023	31 Jan 2023	01 Feb 2023	03 Feb 2023†	04 Feb 2023	03 Feb 2023

HOLDING TIME SUMMARY

SE242417 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR1	SE242417.001	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR2	SE242417.002	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR3	SE242417.003	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR4	SE242417.004	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR5	SE242417.005	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR6	SE242417.006	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR7	SE242417.007	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR8	SE242417.008	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR9	SE242417.009	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR10	SE242417.010	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR11	SE242417.011	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR12	SE242417.012	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR13	SE242417.013	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR14	SE242417.014	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR15	SE242417.015	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR16	SE242417.016	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR17	SE242417.017	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR18	SE242417.018	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR19	SE242417.019	LB270184	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR20	SE242417.020	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR21	SE242417.021	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR22	SE242417.022	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR23	SE242417.023	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR24	SE242417.024	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR25	SE242417.025	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR26	SE242417.026	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR27	SE242417.027	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR28	SE242417.028	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR29	SE242417.029	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR30	SE242417.030	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR31	SE242417.031	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR32	SE242417.032	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR33	SE242417.033	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR34	SE242417.034	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR35	SE242417.035	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR36	SE242417.036	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR37	SE242417.037	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR38	SE242417.038	LB270185	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR39	SE242417.039	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR40	SE242417.040	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR41	SE242417.041	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR42	SE242417.042	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR43	SE242417.043	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR44	SE242417.044	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR45	SE242417.045	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR46	SE242417.046	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR47	SE242417.047	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR48	SE242417.048	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR49	SE242417.049	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR50	SE242417.050	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR51	SE242417.051	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR52	SE242417.052	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR53	SE242417.053	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR54	SE242417.054	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR55	SE242417.055	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR56	SE242417.056	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR57	SE242417.057	LB270186	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	03 Feb 2023
CR58	SE242417.058	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR59	SE242417.059	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR60	SE242417.060	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023

HOLDING TIME SUMMARY

SE242417 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR61	SE242417.061	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR62	SE242417.062	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR63	SE242417.063	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR64	SE242417.064	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR65	SE242417.065	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR66	SE242417.066	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR67	SE242417.067	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR68	SE242417.068	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR69	SE242417.069	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR70	SE242417.070	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR71	SE242417.071	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR72	SE242417.072	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR73	SE242417.073	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR74	SE242417.074	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR75	SE242417.075	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR76	SE242417.076	LB270187	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	06 Feb 2023
CR77	SE242417.077	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR78	SE242417.078	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR79	SE242417.079	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR80	SE242417.080	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR81	SE242417.081	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR82	SE242417.082	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR83	SE242417.083	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR84	SE242417.084	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR85	SE242417.085	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR86	SE242417.086	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR87	SE242417.087	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR88	SE242417.088	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR89	SE242417.089	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR90	SE242417.090	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR91	SE242417.091	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR92	SE242417.092	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR93	SE242417.093	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR94	SE242417.094	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR95	SE242417.095	LB270188	25 Jan 2023	31 Jan 2023	24 Jul 2023	01 Feb 2023	24 Jul 2023	07 Feb 2023
CR96	SE242417.096	LB270346	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR97	SE242417.097	LB270346	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR98	SE242417.098	LB270346	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR99	SE242417.099	LB270346	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR100	SE242417.100	LB270346	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	CR4	SE242417.004	%	60 - 130%	120
	CR8	SE242417.008	%	60 - 130%	104
	CR12	SE242417.012	%	60 - 130%	100
	CR16	SE242417.016	%	60 - 130%	103
	CR20	SE242417.020	%	60 - 130%	103
	CR24	SE242417.024	%	60 - 130%	107
	CR28	SE242417.028	%	60 - 130%	109
	CR32	SE242417.032	%	60 - 130%	100
	CR36	SE242417.036	%	60 - 130%	103
	CR40	SE242417.040	%	60 - 130%	100
	CR44	SE242417.044	%	60 - 130%	96
	CR48	SE242417.048	%	60 - 130%	101
	CR52	SE242417.052	%	60 - 130%	96
	CR56	SE242417.056	%	60 - 130%	101
	CR60	SE242417.060	%	60 - 130%	101
	CR64	SE242417.064	%	60 - 130%	104
	CR68	SE242417.068	%	60 - 130%	109
	CR72	SE242417.072	%	60 - 130%	109
	CR76	SE242417.076	%	60 - 130%	104
	CR80	SE242417.080	%	60 - 130%	99
	CR84	SE242417.084	%	60 - 130%	95
	CR88	SE242417.088	%	60 - 130%	99
	CR92	SE242417.092	%	60 - 130%	103
	CR96	SE242417.096	%	60 - 130%	92
	CR100	SE242417.100	%	60 - 130%	93

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB270623.001	Exchangeable Sodium, Na	mg/kg	2	-0.8896
	Exchangeable Potassium, K	mg/kg	2	0.4268
	Exchangeable Calcium, Ca	mg/kg	2	-0.1492
	Exchangeable Magnesium, Mg	mg/kg	2	0.0061

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270325.001	Mercury	mg/kg	0.05	<0.05
LB270326.001	Mercury	mg/kg	0.05	<0.05
LB270327.001	Mercury	mg/kg	0.05	<0.05
LB270328.001	Mercury	mg/kg	0.05	<0.05
LB270329.001	Mercury	mg/kg	0.05	<0.05
LB270347.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270133.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	94
LB270142.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270142.001		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	96

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB270184.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2
LB270185.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2
LB270186.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2
LB270187.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2
LB270188.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2
LB270346.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242417.010	LB270325.014	Mercury	mg/kg	0.05	<0.05	<0.05	153	0
SE242417.019	LB270325.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242417.029	LB270326.014	Mercury	mg/kg	0.05	<0.05	<0.05	170	0
SE242417.038	LB270326.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242417.048	LB270327.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242417.057	LB270327.024	Mercury	mg/kg	0.05	0.06	0.06	110	6
SE242417.067	LB270328.014	Mercury	mg/kg	0.05	<0.05	<0.05	149	0
SE242417.076	LB270328.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242417.086	LB270329.014	Mercury	mg/kg	0.05	<0.05	<0.05	185	0
SE242417.095	LB270329.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242417.099	LB270347.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE242419.005	LB270347.020	Mercury	mg/kg	0.05	<0.05	0.05	135	6

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242403.004	LB270351.011	% Moisture	%w/w	1	1.2	1.1	118	3
SE242417.010	LB270338.011	% Moisture	%w/w	1	15.2	14.1	37	7
SE242417.019	LB270338.021	% Moisture	%w/w	1	9.4	9.7	40	3
SE242417.029	LB270339.011	% Moisture	%w/w	1	13.7	13.9	37	1
SE242417.038	LB270339.021	% Moisture	%w/w	1	8.8	10.8	40	20
SE242417.048	LB270340.011	% Moisture	%w/w	1	9.6	9.2	41	4
SE242417.057	LB270340.021	% Moisture	%w/w	1	15.9	11.1	37	36
SE242417.067	LB270341.011	% Moisture	%w/w	1	7.9	10.0	41	24
SE242417.076	LB270341.021	% Moisture	%w/w	1	8.8	12.9	39	37
SE242417.086	LB270342.011	% Moisture	%w/w	1	16.1	15.4	36	5
SE242417.095	LB270342.021	% Moisture	%w/w	1	13.5	13.0	38	3
SE242418.005	LB270351.022	% Moisture	%w/w	1	6.9	5.8	46	17
SE242418.010	LB270351.028	% Moisture	%w/w	1	10.7	10.2	40	5

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242417.040	LB270133.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	1
SE242417.080	LB270133.025		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242417.080	LB270133.025		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	1
SE242418.007	LB270142.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	0
SE242420.036	LB270142.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.036	LB270142.024		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	30	5

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242465.003	LB270548.020	pH	pH Units	0.1	5.6	5.6	32	0
SE242575.002	LB270548.019	pH	pH Units	0.1	5.7	5.6	32	2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242417.010	LB270184.014	Arsenic, As	mg/kg	1	27	22	34	22
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	177	0
		Chromium, Cr	mg/kg	0.5	9.4	7.9	36	18
		Copper, Cu	mg/kg	0.5	31	30	32	1
		Nickel, Ni	mg/kg	0.5	1.7	1.6	61	3
		Lead, Pb	mg/kg	1	83	83	31	0
		Zinc, Zn	mg/kg	2	13	13	45	1
SE242417.019	LB270184.024	Arsenic, As	mg/kg	1	<1	1	130	16
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.1	7.9	37	26
		Copper, Cu	mg/kg	0.5	8.1	8.9	36	9
		Nickel, Ni	mg/kg	0.5	1.3	1.3	69	1
		Lead, Pb	mg/kg	1	5	5	50	6
		Zinc, Zn	mg/kg	2	13	11	47	14
SE242417.029	LB270185.014	Arsenic, As	mg/kg	1	2	3	68	11
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	24	32	8
		Copper, Cu	mg/kg	0.5	11	10	35	1
		Nickel, Ni	mg/kg	0.5	5.0	5.3	40	5
		Lead, Pb	mg/kg	1	12	13	38	9
		Zinc, Zn	mg/kg	2	110	100	32	3
SE242417.038	LB270185.024	Arsenic, As	mg/kg	1	<1	<1	151	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.7	6.7	37	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued) — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242417.038	LB270185.024	Copper, Cu	mg/kg	0.5	12	12	34	2
		Nickel, Ni	mg/kg	0.5	1.4	1.4	66	1
		Lead, Pb	mg/kg	1	5	5	50	1
		Zinc, Zn	mg/kg	2	11	11	49	1
SE242417.048	LB270186.014	Arsenic, As	mg/kg	1	2	2	85	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	17	11	34	43 ⓡ
		Copper, Cu	mg/kg	0.5	32	30	32	4
		Nickel, Ni	mg/kg	0.5	3.4	3.3	45	4
		Lead, Pb	mg/kg	1	9	9	41	3
		Zinc, Zn	mg/kg	2	28	26	37	8
SE242417.057	LB270186.024	Arsenic, As	mg/kg	1	24	25	34	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	8.3	9.8	36	17
		Copper, Cu	mg/kg	0.5	39	50	31	26
		Nickel, Ni	mg/kg	0.5	1.6	1.5	62	6
		Lead, Pb	mg/kg	1	98	75	31	26
		Zinc, Zn	mg/kg	2	18	21	40	14
SE242417.067	LB270187.014	Arsenic, As	mg/kg	1	3	3	60	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	29	31	32	7
		Copper, Cu	mg/kg	0.5	67	67	31	0
		Nickel, Ni	mg/kg	0.5	5.5	5.4	39	2
		Lead, Pb	mg/kg	1	18	20	35	8
		Zinc, Zn	mg/kg	2	60	75	33	21
SE242417.076	LB270187.024	Arsenic, As	mg/kg	1	2	2	81	20
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.8	5.6	38	18
		Copper, Cu	mg/kg	0.5	21	20	32	3
		Nickel, Ni	mg/kg	0.5	1.5	1.6	62	1
		Lead, Pb	mg/kg	1	10	10	40	0
		Zinc, Zn	mg/kg	2	14	16	44	10
SE242417.086	LB270188.014	Arsenic, As	mg/kg	1	6	6	48	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	18	17	33	3
		Copper, Cu	mg/kg	0.5	50	48	31	4
		Nickel, Ni	mg/kg	0.5	4.9	4.9	40	0
		Lead, Pb	mg/kg	1	26	26	34	2
		Zinc, Zn	mg/kg	2	30	30	37	1
SE242417.095	LB270188.024	Arsenic, As	mg/kg	1	<1	<1	168	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.7	6.6	38	2
		Copper, Cu	mg/kg	0.5	3.6	3.8	44	5
		Nickel, Ni	mg/kg	0.5	1.3	1.3	68	2
		Lead, Pb	mg/kg	1	8	8	43	0
		Zinc, Zn	mg/kg	2	8	9	53	14
SE242417.099	LB270346.014	Arsenic, As	mg/kg	1	<1	<1	176	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.9	6.5	37	6
		Copper, Cu	mg/kg	0.5	3.8	3.8	43	1
		Nickel, Ni	mg/kg	0.5	1.4	1.3	66	10
		Lead, Pb	mg/kg	1	8	7	43	6
		Zinc, Zn	mg/kg	2	14	11	46	22

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270623.002	Exchangeable Sodium, Na	meq/100g	0.01	0.19	0.194	80 - 120	96
	Exchangeable Potassium, K	meq/100g	0.01	0.60	0.63	80 - 120	96
	Exchangeable Calcium, Ca	meq/100g	0.01	5.9	6.3	80 - 120	94
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	93

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270325.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	113
LB270326.002	Mercury	mg/kg	0.05	0.26	0.2	70 - 130	128
LB270327.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	114
LB270328.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	112
LB270329.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	113
LB270347.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	116

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270133.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	81
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	85
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	81
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	78
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	91
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	69
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	97
LB270142.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	86
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	89
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	87
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	87
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	93
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	79
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	84

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270548.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270184.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	3.5	4.81	70 - 130	74
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	270	273	80 - 120	101
LB270185.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	3.5	4.81	70 - 130	72
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	104
	Zinc, Zn	mg/kg	2	270	273	80 - 120	101
LB270186.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	84
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	102
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	280	273	80 - 120	101
LB270187.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	108
	Cadmium, Cd	mg/kg	0.3	3.5	4.81	70 - 130	72
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270187.002	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99
LB270188.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	108
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	108
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB270346.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	84
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	108
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	103
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	89	89.9	80 - 120	99
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242402.001	LB270347.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	107
SE242417.001	LB270325.004	Mercury	mg/kg	0.05	0.29	0.05	0.2	117
SE242417.020	LB270326.004	Mercury	mg/kg	0.05	0.25	<0.05	0.2	118
SE242417.039	LB270327.004	Mercury	mg/kg	0.05	0.27	<0.05	0.2	129
SE242417.058	LB270328.004	Mercury	mg/kg	0.05	0.28	<0.05	0.2	118
SE242417.077	LB270329.004	Mercury	mg/kg	0.05	0.26	<0.05	0.2	117

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242417.004	LB270133.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	86
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	90
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	85
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	83
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	97
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	73
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.18	-	101
SE242417.084	LB270142.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	91
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	92
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	89
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	87
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	96
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242417.084	LB270142.004		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	89
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	-	93

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242402.001	LB270346.004	Arsenic, As	mg/kg	1	49	6	50	86
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	48	2.5	50	91
		Copper, Cu	mg/kg	0.5	47	2.2	50	90
		Nickel, Ni	mg/kg	0.5	46	0.7	50	91
		Lead, Pb	mg/kg	1	54	19	50	71
		Zinc, Zn	mg/kg	2	54	17	50	74
SE242417.001	LB270184.004	Arsenic, As	mg/kg	1	48	3	50	88
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	56	10	50	90
		Copper, Cu	mg/kg	0.5	60	15	50	91
		Nickel, Ni	mg/kg	0.5	48	3.5	50	88
		Lead, Pb	mg/kg	1	60	20	50	80
		Zinc, Zn	mg/kg	2	100	78	50	50 ⓖ
SE242417.020	LB270185.004	Arsenic, As	mg/kg	1	49	2	50	94
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	91
		Chromium, Cr	mg/kg	0.5	55	8.2	50	93
		Copper, Cu	mg/kg	0.5	58	8.6	50	99
		Nickel, Ni	mg/kg	0.5	48	1.5	50	93
		Lead, Pb	mg/kg	1	53	7	50	93
		Zinc, Zn	mg/kg	2	59	13	50	92
SE242417.039	LB270186.004	Arsenic, As	mg/kg	1	48	2	50	92
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	55	6.6	50	96
		Copper, Cu	mg/kg	0.5	61	12	50	97
		Nickel, Ni	mg/kg	0.5	46	1.1	50	90
		Lead, Pb	mg/kg	1	50	4	50	91
		Zinc, Zn	mg/kg	2	57	10	50	94
SE242417.058	LB270187.004	Arsenic, As	mg/kg	1	57	11	50	93
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.5	54	6.9	50	94
		Copper, Cu	mg/kg	0.5	82	37	50	90
		Nickel, Ni	mg/kg	0.5	47	1.8	50	91
		Lead, Pb	mg/kg	1	85	43	50	84
		Zinc, Zn	mg/kg	2	65	18	50	94
SE242417.077	LB270188.004	Arsenic, As	mg/kg	1	50	3	50	95
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	91
		Chromium, Cr	mg/kg	0.5	56	7.0	50	98
		Copper, Cu	mg/kg	0.5	67	18	50	98
		Nickel, Ni	mg/kg	0.5	50	1.8	50	97
		Lead, Pb	mg/kg	1	58	12	50	92
		Zinc, Zn	mg/kg	2	64	15	50	96

MATRIX SPIKE DUPLICATES

SE242417 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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Chain of Custody Form – Ref 15156

Ref: 15156
Investigator: Envirowest Consulting
9 Cameron Place
PO Box 8158
ORANGE NSW 2800
Telephone: (02) 6361 4954

Email: [redacted]
Contact Person: Felipe Canavez
Invoice: accounts@envirowest.net.au

Laboratory: SGS SYDNEY
16/33 Maddox Street
ALEXANDRIA NSW 2015

Quotation #: Envir_70119_2019
Courier/CN: Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Ccol	HNO3/HCl	Unpreserved	Analysis – SGS Method Code: CL2T (8 metals)	OCP	pH	CEC (Cation exchange capacity)	Clay content
1	CR1	A	25/01/2023		X		X			X				
2	CR2	A	25/01/2023		X		X			X				
3	CR3	A	25/01/2023		X		X			X				
4	CR4	A	25/01/2023		X		X			X	X			
5	CR5	A	25/01/2023		X		X			X				
6	CR6	A	25/01/2023		X		X			X				
7	CR7	A	25/01/2023		X		X			X				
8	CR8	A	25/01/2023		X		X			X	X			
9	CR9	A	25/01/2023		X		X			X				
10	CR10	A	25/01/2023		X		X			X				
11	CR11	A	25/01/2023		X		X			X				
12	CR12	A	25/01/2023		X		X			X	X			
13	CR13	A	25/01/2023		X		X			X				
14	CR14	A	25/01/2023		X		X			X				
15	CR15	A	25/01/2023		X		X			X				
16	CR16	A	25/01/2023		X		X			X	X			
17	CR17	A	25/01/2023		X		X			X				
18	CR18	A	25/01/2023		X		X			X				
19	CR19	A	25/01/2023		X		X			X				
20	CR20	A	25/01/2023		X		X			X	X			

SGS EHS Sydney COC
SE242417

Investigator: I attest that the proper field sampling proced25/01/2023ures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 25/01/2023 Time: 10.30

Relinquished by: (print and signature) Virginia Bragg [redacted] Date: 30/01/2023 Time 1500

Received by: (print and signature) [redacted] Date 31/1/23 Time @10.50

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

Chain of Custody Form – Ref 15156

Ref:	**15156**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL2T**	**OCP**	**pH**	**CEC**	**Clay content**	
Email:	[redacted]													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL2T (8 metals)	OCP	pH	Cation exchange capacity	Clay content	
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
21	CR21	A	25/01/2023		X		X			X				
22	CR22	A	25/01/2023		X		X			X				
23	CR23	A	25/01/2023		X		X			X				
24	CR24	A	25/01/2023		X		X			X	X			
25	CR25	A	25/01/2023		X		X			X				
26	CR26	A	25/01/2023		X		X			X				
27	CR27	A	25/01/2023		X		X			X				
28	CR28	A	25/01/2023		X		X			X	X			
29	CR29	A	25/01/2023		X		X			X				
30	CR30	A	25/01/2023		X		X			X				
31	CR31	A	25/01/2023		X		X			X				
32	CR32	A	25/01/2023		X		X			X	X			
33	CR33	A	25/01/2023		X		X			X				
34	CR34	A	25/01/2023		X		X			X				
35	CR35	A	25/01/2023		X		X			X				
36	CR36	A	25/01/2023		X		X			X	X			
37	CR37	A	25/01/2023		X		X			X				
38	CR38	A	25/01/2023		X		X			X				
39	CR39	A	25/01/2023		X		X			X				
40	CR40	A	25/01/2023		X		X			X	X			

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date:25/01/2023 Time: 10.30

Relinquished by: Virginia Bragg [redacted] Date: 30/01/2023 Time 1500

Received by: [redacted] Date 31/1/23 Time @ 10.50

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

Chain of Custody Form – Ref 15156

Ref:	**15156**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL2T**	**OCP**	**pH**	**CEC**	**Clay content**	
Email:	[redacted]													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL2T (8 metals)	OCP	pH	Cation exchange capacity	Clay content	
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
41	CR41	A	25/01/2023		X		X			X				
42	CR42	A	25/01/2023		X		X			X				
43	CR43	A	25/01/2023		X		X			X				
44	CR44	A	25/01/2023		X		X			X	X	X	X	X
45	CR45	A	25/01/2023		X		X			X				
46	CR46	A	25/01/2023		X		X			X				
47	CR47	A	25/01/2023		X		X			X				
48	CR48	A	25/01/2023		X		X			X				
49	CR49	A	25/01/2023		X		X			X				
50	CR50	A	25/01/2023		X		X			X				
51	CR51	A	25/01/2023		X		X			X				
52	CR52	A	25/01/2023		X		X			X				
53	CR53	A	25/01/2023		X		X			X				
54	CR54	A	25/01/2023		X		X			X				
55	CR55	A	25/01/2023		X		X			X				
56	CR56	A	25/01/2023		X		X			X				
57	CR57	A	25/01/2023		X		X			X				
58	CR58	A	25/01/2023		X		X			X				
59	CR59	A	25/01/2023		X		X			X				
60	CR60	A	25/01/2023		X		X			X				

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 25/01/2023 Time: 10.30

Relinquished by: Virginia Bragg [redacted] Date: 30/01/2023 Time 1500

Received by: [redacted] Date 31/1/23 Time @ 10.50

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Chain of Custody Form – Ref 15156

Ref:	**15156**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL2T**	**OCP**	**pH**	**CEC**	**Clay content**	
Email:	[redacted]													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL2T (8 metals)	OCP	pH	Cation exchange capacity	Clay content	
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
61	CR61	A	25/01/2023		X		X			X				
62	CR62	A	25/01/2023		X		X			X				
63	CR63	A	25/01/2023		X		X			X				
64	CR64	A	25/01/2023		X		X			X	X			
65	CR65	A	25/01/2023		X		X			X				
66	CR66	A	25/01/2023		X		X			X				
67	CR67	A	25/01/2023		X		X			X				
68	CR68	A	25/01/2023		X		X			X	X			
69	CR69	A	25/01/2023		X		X			X				
70	CR70	A	25/01/2023		X		X			X				
71	CR71	A	25/01/2023		X		X			X				
72	CR72	A	25/01/2023		X		X			X	X			
73	CR73	A	25/01/2023		X		X			X				
74	CR74	A	25/01/2023		X		X			X				
75	CR75	A	25/01/2023		X		X			X				
76	CR76	A	25/01/2023		X		X			X	X			
77	CR77	A	25/01/2023		X		X			X				
78	CR78	A	25/01/2023		X		X			X				
79	CR79	A	25/01/2023		X		X			X				
80	CR80	A	25/01/2023		X		X			X	X			

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 25/01/2023 Time: 10.30

Relinquished by: Virginia Brada [redacted] (print and signature) Date: 30/01/2023 Time 1500

Received by: [redacted] (print and signature) Date Time 31/1/23 @ 10.50

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

Chain of Custody Form – Ref 15156

Ref:	**15156**		**Sample matrix**			**Sample preservation**			**Analysis**					
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800								**SGS Method Code**					
Telephone:	(02) 6361 4954								**CL2T**	**OCP**	**pH**	**CEC**	**Clay content**	
Email:	[redacted]													
Contact Person:	Felipe Canavez													
Invoice:	accounts@envirowest.net.au													
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015		Water	Soil	Sludge	Cool	HNO3/HCl	Unpre-served	CL2T (8 metals)	OCP	pH	Cation exchange capacity	Clay content	
Quotation #:	Envir_70119_2019													
Courier/CN:	Grants Express													
	Sample ID	**Container***	**Sampling Date/Time**											
81	CR81	A	25/01/2023		X		X			X				
82	CR82	A	25/01/2023		X		X			X				
83	CR83	A	25/01/2023		X		X			X				
84	CR84	A	25/01/2023		X		X			X	X			
85	CR85	A	25/01/2023		X		X			X				
86	CR86	A	25/01/2023		X		X			X				
87	CR87	A	25/01/2023		X		X			X				
88	CR88	A	25/01/2023		X		X			X	X			
89	CR89	A	25/01/2023		X		X			X				
90	CR90	A	25/01/2023		X		X			X				
91	CR91	A	25/01/2023		X		X			X				
92	CR92	A	25/01/2023		X		X			X	X			
93	CR93	A	25/01/2023		X		X			X				
94	CR94	A	25/01/2023		X		X			X				
95	CR95	A	25/01/2023		X		X			X				
96	CR96	A	25/01/2023		X		X			X	X			
97	CR97	A	25/01/2023		X		X			X				
98	CR98	A	25/01/2023		X		X			X				
99	CR99	A	25/01/2023		X		X			X				
100	CR100	A	25/01/2023		X		X			X	X			
Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.						Sampler name: Felipe Canavez Date: 25/01/2023 Time: 10.30								
Relinquished by: (print and signature)	Virginia Bragg [redacted]		Date: 30/01/2023		Time 1500	Received by: (print and signature)	[redacted]		Date 31/1/23		Time @ 10.50			

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	SGS I&E SYDNEY
Address	5058 201 I&E HSE SYDNEY (EX 5258) UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015
Telephone	[redacted]
Facsimile	
Email	
Project	**15156**
Order Number	**SE242417**
Samples	1

LABORATORY DETAILS

Manager	Anthony Nilsson
Laboratory	SGS Cairns Environmental
Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**CE164439 R0**
Date Received	02 Feb 2023
Date Reported	07 Feb 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(3146/19038)

SIGNATORIES

[redacted]

Anthony NILSSON
Operations Manager

Parameter	Units	LOR	Sample Number CE164439.044 Sample Matrix Soil Sample Date 25 Jan 2023 Sample Name SE242417.044
Moisture Content Method: AN002 Tested: 6/2/2023			
% Moisture	%w/w	1	**11**
Particle sizing of soils by sieving Method: AN005 Tested: 7/2/2023			
Passing 75µm	%w/w	1	**91**
Retained 75µm	%w/w	1	**9**
Particle sizing of soils <75µm by hydrometer Method: AN005 Tested: 7/2/2023			
Clay (<0.002mm)	%w/w	0.1	**3.0**

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

No QC samples were reported for this job.

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156**
Order Number	**15156**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242417RE R0**
Date Received	16/3/2023
Date Reported	22/3/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]

Dong LIANG

Metals/Inorganics Team Leader

[redacted]

Shane MCDERMOTT

Inorganic/Metals Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 16/3/2023

PARAMETER	UOM	LOR	CR1 SOIL - 25/1/2023 SE242417RE.001	CR21 SOIL - 25/1/2023 SE242417RE.021	CR41 SOIL - 25/1/2023 SE242417RE.041	CR61 SOIL - 25/1/2023 SE242417RE.061	CR81 SOIL - 25/1/2023 SE242417RE.081
Arsenic, As	mg/kg	1	3	59	2	1	6
Cadmium, Cd	mg/kg	0.3	<0.3	0.7	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.3	16	7.0	11	16
Copper, Cu	mg/kg	0.5	13	120	18	35	43
Lead, Pb	mg/kg	1	14	210	9	7	26
Nickel, Ni	mg/kg	0.5	3.0	3.6	2.1	2.7	4.1
Zinc, Zn	mg/kg	2	84	40	21	15	16

METHOD	METHODOLOGY SUMMARY
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242417RE R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156**
Order Number	**15156**
Samples	100

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242417RE R0**
Date Received	16 Mar 2023
Date Reported	22 Mar 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	5 Soil	Type of documentation received	Email
Date documentation received	16/3/2023@11:47an	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242417RE R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR1	SE242417RE.001	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
CR21	SE242417RE.021	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
CR41	SE242417RE.041	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
CR61	SE242417RE.061	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
CR81	SE242417RE.081	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023

SURROGATES

SE242417RE R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB274159.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420RE.02	LB274159.014	Arsenic, As	mg/kg	1	1.47444	1.4698718699	98	0
6		Cadmium, Cd	mg/kg	0.3	0.07304	0.0707004878	200	0
		Chromium, Cr	mg/kg	0.5	12.80576	14.5695375609	34	13
		Copper, Cu	mg/kg	0.5	39.72408	38.1721534959	31	4
		Nickel, Ni	mg/kg	0.5	2.9502	2.7525183739	48	7
		Lead, Pb	mg/kg	1	7.56492	7.4702484552	43	1
		Zinc, Zn	mg/kg	2	13.4596	13.1616377235	45	2
SE242420RE.02	LB274159.017	Arsenic, As	mg/kg	1	0.9262809917	0.8241322314	144	0
8		Cadmium, Cd	mg/kg	0.3	0.0396694214	0.0247933884	200	0
		Chromium, Cr	mg/kg	0.5	6.2885950413	6.3535537190	38	1
		Copper, Cu	mg/kg	0.5	2.9018181818	2.9608264462	47	2
		Nickel, Ni	mg/kg	0.5	1.2411570247	1.2976859504	69	4
		Lead, Pb	mg/kg	1	7.0824793388	7.2471074380	44	2
		Zinc, Zn	mg/kg	2	11.1629752066	11.6692561983	48	4

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB274159.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	5.2	4.81	70 - 130	109
	Chromium, Cr	mg/kg	0.5	44	38.31	80 - 120	116
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	100
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102

MATRIX SPIKES

SE242417RE R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242417RE.0	LB274159.004	Arsenic, As	mg/kg	1	49	3	50	93
01		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	56	8.3	50	95
		Copper, Cu	mg/kg	0.5	59	13	50	93
		Nickel, Ni	mg/kg	0.5	50	3.0	50	95
		Lead, Pb	mg/kg	1	58	14	50	87
		Zinc, Zn	mg/kg	2	110	84	50	43 ⓑ

MATRIX SPIKE DUPLICATES

SE242417RE R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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Hi GBS team.

Please book this in as RE job.
Thanks.

Matthew Tyler
Environment, Health & Safety
Client Services

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015

From: Felipe Canavez <[redacted]
Sent: Thursday, 16 March 2023 11:47 AM
To: AU.Environmental.Sydney, AU (Sydney) <[redacted]
Cc: AU.SampleReceipt.Sydney, AU (Sydney) <[redacted]
Subject: [EXTERNAL] RE: Report Job SE242417, your reference 15156, order number 15156

[redacted]

Hi,

Can I have the samples CR1, CR21, CR41, CR61 and CR81 reanalysed for the suite CL1T please?

Standard turnaround time.

Thank you,

Felipe Canavez
Environmental Geologist

Envirowest Consulting Pty Ltd
9 Cameron Place
PO Box 8158
Orange NSW 2800
ph. 02 6361 4954
[redacted]
www.envirowest.net.au

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Please consider the environment before printing this email.

From: [redacted]
Sent: Tuesday, February 7, 2023 6:04 PM
To: admin[redacted] Felipe Canavez [redacted]
Subject: Report Job SE242417, your reference 15156, order number 15156

Dear Valued Customer,

Please find attached the report for SGS job SE242417, your reference 15156, order number 15156.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420 R0**
Date Received	31/1/2023
Date Reported	7/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

Clay Content subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No. CE164440

SIGNATORIES

[redacted]
Akheeqar BENIAMEEN
Chemist

[redacted]
Dong LIANG
Metals/Inorganics Team Leader

[redacted]
Huong CRAWFORD
Production Manager

[redacted]
Kamrul AHSAN
Senior Chemist

[redacted]
Shane MCDERMOTT
Inorganic/Metals Chemist

[redacted]
Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 31/1/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420.030	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
Benzene	mg/kg	0.1	<0.1	<0.1	**0.2**	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 31/1/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420.030	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	**0.2**	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 31/1/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420.030	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
TRH C10-C14	mg/kg	20	<20	69	<20	47	<20
TRH C15-C28	mg/kg	45	130	9300	<45	880	120
TRH C29-C36	mg/kg	45	84	14000	<45	1100	150
TRH C37-C40	mg/kg	100	<100	5400	<100	140	<100
TRH >C10-C16	mg/kg	25	<25	110	<25	61	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	110	<25	61	<25
TRH >C16-C34 (F3)	mg/kg	90	180	19000	<90	1800	240
TRH >C34-C40 (F4)	mg/kg	120	<120	8400	<120	330	<120
TRH C10-C36 Total	mg/kg	110	210	23000	<110	2100	280
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	27000	<210	2200	240

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 31/1/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420.030	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**0.1**	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	**0.3**	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.1**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	**0.4**	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	**0.3**	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	**0.4**	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	**0.3**	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**1.8**	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**1.8**	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 31/1/2023

PARAMETER	UOM	LOR	CR104 SOIL - 25/1/23 10:30 SE242420.004	CR108 SOIL - 25/1/23 10:30 SE242420.008	CR112 SOIL - 25/1/23 10:30 SE242420.012	CR116 SOIL - 25/1/23 10:30 SE242420.016	CR120 SOIL - 25/1/23 10:30 SE242420.020
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 31/1/2023 (continued)

PARAMETER	UOM	LOR	SL1 SOIL - 25/1/23 10:30 SE242420.035	SL1 SOIL - 25/1/23 10:30 SE242420.036
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1

OP Pesticides in Soil [AN420] Tested: 31/1/2023

PARAMETER	UOM	LOR	SL1 SOIL - 25/1/23 10:30 SE242420.035	SL1 SOIL - 25/1/23 10:30 SE242420.036
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7

pH in soil (1:5) [AN101] Tested: 6/2/2023

PARAMETER	UOM	LOR	CR109 SOIL - 25/1/23 10:30 SE242420.009
pH	pH Units	0.1	**5.5**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 6/2/2023

PARAMETER	UOM	LOR	CR109 SOIL - 25/1/23 10:30 SE242420.009
Exchangeable Calcium, Ca	mg/kg	2	**520**
Exchangeable Calcium, Ca	meq/100g	0.01	**2.6**
Exchangeable Calcium Percentage*	%	0.1	**66.6**
Exchangeable Potassium, K	mg/kg	2	**120**
Exchangeable Potassium, K	meq/100g	0.01	**0.30**
Exchangeable Potassium Percentage*	%	0.1	**7.6**
Exchangeable Magnesium, Mg	mg/kg	2	**110**
Exchangeable Magnesium, Mg	meq/100g	0.02	**0.88**
Exchangeable Magnesium Percentage*	%	0.1	**22.5**
Exchangeable Sodium, Na	mg/kg	2	**29**
Exchangeable Sodium, Na	meq/100g	0.01	**0.13**
Exchangeable Sodium Percentage*	%	0.1	**3.2**
Cation Exchange Capacity	meq/100g	0.02	**3.9**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/2/2023

PARAMETER	UOM	LOR	CR101 SOIL - 25/1/23 10:30 SE242420.001	CR102 SOIL - 25/1/23 10:30 SE242420.002	CR103 SOIL - 25/1/23 10:30 SE242420.003	CR104 SOIL - 25/1/23 10:30 SE242420.004	CR105 SOIL - 25/1/23 10:30 SE242420.005
Arsenic, As	mg/kg	1	1	1	1	<1	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.2	7.4	8.5	7.6	10
Copper, Cu	mg/kg	0.5	4.1	3.8	6.8	5.7	15
Lead, Pb	mg/kg	1	6	6	8	7	12
Nickel, Ni	mg/kg	0.5	1.1	1.4	2.9	1.8	2.2
Zinc, Zn	mg/kg	2	16	11	11	8.4	13

PARAMETER	UOM	LOR	CR106 SOIL - 25/1/23 10:30 SE242420.006	CR107 SOIL - 25/1/23 10:30 SE242420.007	CR108 SOIL - 25/1/23 10:30 SE242420.008	CR109 SOIL - 25/1/23 10:30 SE242420.009	CR110 SOIL - 25/1/23 10:30 SE242420.010
Arsenic, As	mg/kg	1	2	62	1	1	7
Cadmium, Cd	mg/kg	0.3	<0.3	0.4	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	9.5	18	5.9	13	15
Copper, Cu	mg/kg	0.5	12	120	15	45	60
Lead, Pb	mg/kg	1	17	220	9	8	30
Nickel, Ni	mg/kg	0.5	2.9	3.3	1.7	3.0	4.3
Zinc, Zn	mg/kg	2	60	41	22	14	13

PARAMETER	UOM	LOR	CR111 SOIL - 25/1/23 10:30 SE242420.011	CR112 SOIL - 25/1/23 10:30 SE242420.012	CR113 SOIL - 25/1/23 10:30 SE242420.013	CR114 SOIL - 25/1/23 10:30 SE242420.014	CR115 SOIL - 25/1/23 10:30 SE242420.015
Arsenic, As	mg/kg	1	<1	<1	2	4	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	0.8	<0.3
Chromium, Cr	mg/kg	0.5	5.4	6.2	9.6	10	20
Copper, Cu	mg/kg	0.5	2.7	4.3	17	50	69
Lead, Pb	mg/kg	1	7	6	61	37	15
Nickel, Ni	mg/kg	0.5	1.2	1.3	8.7	3.7	5.1
Zinc, Zn	mg/kg	2	11	12	97	510	97

PARAMETER	UOM	LOR	CR116 SOIL - 25/1/23 10:30 SE242420.016	CR117 SOIL - 25/1/23 10:30 SE242420.017	CR118 SOIL - 25/1/23 10:30 SE242420.018	CR119 SOIL - 25/1/23 10:30 SE242420.019	CR120 SOIL - 25/1/23 10:30 SE242420.020
Arsenic, As	mg/kg	1	3	<1	1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	6.3	6.5	5.5	5.5
Copper, Cu	mg/kg	0.5	20	16	3.3	2.9	3.2
Lead, Pb	mg/kg	1	51	19	8	8	10
Nickel, Ni	mg/kg	0.5	3.4	2.4	1.3	1.1	1.3
Zinc, Zn	mg/kg	2	480	250	13	11	6.9

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/2/2023

(continued)

PARAMETER	UOM	LOR	CR121 SOIL - 25/1/23 10:30 SE242420.021	CR122 SOIL - 25/1/23 10:30 SE242420.022	DA1 SOIL - 25/1/23 10:30 SE242420.023	DA2 SOIL - 25/1/23 10:30 SE242420.024	DA3 SOIL - 25/1/23 10:30 SE242420.025
Arsenic, As	mg/kg	1	<1	<1	2	1	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.0	5.5	11	9.9	7.6
Copper, Cu	mg/kg	0.5	5.0	5.8	8.7	6.1	6.2
Lead, Pb	mg/kg	1	9	8	8	11	8
Nickel, Ni	mg/kg	0.5	1.9	2.0	2.6	2.1	2.2
Zinc, Zn	mg/kg	2	12	10	17	28	15

PARAMETER	UOM	LOR	DA4 SOIL - 25/1/23 10:30 SE242420.026	DA5 SOIL - 25/1/23 10:30 SE242420.027	DA6 SOIL - 25/1/23 10:30 SE242420.028	DA7 SOIL - 25/1/23 10:30 SE242420.029	HS1 SOIL - 25/1/23 10:30 SE242420.030
Arsenic, As	mg/kg	1	<1	<1	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.2	5.2	8.0	8.8	8.1
Copper, Cu	mg/kg	0.5	9.4	3.5	3.9	4.5	3.3
Lead, Pb	mg/kg	1	10	15	13	11	9
Nickel, Ni	mg/kg	0.5	1.6	1.6	1.5	1.6	1.3
Zinc, Zn	mg/kg	2	11	7.5	11	8.0	8.2

PARAMETER	UOM	LOR	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
Arsenic, As	mg/kg	1	<1	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.5	6.9	6.9	5.5
Copper, Cu	mg/kg	0.5	4.2	4.0	3.0	3.0
Lead, Pb	mg/kg	1	8	7	7	7
Nickel, Ni	mg/kg	0.5	1.4	1.3	1.1	1.1
Zinc, Zn	mg/kg	2	13	10	7.4	10

Mercury in Soil [AN312] Tested: 2/2/2023

PARAMETER	UOM	LOR	CR101 SOIL - 25/1/23 10:30 SE242420.001	CR102 SOIL - 25/1/23 10:30 SE242420.002	CR103 SOIL - 25/1/23 10:30 SE242420.003	CR104 SOIL - 25/1/23 10:30 SE242420.004	CR105 SOIL - 25/1/23 10:30 SE242420.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	0.05	<0.05

PARAMETER	UOM	LOR	CR106 SOIL - 25/1/23 10:30 SE242420.006	CR107 SOIL - 25/1/23 10:30 SE242420.007	CR108 SOIL - 25/1/23 10:30 SE242420.008	CR109 SOIL - 25/1/23 10:30 SE242420.009	CR110 SOIL - 25/1/23 10:30 SE242420.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR111 SOIL - 25/1/23 10:30 SE242420.011	CR112 SOIL - 25/1/23 10:30 SE242420.012	CR113 SOIL - 25/1/23 10:30 SE242420.013	CR114 SOIL - 25/1/23 10:30 SE242420.014	CR115 SOIL - 25/1/23 10:30 SE242420.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR116 SOIL - 25/1/23 10:30 SE242420.016	CR117 SOIL - 25/1/23 10:30 SE242420.017	CR118 SOIL - 25/1/23 10:30 SE242420.018	CR119 SOIL - 25/1/23 10:30 SE242420.019	CR120 SOIL - 25/1/23 10:30 SE242420.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	CR121 SOIL - 25/1/23 10:30 SE242420.021	CR122 SOIL - 25/1/23 10:30 SE242420.022	DA1 SOIL - 25/1/23 10:30 SE242420.023	DA2 SOIL - 25/1/23 10:30 SE242420.024	DA3 SOIL - 25/1/23 10:30 SE242420.025
Mercury	mg/kg	0.05	<0.05	<0.05	0.05	0.09	<0.05

PARAMETER	UOM	LOR	DA4 SOIL - 25/1/23 10:30 SE242420.026	DA5 SOIL - 25/1/23 10:30 SE242420.027	DA6 SOIL - 25/1/23 10:30 SE242420.028	DA7 SOIL - 25/1/23 10:30 SE242420.029	HS1 SOIL - 25/1/23 10:30 SE242420.030
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 2/2/2023

PARAMETER	UOM	LOR	CR101 SOIL - 25/1/23 10:30 SE242420.001	CR102 SOIL - 25/1/23 10:30 SE242420.002	CR103 SOIL - 25/1/23 10:30 SE242420.003	CR104 SOIL - 25/1/23 10:30 SE242420.004	CR105 SOIL - 25/1/23 10:30 SE242420.005
% Moisture	%w/w	1	16.0	10.5	9.8	20.9	25.2

PARAMETER	UOM	LOR	CR106 SOIL - 25/1/23 10:30 SE242420.006	CR107 SOIL - 25/1/23 10:30 SE242420.007	CR108 SOIL - 25/1/23 10:30 SE242420.008	CR109 SOIL - 25/1/23 10:30 SE242420.009	CR110 SOIL - 25/1/23 10:30 SE242420.010
% Moisture	%w/w	1	15.3	12.9	15.7	16.0	12.2

PARAMETER	UOM	LOR	CR111 SOIL - 25/1/23 10:30 SE242420.011	CR112 SOIL - 25/1/23 10:30 SE242420.012	CR113 SOIL - 25/1/23 10:30 SE242420.013	CR114 SOIL - 25/1/23 10:30 SE242420.014	CR115 SOIL - 25/1/23 10:30 SE242420.015
% Moisture	%w/w	1	11.1	14.1	14.4	9.4	14.6

PARAMETER	UOM	LOR	CR116 SOIL - 25/1/23 10:30 SE242420.016	CR117 SOIL - 25/1/23 10:30 SE242420.017	CR118 SOIL - 25/1/23 10:30 SE242420.018	CR119 SOIL - 25/1/23 10:30 SE242420.019	CR120 SOIL - 25/1/23 10:30 SE242420.020
% Moisture	%w/w	1	11.2	11.9	26.2	15.5	12.1

PARAMETER	UOM	LOR	CR121 SOIL - 25/1/23 10:30 SE242420.021	CR122 SOIL - 25/1/23 10:30 SE242420.022	DA1 SOIL - 25/1/23 10:30 SE242420.023	DA2 SOIL - 25/1/23 10:30 SE242420.024	DA3 SOIL - 25/1/23 10:30 SE242420.025
% Moisture	%w/w	1	9.8	7.2	22.8	11.6	18.8

PARAMETER	UOM	LOR	DA4 SOIL - 25/1/23 10:30 SE242420.026	DA5 SOIL - 25/1/23 10:30 SE242420.027	DA6 SOIL - 25/1/23 10:30 SE242420.028	DA7 SOIL - 25/1/23 10:30 SE242420.029	HS1 SOIL - 25/1/23 10:30 SE242420.030
% Moisture	%w/w	1	6.9	9.1	16.7	23.3	23.2

PARAMETER	UOM	LOR	HS2 SOIL - 25/1/23 10:30 SE242420.031	HS3 SOIL - 25/1/23 10:30 SE242420.032	HS4 SOIL - 25/1/23 10:30 SE242420.033	HS5 SOIL - 25/1/23 10:30 SE242420.034	SL1 SOIL - 25/1/23 10:30 SE242420.035
% Moisture	%w/w	1	21.8	16.8	12.0	18.6	30.9

Moisture Content [AN002] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	SL1 SOIL - 25/1/23 10:30 SE242420.036
% Moisture	%w/w	1	22.6

Particle sizing of soils by sieving [AN005] Tested: 7/2/2023

PARAMETER	UOM	LOR	CR109 SOIL - 25/1/23 10:30 SE242420.009
Passing 75µm*	%w/w	1	95
Retained 75µm*	%w/w	1	5

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 7/2/2023

PARAMETER	UOM	LOR	CR109 SOIL - 25/1/23 10:30 SE242420.009
Clay (<0.002mm)*	%w/w	0.1	4.0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242420 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420 R0**
Date Received	31 Jan 2023
Date Reported	07 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in soil (1:5)	1 item

SAMPLE SUMMARY

Sample counts by matrix	36 Soil	Type of documentation received	COC
Date documentation received	31/1/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242420 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR109	SE242420.009	LB270623	25 Jan 2023	31 Jan 2023	22 Feb 2023	06 Feb 2023	22 Feb 2023	06 Feb 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR101	SE242420.001	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR102	SE242420.002	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR103	SE242420.003	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR104	SE242420.004	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR105	SE242420.005	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR106	SE242420.006	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR107	SE242420.007	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR108	SE242420.008	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR109	SE242420.009	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR110	SE242420.010	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR111	SE242420.011	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR112	SE242420.012	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR113	SE242420.013	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR114	SE242420.014	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR115	SE242420.015	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR116	SE242420.016	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR117	SE242420.017	LB270377	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR118	SE242420.018	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR119	SE242420.019	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR120	SE242420.020	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR121	SE242420.021	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
CR122	SE242420.022	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA1	SE242420.023	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA2	SE242420.024	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA3	SE242420.025	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA4	SE242420.026	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA5	SE242420.027	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA6	SE242420.028	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
DA7	SE242420.029	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
HS1	SE242420.030	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
HS2	SE242420.031	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
HS3	SE242420.032	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
HS4	SE242420.033	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023
HS5	SE242420.034	LB270378	25 Jan 2023	31 Jan 2023	22 Feb 2023	02 Feb 2023	22 Feb 2023	06 Feb 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR101	SE242420.001	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR102	SE242420.002	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR103	SE242420.003	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR104	SE242420.004	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR105	SE242420.005	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR106	SE242420.006	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR107	SE242420.007	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR108	SE242420.008	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR109	SE242420.009	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR110	SE242420.010	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR111	SE242420.011	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR112	SE242420.012	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR113	SE242420.013	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR114	SE242420.014	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR115	SE242420.015	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR116	SE242420.016	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR117	SE242420.017	LB270384	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR118	SE242420.018	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR119	SE242420.019	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023

HOLDING TIME SUMMARY

SE242420 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR120	SE242420.020	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR121	SE242420.021	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
CR122	SE242420.022	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA1	SE242420.023	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA2	SE242420.024	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA3	SE242420.025	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA4	SE242420.026	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA5	SE242420.027	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA6	SE242420.028	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA7	SE242420.029	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS1	SE242420.030	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS2	SE242420.031	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS3	SE242420.032	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS4	SE242420.033	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS5	SE242420.034	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
SL1	SE242420.035	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
SL1	SE242420.036	LB270385	25 Jan 2023	31 Jan 2023	08 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR104	SE242420.004	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR108	SE242420.008	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR112	SE242420.012	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR116	SE242420.016	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
CR120	SE242420.020	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
SL1	SE242420.035	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
SL1	SE242420.036	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR104	SE242420.004	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	07 Feb 2023
CR108	SE242420.008	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	07 Feb 2023
CR112	SE242420.012	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	07 Feb 2023
CR116	SE242420.016	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	07 Feb 2023
CR120	SE242420.020	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	07 Feb 2023
SL1	SE242420.035	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
SL1	SE242420.036	LB270142	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420.030	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS2	SE242420.031	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS3	SE242420.032	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS4	SE242420.033	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS5	SE242420.034	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR109	SE242420.009	LB270622	25 Jan 2023	31 Jan 2023	01 Feb 2023	06 Feb 2023†	07 Feb 2023	06 Feb 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR101	SE242420.001	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR102	SE242420.002	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR103	SE242420.003	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR104	SE242420.004	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR105	SE242420.005	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR106	SE242420.006	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR107	SE242420.007	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR108	SE242420.008	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR109	SE242420.009	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023

HOLDING TIME SUMMARY

SE242420 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR110	SE242420.010	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR111	SE242420.011	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR112	SE242420.012	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR113	SE242420.013	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR114	SE242420.014	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR115	SE242420.015	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR116	SE242420.016	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR117	SE242420.017	LB270373	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR118	SE242420.018	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR119	SE242420.019	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR120	SE242420.020	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR121	SE242420.021	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
CR122	SE242420.022	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA1	SE242420.023	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA2	SE242420.024	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA3	SE242420.025	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA4	SE242420.026	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA5	SE242420.027	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA6	SE242420.028	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
DA7	SE242420.029	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
HS1	SE242420.030	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
HS2	SE242420.031	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
HS3	SE242420.032	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
HS4	SE242420.033	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023
HS5	SE242420.034	LB270374	25 Jan 2023	31 Jan 2023	24 Jul 2023	02 Feb 2023	24 Jul 2023	07 Feb 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420.030	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS2	SE242420.031	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS3	SE242420.032	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS4	SE242420.033	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023
HS5	SE242420.034	LB270143	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	12 Mar 2023	06 Feb 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420.030	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS2	SE242420.031	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS3	SE242420.032	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS4	SE242420.033	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS5	SE242420.034	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420.030	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS2	SE242420.031	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS3	SE242420.032	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS4	SE242420.033	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023
HS5	SE242420.034	LB270141	25 Jan 2023	31 Jan 2023	08 Feb 2023	31 Jan 2023	08 Feb 2023	06 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	CR104	SE242420.004	%	60 - 130%	94
	CR108	SE242420.008	%	60 - 130%	99
	CR112	SE242420.012	%	60 - 130%	97
	CR116	SE242420.016	%	60 - 130%	93
	CR120	SE242420.020	%	60 - 130%	95
	SL1	SE242420.035	%	60 - 130%	100
	SL1	SE242420.036	%	60 - 130%	98

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	SL1	SE242420.035	%	60 - 130%	102
	SL1	SE242420.036	%	60 - 130%	96
d14-p-terphenyl (Surrogate)	SL1	SE242420.035	%	60 - 130%	106
	SL1	SE242420.036	%	60 - 130%	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS1	SE242420.030	%	70 - 130%	103
	HS2	SE242420.031	%	70 - 130%	92
	HS3	SE242420.032	%	70 - 130%	85
	HS4	SE242420.033	%	70 - 130%	94
	HS5	SE242420.034	%	70 - 130%	92
d14-p-terphenyl (Surrogate)	HS1	SE242420.030	%	70 - 130%	107
	HS2	SE242420.031	%	70 - 130%	89
	HS3	SE242420.032	%	70 - 130%	72
	HS4	SE242420.033	%	70 - 130%	99
	HS5	SE242420.034	%	70 - 130%	98
d5-nitrobenzene (Surrogate)	HS1	SE242420.030	%	70 - 130%	115
	HS2	SE242420.031	%	70 - 130%	104
	HS3	SE242420.032	%	70 - 130%	88
	HS4	SE242420.033	%	70 - 130%	103
	HS5	SE242420.034	%	70 - 130%	100

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS1	SE242420.030	%	60 - 130%	87
	HS2	SE242420.031	%	60 - 130%	77
	HS3	SE242420.032	%	60 - 130%	96
	HS4	SE242420.033	%	60 - 130%	95
	HS5	SE242420.034	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	HS1	SE242420.030	%	60 - 130%	76
	HS2	SE242420.031	%	60 - 130%	71
	HS3	SE242420.032	%	60 - 130%	87
	HS4	SE242420.033	%	60 - 130%	76
	HS5	SE242420.034	%	60 - 130%	75
d8-toluene (Surrogate)	HS1	SE242420.030	%	60 - 130%	78
	HS2	SE242420.031	%	60 - 130%	71
	HS3	SE242420.032	%	60 - 130%	87
	HS4	SE242420.033	%	60 - 130%	84
	HS5	SE242420.034	%	60 - 130%	79

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS1	SE242420.030	%	60 - 130%	87
	HS2	SE242420.031	%	60 - 130%	77
	HS3	SE242420.032	%	60 - 130%	96
	HS4	SE242420.033	%	60 - 130%	95
	HS5	SE242420.034	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	HS1	SE242420.030	%	60 - 130%	76
	HS2	SE242420.031	%	60 - 130%	71
	HS3	SE242420.032	%	60 - 130%	87
	HS4	SE242420.033	%	60 - 130%	76
	HS5	SE242420.034	%	60 - 130%	75

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	HS1	SE242420.030	%	60 - 130%	78
	HS2	SE242420.031	%	60 - 130%	71
	HS3	SE242420.032	%	60 - 130%	87
	HS4	SE242420.033	%	60 - 130%	84
	HS5	SE242420.034	%	60 - 130%	79

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB270623.001	Exchangeable Sodium, Na	mg/kg	2	-0.8896
	Exchangeable Potassium, K	mg/kg	2	0.4268
	Exchangeable Calcium, Ca	mg/kg	2	-0.1492
	Exchangeable Magnesium, Mg	mg/kg	2	0.0061

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270377.001	Mercury	mg/kg	0.05	<0.05
LB270378.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270142.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	96

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270142.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	100
		d14-p-terphenyl (Surrogate)	%	-	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB270143.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270143.001		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	85
		d14-p-terphenyl (Surrogate)	%	-	94

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB270373.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0
LB270374.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB270143.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270141.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	78
		d8-toluene (Surrogate)	%	-	80
		Bromofluorobenzene (Surrogate)	%	-	86
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270141.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	78

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.010	LB270377.014	Mercury	mg/kg	0.05	<0.05	<0.05	153	0
SE242420.017	LB270377.022	Mercury	mg/kg	0.05	<0.05	<0.05	191	0
SE242420.027	LB270378.014	Mercury	mg/kg	0.05	<0.05	<0.05	199	0
SE242420.034	LB270378.022	Mercury	mg/kg	0.05	<0.05	<0.05	162	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.010	LB270384.011	% Moisture	%w/w	1	12.2	15.5	37	24
SE242420.017	LB270384.019	% Moisture	%w/w	1	11.9	10.6	39	12
SE242420.027	LB270385.011	% Moisture	%w/w	1	9.1	8.7	41	5
SE242420.036	LB270385.021	% Moisture	%w/w	1	22.6	21.3	35	6

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242418.007	LB270142.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	0
SE242420.036	LB270142.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.036	LB270142.024		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	30	5

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.036	LB270142.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242418.003	LB270143.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE242420.034	LB270143.022		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.034	LB270143.022		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

pH in soil (1:5) — Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE240879B.024	LB270622.014	pH	pH Units	0.1	5.4	5.3	32	2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420.010	LB270373.014	Arsenic, As	mg/kg	1	7	7	44	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	15	14	33	3
		Copper, Cu	mg/kg	0.5	60	58	31	3
		Nickel, Ni	mg/kg	0.5	4.3	4.2	42	2
		Lead, Pb	mg/kg	1	30	29	33	3
		Zinc, Zn	mg/kg	2	13	13	46	2
SE242420.017	LB270373.022	Arsenic, As	mg/kg	1	<1	1	125	33
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.3	7.1	37	13
		Copper, Cu	mg/kg	0.5	16	20	33	24
		Nickel, Ni	mg/kg	0.5	2.4	3.4	47	34
		Lead, Pb	mg/kg	1	19	20	35	8
		Zinc, Zn	mg/kg	2	250	280	31	10
SE242420.027	LB270374.014	Arsenic, As	mg/kg	1	<1	<1	153	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	5.2	5.5	39	6
		Copper, Cu	mg/kg	0.5	3.5	3.8	44	8
		Nickel, Ni	mg/kg	0.5	1.6	1.7	61	10
		Lead, Pb	mg/kg	1	15	18	36	15
		Zinc, Zn	mg/kg	2	7.5	7.9	56	5
SE242420.034	LB270374.022	Arsenic, As	mg/kg	1	<1	<1	200	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	5.5	6.0	39	9
		Copper, Cu	mg/kg	0.5	3.0	3.2	46	7
		Nickel, Ni	mg/kg	0.5	1.1	1.1	75	5
		Lead, Pb	mg/kg	1	7	7	45	4
		Zinc, Zn	mg/kg	2	10	9.3	51	7

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242418.003	LB270143.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	48	130	5
			TRH C29-C36	mg/kg	45	<45	<45	138	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	147	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE242420.034	LB270143.022		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	120	96	71	24
			TRH C29-C36	mg/kg	45	150	120	63	25
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	280	220	75	24
			TRH >C10-C40 Total (F bands)	mg/kg	210	240	<210	129	12
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	240	190	73	24
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242418.003	LB270141.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.1	7.9	50	10
			d8-toluene (Surrogate)	mg/kg	-	7.2	8.0	50	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.8	50	10
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE242420.034	LB270141.022	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	50	2
			d8-toluene (Surrogate)	mg/kg	-	7.9	8.0	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	8.9	50	0
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242418.003	LB270141.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.1	7.9	30	10
			d8-toluene (Surrogate)	mg/kg	-	7.2	8.0	30	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.8	30	10
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE242420.034	LB270141.022		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	30	2
			d8-toluene (Surrogate)	mg/kg	-	7.9	8.0	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	8.9	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270623.002	Exchangeable Sodium, Na	meq/100g	0.01	0.19	0.194	80 - 120	96
	Exchangeable Potassium, K	meq/100g	0.01	0.60	0.63	80 - 120	96
	Exchangeable Calcium, Ca	meq/100g	0.01	5.9	6.3	80 - 120	94
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	93

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270377.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	110
LB270378.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	112

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270142.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	86
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	89
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	87
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	87
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	93
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	79
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	84

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270142.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	92
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
		Ethion	mg/kg	0.2	2.1	2	60 - 140	107
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	87
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270143.002		Naphthalene	mg/kg	0.1	4.1	4	60 - 140	102
		Acenaphthylene	mg/kg	0.1	4.1	4	60 - 140	102
		Acenaphthene	mg/kg	0.1	4.0	4	60 - 140	99
		Phenanthrene	mg/kg	0.1	3.9	4	60 - 140	98
		Anthracene	mg/kg	0.1	4.0	4	60 - 140	100
		Fluoranthene	mg/kg	0.1	4.2	4	60 - 140	105
		Pyrene	mg/kg	0.1	3.9	4	60 - 140	98
		Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	114
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	93
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270622.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270373.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	86
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	107
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	100
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100
LB270374.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.0	4.81	70 - 130	84
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	102
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	104
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270374.002		Lead, Pb	mg/kg	1	89	89.9	80 - 120	99
		Zinc, Zn	mg/kg	2	270	273	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270143.002		TRH C10-C14	mg/kg	20	47	40	60 - 140	118
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	112
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	92
	TRH F Bands	TRH >C10-C16	mg/kg	25	47	40	60 - 140	118
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	107
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	89

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270141.002	Monocyclic	Benzene	mg/kg	0.1	4.5	5	60 - 140	90
	Aromatic	Toluene	mg/kg	0.1	4.4	5	60 - 140	88
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.4	10	60 - 140	84
		o-xylene	mg/kg	0.1	4.6	5	60 - 140	91
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	10	70 - 130	75
		d8-toluene (Surrogate)	mg/kg	-	7.9	10	70 - 130	79
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270141.002		TRH C6-C10	mg/kg	25	83	92.5	60 - 140	90
		TRH C6-C9	mg/kg	20	72	80	60 - 140	90
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	10	70 - 130	75
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	57	62.5	60 - 140	91

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242420.001	LB270377.004	Mercury	mg/kg	0.05	0.24	<0.05	0.2	109
SE242420.018	LB270378.004	Mercury	mg/kg	0.05	0.25	<0.05	0.2	107

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242417.084	LB270142.004	Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	91
		Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	92
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	89
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	87
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	96
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	89
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
		Total OC VIC EPA	mg/kg	1	1	<1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	-	93

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242401.002	LB270143.004	Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.1	<0.1	4	101
		Acenaphthene	mg/kg	0.1	3.9	<0.1	4	99
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.0	<0.1	4	98
		Anthracene	mg/kg	0.1	4.0	<0.1	4	99
		Fluoranthene	mg/kg	0.1	4.3	0.2	4	103
		Pyrene	mg/kg	0.1	4.0	0.2	4	94
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.1	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.6	<0.1	4	112
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.6	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.6	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.7	<0.3	-	-
		Total PAH (18)	mg/kg	0.8	33	<0.8	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242401.002	LB270143.004	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.6	-	95
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.6	-	92
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	-	90

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242420.001	LB270373.004	Arsenic, As	mg/kg	1	47	1	50	92
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	89
		Chromium, Cr	mg/kg	0.5	53	5.2	50	96
		Copper, Cu	mg/kg	0.5	52	4.1	50	96
		Nickel, Ni	mg/kg	0.5	48	1.1	50	93
		Lead, Pb	mg/kg	1	51	6	50	91
		Zinc, Zn	mg/kg	2	61	16	50	91
SE242420.018	LB270374.004	Arsenic, As	mg/kg	1	44	1	50	86
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	54	6.5	50	94
		Copper, Cu	mg/kg	0.5	51	3.3	50	96
		Nickel, Ni	mg/kg	0.5	47	1.3	50	92
		Lead, Pb	mg/kg	1	52	8	50	87
		Zinc, Zn	mg/kg	2	57	13	50	88

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242401.002	LB270143.004		TRH C10-C14	mg/kg	20	48	<20	40	104
			TRH C15-C28	mg/kg	45	45	<45	40	93
			TRH C29-C36	mg/kg	45	<45	<45	40	89
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	47	<25	40	107
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	47	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	85
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242401.002	LB270141.004	Monocyclic	Benzene	mg/kg	0.1	4.8	<0.1	5	97
		Aromatic	Toluene	mg/kg	0.1	4.9	<0.1	5	99
			Ethylbenzene	mg/kg	0.1	5.0	<0.1	5	100
			m/p-xylene	mg/kg	0.2	9.8	<0.2	10	98
			o-xylene	mg/kg	0.1	5.3	<0.1	5	106
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.4	10	76
			d8-toluene (Surrogate)	mg/kg	-	7.0	7.4	10	70
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	8.3	10	85
		Totals	Total BTEX*	mg/kg	0.6	30	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242401.002	LB270141.004		TRH C6-C10	mg/kg	25	90	<25	92.5	96
			TRH C6-C9	mg/kg	20	78	<20	80	96
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.4	10	76
			d8-toluene (Surrogate)	mg/kg	-	7.0	7.4	10	70
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	8.3	-	85
		VPH F	Benzene (F0)	mg/kg	0.1	4.8	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	60	<25	62.5	95

MATRIX SPIKE DUPLICATES

SE242420 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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This test report shall not be reproduced, except in full.

source: Sydney.pdf page: 14 SGS Ref: SE242420_COC

Chain of Custody Form – Ref 15156-1

Ref:	**15156-1**
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Email:	[redacted]
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/HCl	Unpreserved	Analysis: CL2T	OPP	OCP	pH	CEC	Clay content	CL10
										SGS Method Code: CL2T (8 metals)		OCP	pH	Cation exchange capacity	Clay content	TRH, PAH, BTEX, 8 Metals
1	CR101	A	25/01/2023		X		X			X						
2	CR102	A	25/01/2023		X		X			X						
3	CR103	A	25/01/2023		X		X			X						
4	CR104	A	25/01/2023		X		X			X		X				
5	CR105	A	25/01/2023		X		X			X						
6	CR106	A	25/01/2023		X		X			X						
7	CR107	A	25/01/2023		X		X			X						
8	CR108	A	25/01/2023		X		X			X		X				
9	CR109	A	25/01/2023		X		X			X			X	X	X	
10	CR110	A	25/01/2023		X		X			X						
11	CR111	A	25/01/2023		X		X			X						
12	CR112	A	25/01/2023		X		X			X		X				
13	CR113	A	25/01/2023		X		X			X						
14	CR114	A	25/01/2023		X		X			X						
15	CR115	A	25/01/2023		X		X			X						
16	CR116	A	25/01/2023		X		X			X		X				
17	CR117	A	25/01/2023		X		X			X						
18	CR118	A	25/01/2023		X		X			X						
19	CR119	A	25/01/2023		X		X			X						
20	CR120	A	25/01/2023		X		X			X		X				

SGS EHS Sydney COC

SE242420

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 25/01/2023 Time: 10.30

Relinquished by: (print and signature)	Virginia Braga [redacted]	Date: 30/01/2023	Time 1500	Received by: (print and signature)	[redacted] Date 31/1/23 Time @ 10.50

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B = Plastic with green label, C = Amber with green label, D= Vial with white label, E= Plastic with red label

Chain of Custody Form – Ref 15156-1

Ref: 15156-1
Investigator: Envirowest Consulting
9 Cameron Place
PO Box 8158
ORANGE NSW 2800
Telephone: (02) 6361 4954
Email: [redacted]
Contact Person: Felipe Canavez
Invoice: accounts@envirowest.net.au

Laboratory: SGS SYDNEY
16/33 Maddox Street
ALEXANDRIA NSW 2015

Quotation #: Envir_70119_2019
Courier/CN: Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/HCl	Unpreserved	Analysis: CL2T	OPP	OCP	pH	CEC	Clay content	CL10
										SGS Method Code						
										CL2T (8 metals)	Organic phosphorus pesticide	OCP	pH	Cation exchange capacity	Clay content	TRH, PAH, BTEX, 8 Metals
21	CR121	A	25/01/2023		X		X			X						
22	CR122	A	25/01/2023		X		X			X						
23	DA1	A	25/01/2023		X		X			X						
24	DA2	A	25/01/2023		X		X			X						
25	DA3	A	25/01/2023		X		X			X						
26	DA4	A	25/01/2023		X		X			X						
27	DA5	A	25/01/2023		X		X			X						
28	DA6	A	25/01/2023		X		X			X						
29	DA7	A	25/01/2023		X		X			X						
30	HS1	A	25/01/2023		X		X									X
31	HS2	A	25/01/2023		X		X									X
32	HS3	A	25/01/2023		X		X									X
33	xHS4	A	25/01/2023		X		X									X
34	HS5	A	25/01/2023		X		X									X
35	SL1	A	25/01/2023		X		X				X	X				
36	SL2	A	25/01/2023		X		X				X	X				

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 25/01/2023 Time: 10.30

Relinquished by: Virginia Brada [redacted] (print and signature) Date: 30/01/2023 Time 1500

Received by: [redacted] (print and signature) Date 31/1/23 Time @ 10.50

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red labe

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	SGS I&E SYDNEY
Address	5058 201 I&E HSE SYDNEY (EX 5258) UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**SE242420**
Samples	1

LABORATORY DETAILS

Manager	Anthony Nilsson
Laboratory	SGS Cairns Environmental
Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**CE164440 R0**
Date Received	02 Feb 2023
Date Reported	07 Feb 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(3146/19038)

SIGNATORIES

[redacted]

Anthony NILSSON
Operations Manager

Parameter	Units	LOR	Sample Number CE164440.009 Sample Matrix Soil Sample Date 25/1/23 10:30 Sample Name SE242420.009
Moisture Content Method: AN002 Tested: 6/2/2023			
% Moisture	%w/w	1	**17**
Particle sizing of soils by sieving Method: AN005 Tested: 7/2/2023			
Passing 75µm	%w/w	1	**95**
Retained 75µm	%w/w	1	**5**
Particle sizing of soils <75µm by hydrometer Method: AN005 Tested: 7/2/2023			
Clay (<0.002mm)	%w/w	0.1	**4.0**

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

No QC samples were reported for this job.

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420A R0**
Date Received	1/2/2023
Date Reported	8/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]
Akheeqar BENIAMEEN
Chemist

[redacted]
Shane MCDERMOTT
Inorganic/Metals Chemist

[redacted]
Teresa NGUYEN
Organic Chemist

OC Pesticides in Soil [AN420] Tested: 3/2/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420A.030	HS2 SOIL - 25/1/23 10:30 SE242420A.031	HS3 SOIL - 25/1/23 10:30 SE242420A.032	HS4 SOIL - 25/1/23 10:30 SE242420A.033	HS5 SOIL - 25/1/23 10:30 SE242420A.034
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 3/2/2023

PARAMETER	UOM	LOR	HS1 SOIL - 25/1/23 10:30 SE242420A.030	HS2 SOIL - 25/1/23 10:30 SE242420A.031	HS3 SOIL - 25/1/23 10:30 SE242420A.032	HS4 SOIL - 25/1/23 10:30 SE242420A.033	HS5 SOIL - 25/1/23 10:30 SE242420A.034
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

METHOD	METHODOLOGY SUMMARY
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

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Solid samples expressed on a dry weight basis.

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a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

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STATEMENT OF QA/QC PERFORMANCE

SE242420A R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420A R0**
Date Received	01 Feb 2023
Date Reported	08 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	5 Soil	Type of documentation received	Email
Date documentation received	1/2/2023@8:45am	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242420A R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420A.030	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS2	SE242420A.031	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS3	SE242420A.032	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS4	SE242420A.033	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS5	SE242420A.034	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS1	SE242420A.030	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS2	SE242420A.031	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS3	SE242420A.032	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS4	SE242420A.033	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023
HS5	SE242420A.034	LB270494	25 Jan 2023	01 Feb 2023	08 Feb 2023	03 Feb 2023	15 Mar 2023	06 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HS1	SE242420A.030	%	60 - 130%	105
	HS2	SE242420A.031	%	60 - 130%	106
	HS3	SE242420A.032	%	60 - 130%	95
	HS4	SE242420A.033	%	60 - 130%	96
	HS5	SE242420A.034	%	60 - 130%	97

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS1	SE242420A.030	%	60 - 130%	110
	HS2	SE242420A.031	%	60 - 130%	110
	HS3	SE242420A.032	%	60 - 130%	97
	HS4	SE242420A.033	%	60 - 130%	108
	HS5	SE242420A.034	%	60 - 130%	106
d14-p-terphenyl (Surrogate)	HS1	SE242420A.030	%	60 - 130%	109
	HS2	SE242420A.031	%	60 - 130%	122
	HS3	SE242420A.032	%	60 - 130%	86
	HS4	SE242420A.033	%	60 - 130%	106
	HS5	SE242420A.034	%	60 - 130%	104

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270494.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.1
		Endrin	mg/kg	0.2	<0.1
		Beta Endosulfan	mg/kg	0.2	<0.1
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270494.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	97
		d14-p-terphenyl (Surrogate)	%	-	99

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242508.001	LB270494.026		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.1	200	0
			Endrin	mg/kg	0.2	<0.2	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	0
SE242588.001	LB270494.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.1	200	0
			Endrin	mg/kg	0.2	<0.2	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.16	30	7

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242509.001	LB270494.026		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
SE242588.001	LB270494.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270494.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	84
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	84
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	86
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	88
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	93
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	77
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	90

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270494.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	96
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
		Ethion	mg/kg	0.2	2.0	2	60 - 140	100
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	103

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242420A.030	LB270494.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	95
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	93
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	95
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.1	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	0.2	<0.2	0.2	97
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	102
			Beta Endosulfan	mg/kg	0.2	<0.1	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	64
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.16	-	101

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242420A.030	LB270494.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.2	<0.2	2	110
			Diazinon (Dimpylate)	mg/kg	0.5	2.3	<0.5	2	113
			Dichlorvos	mg/kg	0.5	1.6	<0.5	2	81
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	2.4	<0.2	2	119
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	8.5	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.6	0.5	-	114
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	-	114

MATRIX SPIKE DUPLICATES

SE242420A R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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This test report shall not be reproduced, except in full.

Hi GBS.

Please book this testing in as an A job.
Thanks.

Matthew Tyler
Environment, Health & Safety
Client Services

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015

From: Felipe Canavez [redacted]
Sent: Wednesday, 1 February 2023 8:45 AM
To: AU.SampleReceipt.Sydney, AU (Sydney) [redacted]
Cc: AU.Environmental.Sydney, AU (Sydney) <[redacted]
Subject: [EXTERNAL] RE: SGS Sample Receipt Advice (Ref: 15156-1, Lab Ref: SE242420)

[redacted]

Hi,

Good morning. Can I please have the samples HS1, HS2, HS3, HS4 and HS5 booked for the SVOC suite SV3 (OP and OC pesticides) please? Standard turnaround time.

Also, the sample HS4 has an x in front of it, can you please report it without the x? I could send an updated COC if necessary.

Thank you,

Felipe Canavez
Environmental Geologist

Envirowest Consulting Pty Ltd
9 Cameron Place
PO Box 8158
Orange NSW 2800
ph. 02 6361 4954
[redacted]
www.envirowest.net.au

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Please consider the environment before printing this email.

From [redacted]
Sent: Tuesday, 31 January 2023 9:33 PM
To: Felipe Canavez [redacted]; admin < [redacted]
Subject: SGS Sample Receipt Advice (Ref: 15156-1, Lab Ref: SE242420)

Dear Felipe Canavez,

Please be advised we have received samples for analysis as detailed in the attached documentation.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best regards,
SGS Alexandria Sample Administration Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420B R0**
Date Received	8/2/2023
Date Reported	13/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]

Dong LIANG
Metals/Inorganics Team Leader

[redacted]

Huong CRAWFORD
Production Manager

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 8/2/2023

PARAMETER	UOM	LOR	SL1 SOIL - 25/1/23 10:30 SE242420B.035	SL2 SOIL - 25/1/23 10:30 SE242420B.036
Arsenic, As	mg/kg	1	4	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	5.7
Copper, Cu	mg/kg	0.5	39	2.2
Lead, Pb	mg/kg	1	16	7
Nickel, Ni	mg/kg	0.5	4.6	0.8
Zinc, Zn	mg/kg	2	39	4

Mercury in Soil [AN312] Tested: 8/2/2023

PARAMETER	UOM	LOR	SL1 SOIL - 25/1/23 10:30 SE242420B.035	SL2 SOIL - 25/1/23 10:30 SE242420B.036
Mercury	mg/kg	0.05	<0.05	<0.05

METHOD	METHODOLOGY SUMMARY
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242420B R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420B R0**
Date Received	08 Feb 2023
Date Reported	13 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	2 Soil	Type of documentation received	Email
Date documentation received	8/2/2023@4:45pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242420B R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SL1	SE242420B.035	LB270947	25 Jan 2023	08 Feb 2023	22 Feb 2023	08 Feb 2023	22 Feb 2023	09 Feb 2023
SL2	SE242420B.036	LB270947	25 Jan 2023	08 Feb 2023	22 Feb 2023	08 Feb 2023	22 Feb 2023	09 Feb 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SL1	SE242420B.035	LB270946	25 Jan 2023	08 Feb 2023	24 Jul 2023	08 Feb 2023	24 Jul 2023	13 Feb 2023
SL2	SE242420B.036	LB270946	25 Jan 2023	08 Feb 2023	24 Jul 2023	08 Feb 2023	24 Jul 2023	13 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270947.001	Mercury	mg/kg	0.05	<0.05

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB270946.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242860.001	LB270947.012	Mercury	mg/kg	0.05	<0.05	<0.05	166	0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242860.001	LB270946.021	Arsenic, As	mg/kg	1	5	5	50	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	9.9	11	35	8
		Copper, Cu	mg/kg	0.5	14	14	34	5
		Nickel, Ni	mg/kg	0.5	6.2	6.1	38	0
		Lead, Pb	mg/kg	1	20	19	35	3
		Zinc, Zn	mg/kg	2	46	45	34	1

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270947.002	Mercury	mg/kg	0.05	0.21	0.2	70 - 130	107

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270946.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	107
	Cadmium, Cd	mg/kg	0.3	3.9	4.81	70 - 130	80
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	99
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	108
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE241784A.030	LB270947.004	Mercury	mg/kg	0.05	0.23	<0.05	0.2	114

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE241784A.030	LB270946.004	Arsenic, As	mg/kg	1	50	2	50	97
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	92
		Chromium, Cr	mg/kg	0.5	55	5.8	50	98
		Copper, Cu	mg/kg	0.5	110	100	50	7 ⓞ
		Nickel, Ni	mg/kg	0.5	64	15	50	98
		Lead, Pb	mg/kg	1	51	6	50	91
		Zinc, Zn	mg/kg	2	63	19	50	88

MATRIX SPIKE DUPLICATES

SE242420B R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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Hi GBS team,

Please book this in, thanks.

Kind Regards,

Huong Crawford
Industries & Environment
Production Manager

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Phone:
Fax:
E-mail:
Web:

View Your Results Online: engage.sgs.com

From: Felipe Canavez
Sent: Wednesday, 8 February 2023 4:45 PM
To: AU.Environmental.Sydney, AU (Sydney)
Subject: [EXTERNAL] RE: Report Job SE242420, your reference 15156-1, order number 15156-1

Hi,

Can I have the samples SL1 and SL2 analysed for the suite CL2T (8 metals) please? Standard turnaround time.

Thank you,

Felipe Canavez
Environmental Geologist

Envirowest Consulting Pty Ltd
9 Cameron Place
PO Box 8158
Orange NSW 2800
ph 02 6361 4954
www.envirowest.net.au

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Please consider the environment before printing this email.

From: [redacted]
Sent: Tuesday, 7 February 2023 6:00 PM
To: admin [redacted]
Subject: Report Job SE242420, your reference 15156-1, order number 15156-1

Dear Valued Customer,

Please find attached the report for SGS job SE242420, your reference 15156-1, order number 15156-1.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420RE R0**
Date Received	16/3/2023
Date Reported	22/3/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]

Dong LIANG

Metals/Inorganics Team Leader

[redacted]

Shane MCDERMOTT

Inorganic/Metals Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 16/3/2023

PARAMETER	UOM	LOR	CR101 SOIL - 25/1/23 10:30 SE242420RE.001	DA1 SOIL - 25/1/23 10:30 SE242420RE.023	DA2 SOIL - 25/1/23 10:30 SE242420RE.024	DA3 SOIL - 25/1/23 10:30 SE242420RE.025	DA4 SOIL - 25/1/23 10:30 SE242420RE.026
Arsenic, As	mg/kg	1	1	3	67	2	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.7	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.3	12	13	6.9	13
Copper, Cu	mg/kg	0.5	3.1	15	130	19	40
Lead, Pb	mg/kg	1	7	19	250	10	8
Nickel, Ni	mg/kg	0.5	1.3	3.7	4.3	2.1	3.0
Zinc, Zn	mg/kg	2	11	74	41	26	13

PARAMETER	UOM	LOR	DA5 SOIL - 25/1/23 10:30 SE242420RE.027	DA6 SOIL - 25/1/23 10:30 SE242420RE.028
Arsenic, As	mg/kg	1	7	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	6.3
Copper, Cu	mg/kg	0.5	54	2.9
Lead, Pb	mg/kg	1	29	7
Nickel, Ni	mg/kg	0.5	4.6	1.2
Zinc, Zn	mg/kg	2	15	11

METHOD	METHODOLOGY SUMMARY
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242420RE R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-1**
Order Number	**15156-1**
Samples	36

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242420RE R0**
Date Received	16 Mar 2023
Date Reported	22 Mar 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	7 Soil	Type of documentation received	Email
Date documentation received	16/3/2023@11:50an	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	21.7C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242420RE R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
CR101	SE242420RE.001	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA1	SE242420RE.023	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA2	SE242420RE.024	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA3	SE242420RE.025	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA4	SE242420RE.026	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA5	SE242420RE.027	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023
DA6	SE242420RE.028	LB274159	25 Jan 2023	16 Mar 2023	24 Jul 2023	16 Mar 2023	24 Jul 2023	22 Mar 2023

SURROGATES

SE242420RE R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB274159.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242420RE.02	LB274159.014	Arsenic, As	mg/kg	1	1	1	98	0
6		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	13	15	34	13
		Copper, Cu	mg/kg	0.5	40	38	31	4
		Nickel, Ni	mg/kg	0.5	3.0	2.8	48	7
		Lead, Pb	mg/kg	1	8	7	43	1
		Zinc, Zn	mg/kg	2	13	13	45	2
SE242420RE.02	LB274159.017	Arsenic, As	mg/kg	1	<1	<1	144	0
8		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.3	6.4	38	1
		Copper, Cu	mg/kg	0.5	2.9	3.0	47	2
		Nickel, Ni	mg/kg	0.5	1.2	1.3	69	4
		Lead, Pb	mg/kg	1	7	7	44	2
		Zinc, Zn	mg/kg	2	11	12	48	4

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB274159.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	5.2	4.81	70 - 130	109
	Chromium, Cr	mg/kg	0.5	44	38.31	80 - 120	116
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	100
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242417RE.0	LB274159.004	Arsenic, As	mg/kg	1	49	3	50	93
01		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	56	8.3	50	95
		Copper, Cu	mg/kg	0.5	59	13	50	93
		Nickel, Ni	mg/kg	0.5	50	3.0	50	95
		Lead, Pb	mg/kg	1	58	14	50	87
		Zinc, Zn	mg/kg	2	110	84	50	43 ⓑ

MATRIX SPIKE DUPLICATES

SE242420RE R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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Hi GBS team.

Another RE job for Envirowest.
Thanks.

Matthew Tyler
Environment, Health & Safety
Client Services

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015

From: Felipe Canavez [redacted]
Sent: Thursday, 16 March 2023 11:50 AM
To: AU.Environmental.Sydney, AU (Sydney) [redacted] admin [redacted]
Cc: AU.SampleReceipt.Sydney, AU (Sydney) [redacted]
Subject: [EXTERNAL] RE: Report Job SE242420B, your reference 15156-1, order number 15156-1
[redacted]

Hi,

Can I have the samples CR101, DA1, DA2, DA3, DA4, DA5 and DA6 reanalysed for the suite CL1T please?

Standard turnaround time.

Thank you,

Felipe Canavez
Environmental Geologist

Envirowest Consulting Pty Ltd
9 Cameron Place
PO Box 8158
Orange NSW 2800
ph. 02 6361 4954
[redacted]
www.envirowest.net.au

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From: [redacted]
Sent: Monday, February 13, 2023 5:25 PM
To: admin [redacted]; Felipe Canavez [redacted]
Subject: Report Job SE242420B, your reference 15156-1, order number 15156-1

Dear Felipe,

Please find attached the report for SGS job SE242420B, your reference 15156-1, order number 15156-1.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-2**
Order Number	**15156-2**
Samples	16

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242441 R0**
Date Received	1/2/2023
Date Reported	8/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

[redacted]

Dong LIANG
Metals/Inorganics Team Leader

[redacted]

Shane MCDERMOTT
Inorganic/Metals Chemist

[redacted]

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	94	<45	<45	<45	93
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	120	<90	<90	<90	120
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	2500	<45	220	220
TRH C29-C36	mg/kg	45	<45	2600	<45	82	<45
TRH C37-C40	mg/kg	100	<100	490	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	31
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	31
TRH >C16-C34 (F3)	mg/kg	90	<90	4500	<90	290	230
TRH >C34-C40 (F4)	mg/kg	120	<120	1100	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	5100	<110	310	220
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	5600	<210	290	260

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
TRH C10-C14	mg/kg	20	<20	<20	280	<20	<20
TRH C15-C28	mg/kg	45	<45	95	12000	230	270
TRH C29-C36	mg/kg	45	<45	95	15000	210	420
TRH C37-C40	mg/kg	100	<100	<100	3500	<100	280
TRH >C10-C16	mg/kg	25	<25	<25	400	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	400	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	170	23000	380	520
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	7300	<120	450
TRH C10-C36 Total	mg/kg	110	<110	190	27000	440	690
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	31000	380	970

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	0.6	0.3	0.7	0.2	0.2
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	0.8	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	0.4	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	4.0	0.8	0.7	<0.1	0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	6	1	1	<1	<1
Total OC VIC EPA	mg/kg	1	5	1	1	<1	<1

OC Pesticides in Soil [AN420] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	0.3	0.1	0.5	0.3
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	0.5	0.3	0.9	0.2
Beta Endosulfan	mg/kg	0.2	<0.2	0.3	0.3	0.8	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	0.6	0.5	1.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	2.2	1.3	3.2	0.9
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	4	3	6	1
Total OC VIC EPA	mg/kg	1	<1	3	2	6	1

OC Pesticides in Soil [AN420] Tested: 2/2/2023 (continued)

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	0.2	0.2	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	0.4	1.5	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	1.4	7.7	<0.1	0.3	0.2
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	2	10	<1	<1	<1
Total OC VIC EPA	mg/kg	1	2	8	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Arsenic, As	mg/kg	1	4	4	4	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.8	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	34	29	29	19	33
Copper, Cu	mg/kg	0.5	98	40	240	78	52
Lead, Pb	mg/kg	1	51	25	29	20	16
Nickel, Ni	mg/kg	0.5	5.6	5.3	4.8	5.1	5.8
Zinc, Zn	mg/kg	2	170	68	610	63	120

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Arsenic, As	mg/kg	1	5	4	4	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	31	46	31	24	14
Copper, Cu	mg/kg	0.5	140	42	30	72	21
Lead, Pb	mg/kg	1	20	27	18	20	100
Nickel, Ni	mg/kg	0.5	4.5	7.3	19	4.5	3.6
Zinc, Zn	mg/kg	2	55	110	46	78	120

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Arsenic, As	mg/kg	1	3	2	2	3	2
Cadmium, Cd	mg/kg	0.3	<0.3	0.5	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	33	11	11	24	20
Copper, Cu	mg/kg	0.5	28	20	68	40	27
Lead, Pb	mg/kg	1	22	110	9	76	16
Nickel, Ni	mg/kg	0.5	5.2	3.9	2.1	4.3	9.2
Zinc, Zn	mg/kg	2	83	210	77	120	100

PARAMETER	UOM	LOR	DA8 SOIL - 31/1/2023 SE242441.016
Arsenic, As	mg/kg	1	3
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	30
Copper, Cu	mg/kg	0.5	110
Lead, Pb	mg/kg	1	56
Nickel, Ni	mg/kg	0.5	5.8
Zinc, Zn	mg/kg	2	170

Mercury in Soil [AN312] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	0.05

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
Mercury	mg/kg	0.05	<0.05	0.27	0.05	<0.05	<0.05

PARAMETER	UOM	LOR	DA8 SOIL - 31/1/2023 SE242441.016
Mercury	mg/kg	0.05	0.07

Moisture Content [AN002] Tested: 2/2/2023

PARAMETER	UOM	LOR	HS6(100) SOIL - 31/1/2023 SE242441.001	HS7(200) SOIL - 31/1/2023 SE242441.002	HS8(100) SOIL - 31/1/2023 SE242441.003	HS9(200) SOIL - 31/1/2023 SE242441.004	HS10 SOIL - 31/1/2023 SE242441.005
% Moisture	%w/w	1	12.5	13.2	17.8	15.6	22.1

PARAMETER	UOM	LOR	HS11 SOIL - 31/1/2023 SE242441.006	HS12 SOIL - 31/1/2023 SE242441.007	HS13 SOIL - 31/1/2023 SE242441.008	HS14 SOIL - 31/1/2023 SE242441.009	HS15 SOIL - 31/1/2023 SE242441.010
% Moisture	%w/w	1	23.3	11.9	13.8	12.3	13.4

PARAMETER	UOM	LOR	HS16 SOIL - 31/1/2023 SE242441.011	HS17 SOIL - 31/1/2023 SE242441.012	HS18 SOIL - 31/1/2023 SE242441.013	HS19 SOIL - 31/1/2023 SE242441.014	HS20 SOIL - 31/1/2023 SE242441.015
% Moisture	%w/w	1	8.4	7.8	14.8	5.4	4.1

PARAMETER	UOM	LOR	DA8 SOIL - 31/1/2023 SE242441.016
% Moisture	%w/w	1	13.0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC /MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken . This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup /fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR			
***	Indicates that both * and ** apply.		Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242441 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-2**
Order Number	**15156-2**
Samples	16

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242441 R0**
Date Received	01 Feb 2023
Date Reported	08 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	12 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items
Matrix Spike	OC Pesticides in Soil	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	TRH (Total Recoverable Hydrocarbons) in Soil	3 items
	VOC's in Soil	1 item
	Volatile Petroleum Hydrocarbons in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	16 Soil	Type of documentation received	COC
Date documentation received	1/2/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	18.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242441 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS10	SE242441.005	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS11	SE242441.006	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS12	SE242441.007	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS13	SE242441.008	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS14	SE242441.009	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS15	SE242441.010	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS16	SE242441.011	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS17	SE242441.012	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS18	SE242441.013	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS19	SE242441.014	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
HS20	SE242441.015	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023
DA8	SE242441.016	LB270379	31 Jan 2023	01 Feb 2023	28 Feb 2023	02 Feb 2023	28 Feb 2023	06 Feb 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS10	SE242441.005	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS11	SE242441.006	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS12	SE242441.007	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS13	SE242441.008	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS14	SE242441.009	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS15	SE242441.010	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS16	SE242441.011	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS17	SE242441.012	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS18	SE242441.013	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS19	SE242441.014	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
HS20	SE242441.015	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023
DA8	SE242441.016	LB270386	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	07 Feb 2023	06 Feb 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS10	SE242441.005	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS11	SE242441.006	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS12	SE242441.007	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS13	SE242441.008	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS14	SE242441.009	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS15	SE242441.010	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS16	SE242441.011	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS17	SE242441.012	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS18	SE242441.013	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS19	SE242441.014	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS20	SE242441.015	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS10	SE242441.005	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

HOLDING TIME SUMMARY

SE242441 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS11	SE242441.006	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS12	SE242441.007	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS13	SE242441.008	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS14	SE242441.009	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS15	SE242441.010	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS16	SE242441.011	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS17	SE242441.012	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS18	SE242441.013	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS19	SE242441.014	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS20	SE242441.015	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS10	SE242441.005	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS11	SE242441.006	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS12	SE242441.007	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS13	SE242441.008	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS14	SE242441.009	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS15	SE242441.010	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS16	SE242441.011	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS17	SE242441.012	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS18	SE242441.013	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS19	SE242441.014	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS20	SE242441.015	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS10	SE242441.005	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS11	SE242441.006	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS12	SE242441.007	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS13	SE242441.008	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS14	SE242441.009	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS15	SE242441.010	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS16	SE242441.011	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS17	SE242441.012	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS18	SE242441.013	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS19	SE242441.014	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
HS20	SE242441.015	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023
DA8	SE242441.016	LB270376	31 Jan 2023	01 Feb 2023	30 Jul 2023	02 Feb 2023	30 Jul 2023	06 Feb 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS10	SE242441.005	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS11	SE242441.006	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS12	SE242441.007	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS13	SE242441.008	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS14	SE242441.009	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS15	SE242441.010	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS16	SE242441.011	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

HOLDING TIME SUMMARY

SE242441 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

TRH (Total Recoverable Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS17	SE242441.012	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS18	SE242441.013	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS19	SE242441.014	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023
HS20	SE242441.015	LB270357	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Mar 2023	06 Feb 2023

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS10	SE242441.005	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS11	SE242441.006	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS12	SE242441.007	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS13	SE242441.008	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS14	SE242441.009	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS15	SE242441.010	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS16	SE242441.011	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS17	SE242441.012	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS18	SE242441.013	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS19	SE242441.014	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS20	SE242441.015	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS6(100)	SE242441.001	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS7(200)	SE242441.002	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS8(100)	SE242441.003	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS9(200)	SE242441.004	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS10	SE242441.005	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS11	SE242441.006	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS12	SE242441.007	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS13	SE242441.008	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS14	SE242441.009	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS15	SE242441.010	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS16	SE242441.011	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS17	SE242441.012	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS18	SE242441.013	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS19	SE242441.014	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023
HS20	SE242441.015	LB270381	31 Jan 2023	01 Feb 2023	14 Feb 2023	02 Feb 2023	14 Feb 2023	06 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	97
	HS7(200)	SE242441.002	%	60 - 130%	104
	HS8(100)	SE242441.003	%	60 - 130%	101
	HS9(200)	SE242441.004	%	60 - 130%	103
	HS10	SE242441.005	%	60 - 130%	108
	HS11	SE242441.006	%	60 - 130%	105
	HS12	SE242441.007	%	60 - 130%	110
	HS13	SE242441.008	%	60 - 130%	103
	HS14	SE242441.009	%	60 - 130%	104
	HS15	SE242441.010	%	60 - 130%	102
	HS16	SE242441.011	%	60 - 130%	104
	HS17	SE242441.012	%	60 - 130%	97
	HS18	SE242441.013	%	60 - 130%	101
	HS19	SE242441.014	%	60 - 130%	97
	HS20	SE242441.015	%	60 - 130%	104

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	84
	HS7(200)	SE242441.002	%	60 - 130%	82
	HS8(100)	SE242441.003	%	60 - 130%	80
	HS9(200)	SE242441.004	%	60 - 130%	80
	HS10	SE242441.005	%	60 - 130%	84
	HS11	SE242441.006	%	60 - 130%	85
	HS12	SE242441.007	%	60 - 130%	82
	HS13	SE242441.008	%	60 - 130%	81
	HS14	SE242441.009	%	60 - 130%	82
	HS15	SE242441.010	%	60 - 130%	81
	HS16	SE242441.011	%	60 - 130%	80
	HS17	SE242441.012	%	60 - 130%	83
	HS18	SE242441.013	%	60 - 130%	86
	HS19	SE242441.014	%	60 - 130%	82
	HS20	SE242441.015	%	60 - 130%	83
d14-p-terphenyl (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	87
	HS7(200)	SE242441.002	%	60 - 130%	85
	HS8(100)	SE242441.003	%	60 - 130%	85
	HS9(200)	SE242441.004	%	60 - 130%	85
	HS10	SE242441.005	%	60 - 130%	85
	HS11	SE242441.006	%	60 - 130%	89
	HS12	SE242441.007	%	60 - 130%	90
	HS13	SE242441.008	%	60 - 130%	86
	HS14	SE242441.009	%	60 - 130%	87
	HS15	SE242441.010	%	60 - 130%	86
	HS16	SE242441.011	%	60 - 130%	85
	HS17	SE242441.012	%	60 - 130%	86
	HS18	SE242441.013	%	60 - 130%	103
	HS19	SE242441.014	%	60 - 130%	86
	HS20	SE242441.015	%	60 - 130%	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS6(100)	SE242441.001	%	70 - 130%	84
	HS7(200)	SE242441.002	%	70 - 130%	82
	HS8(100)	SE242441.003	%	70 - 130%	80
	HS9(200)	SE242441.004	%	70 - 130%	80
	HS10	SE242441.005	%	70 - 130%	84
	HS11	SE242441.006	%	70 - 130%	85
	HS12	SE242441.007	%	70 - 130%	82
	HS13	SE242441.008	%	70 - 130%	81
	HS14	SE242441.009	%	70 - 130%	82
	HS15	SE242441.010	%	70 - 130%	81
	HS16	SE242441.011	%	70 - 130%	80

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS17	SE242441.012	%	70 - 130%	83
	HS18	SE242441.013	%	70 - 130%	86
	HS19	SE242441.014	%	70 - 130%	82
	HS20	SE242441.015	%	70 - 130%	83
d14-p-terphenyl (Surrogate)	HS6(100)	SE242441.001	%	70 - 130%	87
	HS7(200)	SE242441.002	%	70 - 130%	85
	HS8(100)	SE242441.003	%	70 - 130%	85
	HS9(200)	SE242441.004	%	70 - 130%	85
	HS10	SE242441.005	%	70 - 130%	85
	HS11	SE242441.006	%	70 - 130%	89
	HS12	SE242441.007	%	70 - 130%	90
	HS13	SE242441.008	%	70 - 130%	86
	HS14	SE242441.009	%	70 - 130%	87
	HS15	SE242441.010	%	70 - 130%	86
	HS16	SE242441.011	%	70 - 130%	85
	HS17	SE242441.012	%	70 - 130%	86
	HS18	SE242441.013	%	70 - 130%	103
	HS19	SE242441.014	%	70 - 130%	86
	HS20	SE242441.015	%	70 - 130%	88
d5-nitrobenzene (Surrogate)	HS6(100)	SE242441.001	%	70 - 130%	97
	HS7(200)	SE242441.002	%	70 - 130%	98
	HS8(100)	SE242441.003	%	70 - 130%	96
	HS9(200)	SE242441.004	%	70 - 130%	96
	HS10	SE242441.005	%	70 - 130%	96
	HS11	SE242441.006	%	70 - 130%	101
	HS12	SE242441.007	%	70 - 130%	98
	HS13	SE242441.008	%	70 - 130%	99
	HS14	SE242441.009	%	70 - 130%	100
	HS15	SE242441.010	%	70 - 130%	99
	HS16	SE242441.011	%	70 - 130%	97
	HS17	SE242441.012	%	70 - 130%	98
	HS18	SE242441.013	%	70 - 130%	119
	HS19	SE242441.014	%	70 - 130%	102
	HS20	SE242441.015	%	70 - 130%	103

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	75
	HS7(200)	SE242441.002	%	60 - 130%	71
	HS8(100)	SE242441.003	%	60 - 130%	69
	HS9(200)	SE242441.004	%	60 - 130%	71
	HS10	SE242441.005	%	60 - 130%	71
	HS11	SE242441.006	%	60 - 130%	70
	HS12	SE242441.007	%	60 - 130%	72
	HS13	SE242441.008	%	60 - 130%	73
	HS14	SE242441.009	%	60 - 130%	73
	HS15	SE242441.010	%	60 - 130%	69
	HS16	SE242441.011	%	60 - 130%	78
	HS17	SE242441.012	%	60 - 130%	76
	HS18	SE242441.013	%	60 - 130%	77
	HS19	SE242441.014	%	60 - 130%	88
	HS20	SE242441.015	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	74
	HS7(200)	SE242441.002	%	60 - 130%	70
	HS8(100)	SE242441.003	%	60 - 130%	71
	HS9(200)	SE242441.004	%	60 - 130%	73
	HS10	SE242441.005	%	60 - 130%	73
	HS11	SE242441.006	%	60 - 130%	73
	HS12	SE242441.007	%	60 - 130%	74
	HS13	SE242441.008	%	60 - 130%	74
	HS14	SE242441.009	%	60 - 130%	75

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	HS15	SE242441.010	%	60 - 130%	71
	HS16	SE242441.011	%	60 - 130%	75
	HS17	SE242441.012	%	60 - 130%	73
	HS18	SE242441.013	%	60 - 130%	67
	HS19	SE242441.014	%	60 - 130%	71
	HS20	SE242441.015	%	60 - 130%	71
d8-toluene (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	81
	HS7(200)	SE242441.002	%	60 - 130%	77
	HS8(100)	SE242441.003	%	60 - 130%	75
	HS9(200)	SE242441.004	%	60 - 130%	77
	HS10	SE242441.005	%	60 - 130%	77
	HS11	SE242441.006	%	60 - 130%	77
	HS12	SE242441.007	%	60 - 130%	80
	HS13	SE242441.008	%	60 - 130%	78
	HS14	SE242441.009	%	60 - 130%	80
	HS15	SE242441.010	%	60 - 130%	76
	HS16	SE242441.011	%	60 - 130%	84
	HS17	SE242441.012	%	60 - 130%	82
	HS18	SE242441.013	%	60 - 130%	75
	HS19	SE242441.014	%	60 - 130%	87
	HS20	SE242441.015	%	60 - 130%	86

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	75
	HS7(200)	SE242441.002	%	60 - 130%	71
	HS8(100)	SE242441.003	%	60 - 130%	69
	HS9(200)	SE242441.004	%	60 - 130%	71
	HS10	SE242441.005	%	60 - 130%	71
	HS11	SE242441.006	%	60 - 130%	70
	HS12	SE242441.007	%	60 - 130%	72
	HS13	SE242441.008	%	60 - 130%	73
	HS14	SE242441.009	%	60 - 130%	73
	HS15	SE242441.010	%	60 - 130%	69
	HS16	SE242441.011	%	60 - 130%	78
	HS17	SE242441.012	%	60 - 130%	76
	HS18	SE242441.013	%	60 - 130%	77
	HS19	SE242441.014	%	60 - 130%	88
	HS20	SE242441.015	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	74
	HS7(200)	SE242441.002	%	60 - 130%	70
	HS8(100)	SE242441.003	%	60 - 130%	71
	HS9(200)	SE242441.004	%	60 - 130%	73
	HS10	SE242441.005	%	60 - 130%	73
	HS11	SE242441.006	%	60 - 130%	73
	HS12	SE242441.007	%	60 - 130%	74
	HS13	SE242441.008	%	60 - 130%	74
	HS14	SE242441.009	%	60 - 130%	75
	HS15	SE242441.010	%	60 - 130%	71
	HS16	SE242441.011	%	60 - 130%	75
	HS17	SE242441.012	%	60 - 130%	73
	HS18	SE242441.013	%	60 - 130%	67
	HS19	SE242441.014	%	60 - 130%	71
	HS20	SE242441.015	%	60 - 130%	71
d8-toluene (Surrogate)	HS6(100)	SE242441.001	%	60 - 130%	81
	HS7(200)	SE242441.002	%	60 - 130%	77
	HS8(100)	SE242441.003	%	60 - 130%	75
	HS9(200)	SE242441.004	%	60 - 130%	77
	HS10	SE242441.005	%	60 - 130%	77
	HS11	SE242441.006	%	60 - 130%	77
	HS12	SE242441.007	%	60 - 130%	80

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	HS13	SE242441.008	%	60 - 130%	78
	HS14	SE242441.009	%	60 - 130%	80
	HS15	SE242441.010	%	60 - 130%	76
	HS16	SE242441.011	%	60 - 130%	84
	HS17	SE242441.012	%	60 - 130%	82
	HS18	SE242441.013	%	60 - 130%	75
	HS19	SE242441.014	%	60 - 130%	87
	HS20	SE242441.015	%	60 - 130%	86

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270379.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270357.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	107

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270357.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	74
		d14-p-terphenyl (Surrogate)	%	-	78

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB270357.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270357.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	88
		2-fluorobiphenyl (Surrogate)	%	-	74
		d14-p-terphenyl (Surrogate)	%	-	78

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB270376.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB270357.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270381.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76
		d8-toluene (Surrogate)	%	-	78
		Bromofluorobenzene (Surrogate)	%	-	72
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270381.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270379.014	Mercury	mg/kg	0.05	0.05	0.08	104	52
SE242496.003	LB270379.024	Mercury	mg/kg	0.05	0.09	0.11	80	25

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270386.011	% Moisture	%w/w	1	13.4	15.7	37	16
SE242496.003	LB270386.021	% Moisture	%w/w	1	4.5	3.3	56	30

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	0.3	0.3	66	5
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	153	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	0.2	0.2	88	21
			p,p'-DDT	mg/kg	0.1	0.9	1.0	41	18
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	1	2	101	14
			Total OC VIC EPA	mg/kg	1	1	1	111	13
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	NVL	NVL	NVL	NVL
SE242496.003	LB270357.023		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242496.003	LB270357.023		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	1

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
SE242496.003	LB270357.023		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
SE242496.003	LB270357.023		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	0.1	0.1	111	26
			Acenaphthene	mg/kg	0.1	<0.1	0.1	151	28
			Fluorene	mg/kg	0.1	<0.1	0.2	107	68
			Phenanthrene	mg/kg	0.1	0.6	1.9	38	99 ⑨
			Anthracene	mg/kg	0.1	0.2	0.6	55	92 ⑨
			Fluoranthene	mg/kg	0.1	1.1	2.3	36	68 ⑨
			Pyrene	mg/kg	0.1	1.1	2.3	36	66 ⑨
			Benzo(a)anthracene	mg/kg	0.1	0.6	1.1	41	56 ⑨
			Chrysene	mg/kg	0.1	0.6	1.0	43	53 ⑨
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.8	1.3	40	44 ⑨
			Benzo(k)fluoranthene	mg/kg	0.1	0.3	0.5	56	43
			Benzo(a)pyrene	mg/kg	0.1	0.8	1.3	40	45 ⑨
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.5	0.7	46	40
			Dibenzo(ah)anthracene	mg/kg	0.1	0.1	0.2	103	38
			Benzo(ghi)perylene	mg/kg	0.1	0.5	0.7	46	40
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	1.1	1.8	24	45 ⑨
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	1.1	1.8	24	45 ⑨
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	1.1	1.8	30	45 ⑨
			Total PAH (18)	mg/kg	0.8	7.4	14	31	63 ⑨
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	4

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270376.014	Arsenic, As	mg/kg	1	2	3	72	27
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	168	0
		Chromium, Cr	mg/kg	0.5	14	14	34	4
		Copper, Cu	mg/kg	0.5	21	22	32	5
		Nickel, Ni	mg/kg	0.5	3.6	4.0	43	10
		Lead, Pb	mg/kg	1	100	150	31	33 ②
		Zinc, Zn	mg/kg	2	120	120	32	1
SE242496.003	LB270376.024	Arsenic, As	mg/kg	1	2	2	78	12
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	4.2	4.9	41	15
		Copper, Cu	mg/kg	0.5	14	24	33	51 ②
		Nickel, Ni	mg/kg	0.5	2.5	3.1	48	20
		Lead, Pb	mg/kg	1	75	68	31	10
		Zinc, Zn	mg/kg	2	54	77	33	36 ②

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014		TRH C10-C14	mg/kg	20	<20	<20	173	0
			TRH C15-C28	mg/kg	45	220	260	49	19
			TRH C29-C36	mg/kg	45	<45	62	115	31
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	220	320	71	40
			TRH >C10-C40 Total (F bands)	mg/kg	210	260	320	101	20
		TRH F Bands	TRH >C10-C16	mg/kg	25	31	30	113	3
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	31	30	113	3
			TRH >C16-C34 (F3)	mg/kg	90	230	290	64	23

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270357.014	TRH F Bands	TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE242496.003	LB270357.023		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	76	96	82	24
			TRH C29-C36	mg/kg	45	72	110	80	39
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	150	200	93	32
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	175	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	120	170	92	30
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	195	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270381.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.1	6.6	50	7
			d8-toluene (Surrogate)	mg/kg	-	7.6	7.1	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.9	7.1	50	3
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE242496.003	LB270381.023	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.3	6.9	50	6
			d8-toluene (Surrogate)	mg/kg	-	8.2	7.6	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.8	7.1	50	8
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242441.010	LB270381.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.1	6.6	30	7
			d8-toluene (Surrogate)	mg/kg	-	7.6	7.1	30	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.9	7.1	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE242496.003	LB270381.023		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.3	6.9	30	6
			d8-toluene (Surrogate)	mg/kg	-	8.2	7.6	30	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.8	7.1	30	8
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270379.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	113

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270357.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	88
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	94
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	91
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	89
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	83
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	96

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270357.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	88
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	90
		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	73
		Ethion	mg/kg	0.2	1.6	2	60 - 140	82
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	83
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270357.002		Naphthalene	mg/kg	0.1	4.1	4	60 - 140	104
		Acenaphthylene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthene	mg/kg	0.1	4.1	4	60 - 140	102
		Phenanthrene	mg/kg	0.1	4.0	4	60 - 140	99
		Anthracene	mg/kg	0.1	4.0	4	60 - 140	101
		Fluoranthene	mg/kg	0.1	4.4	4	60 - 140	109
		Pyrene	mg/kg	0.1	4.3	4	60 - 140	107
		Benzo(a)pyrene	mg/kg	0.1	4.5	4	60 - 140	114
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	97
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	83
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270376.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	90
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	100
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	104
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	97
	Lead, Pb	mg/kg	1	91	89.9	80 - 120	102
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270357.002		TRH C10-C14	mg/kg	20	46	40	60 - 140	115
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	111
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	76
	TRH F Bands	TRH >C10-C16	mg/kg	25	45	40	60 - 140	113
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	72

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270381.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	5.0	5	60 - 140	100
		Toluene	mg/kg	0.1	5.0	5	60 - 140	100
		Ethylbenzene	mg/kg	0.1	5.1	5	60 - 140	103
		m/p-xylene	mg/kg	0.2	9.8	10	60 - 140	98
		o-xylene	mg/kg	0.1	4.9	5	60 - 140	98
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	10	70 - 130	77

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270381.002	Surrogates	d8-toluene (Surrogate)	mg/kg	-	8.6	10	70 - 130	86
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270381.002		TRH C6-C10	mg/kg	25	98	92.5	60 - 140	105
		TRH C6-C9	mg/kg	20	87	80	60 - 140	109
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	10	70 - 130	77
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	68	62.5	60 - 140	108

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270379.004	Mercury	mg/kg	0.05	0.27	<0.05	0.2	111

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270357.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	95
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	99
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	97
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	0.3	0.6	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	97
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	94
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	0.1	0.4	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	0.5	0.8	-	-
			p,p'-DDT	mg/kg	0.1	3.1	4.0	0.2	-468 ⑥
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	5	6	-	-
			Total OC VIC EPA	mg/kg	1	5	5	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	NVL	NVL	NVL	NVL

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270357.004		Azinphos-methyl (Guthion)	mg/kg	0.2	2.0	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	91
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	90
			Dichlorvos	mg/kg	0.5	1.5	<0.5	2	74
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.9	<0.2	2	96
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	9.0	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	87

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270357.004	Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	105
		Acenaphthene	mg/kg	0.1	4.0	<0.1	4	101
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270357.004		Phenanthrene	mg/kg	0.1	3.9	<0.1	4	98
			Anthracene	mg/kg	0.1	3.9	<0.1	4	99
			Fluoranthene	mg/kg	0.1	4.4	<0.1	4	109
			Pyrene	mg/kg	0.1	4.1	<0.1	4	102
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.5	<0.1	4	113
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.6	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.7	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	33	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	97
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	87

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270376.004	Arsenic, As	mg/kg	1	48	4	50	87
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	83	34	50	98
		Copper, Cu	mg/kg	0.5	130	98	50	59 ⑨
		Nickel, Ni	mg/kg	0.5	51	5.6	50	91
		Lead, Pb	mg/kg	1	89	51	50	76
		Zinc, Zn	mg/kg	2	170	170	50	8 ⑨

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270357.004		TRH C10-C14	mg/kg	20	53	<20	40	113
			TRH C15-C28	mg/kg	45	100	94	40	15 ⑤
			TRH C29-C36	mg/kg	45	54	<45	40	48 ⑤
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	210	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	53	<25	40	110
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	110	120	40	-27 ⑤
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270381.004	Monocyclic	Benzene	mg/kg	0.1	4.5	<0.1	5	90
		Aromatic	Toluene	mg/kg	0.1	4.7	<0.1	5	93
			Ethylbenzene	mg/kg	0.1	4.8	<0.1	5	96
			m/p-xylene	mg/kg	0.2	9.3	<0.2	10	93
			o-xylene	mg/kg	0.1	4.7	<0.1	5	93
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.8	7.4	10	68 ①
			d8-toluene (Surrogate)	mg/kg	-	7.6	8.1	10	76
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.5	10	89
		Totals	Total BTEX*	mg/kg	0.6	28	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270381.004		TRH C6-C10	mg/kg	25	93	<25	92.5	100
			TRH C6-C9	mg/kg	20	82	<20	80	102
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.8	7.4	10	68 ①
			d8-toluene (Surrogate)	mg/kg	-	7.6	8.1	10	76

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242441.001	LB270381.004	Surrogates	Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.5	-	89
		VPH F	Benzene (F0)	mg/kg	0.1	4.5	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	65	<25	62.5	103

MATRIX SPIKE DUPLICATES

SE242441 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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source: Sydney.pdf page: 7 SGS Ref: SE242441_COC

Chain of Custody Form – Ref 15156-2

Ref: 15156-2
Investigator: Envirowest Consulting
9 Cameron Place
PO Box 8158
ORANGE NSW 2800
Telephone: (02) 6361 4954

Email: [redacted]
Contact Person: Felipe Canavez
Invoice: accounts@envirowest.net.au

Laboratory: SGS SYDNEY
16/33 Maddox Street
ALEXANDRIA NSW 2015

Quotation #: Envir_70119_2019
Courier/CN: Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/HCl	Unpre-served	Analysis (SGS Method Code): CL2T (8 metals)	OC/OP pesticides	TRH, PAH, BTEX, 8 Metals			
										CL2T	SV3	CL10			
1	HS6(100)	A	31/01/2023		X		X		X		X	X			
2	HS7(200)	A	31/01/2023		X		X		X		X	X			
3	HS8(100)	A	31/01/2023		X		X		X		X	X			
4	HS9(200)	A	31/01/2023		X		X		X		X	X			
5	HS10	A	31/01/2023		X		X		X		X	X			
6	HS11	A	31/01/2023		X		X		X		X	X			
7	HS12	A	31/01/2023		X		X		X		X	X			
8	HS13	A	31/01/2023		X		X		X		X	X			
9	HS14	A	31/01/2023		X		X		X		X	X			
10	HS15	A	31/01/2023		X		X		X		X	X			
11	HS16	A	31/01/2023		X		X		X		X	X			
12	HS17	A	31/01/2023		X		X		X		X	X			
13	HS18	A	31/01/2023		X		X		X		X	X			
14	HS19	A	31/01/2023		X		X		X		X	X			
15	HS20	A	31/01/2023		X		X		X		X	X			
16	DA8	A	31/01/2023		X		X		X	X					

SGS EHS Sydney COC
SE242441

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 31/01/2023 Time: 13.30

Relinquished by: (print and signature) Virginia Bragg [redacted] Date: 31/01/2023 Time 1500

Received by: (print and signature) [redacted] Date 01/02/23 Time @ 7.10

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-3**
Order Number	**15156-3**
Samples	5

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242583 R0**
Date Received	3/2/2023
Date Reported	9/2/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

[redacted]
Akheeqar BENIAMEEN
Chemist

[redacted]
Bennet LO
Senior Chemist

[redacted]
Dong LIANG
Metals/Inorganics Team Leader

[redacted]
Huong CRAWFORD
Production Manager

[redacted]
Shane MCDERMOTT
Inorganic/Metals Chemist

[redacted]
Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 6/2/2023

PARAMETER	UOM	LOR	BH1(2000) SOIL - 2/2/2023 SE242583.001	BH2(2000) SOIL - 2/2/2023 SE242583.002	BH3(2000) SOIL - 2/2/2023 SE242583.003	HS21 SOIL - 2/2/2023 SE242583.004	DA9 SOIL - 2/2/2023 SE242583.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 6/2/2023

PARAMETER	UOM	LOR	BH1(2000) SOIL - 2/2/2023 SE242583.001	BH2(2000) SOIL - 2/2/2023 SE242583.002	BH3(2000) SOIL - 2/2/2023 SE242583.003	HS21 SOIL - 2/2/2023 SE242583.004	DA9 SOIL - 2/2/2023 SE242583.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 6/2/2023

PARAMETER	UOM	LOR	BH1(2000) SOIL - 2/2/2023 SE242583.001	BH2(2000) SOIL - 2/2/2023 SE242583.002	BH3(2000) SOIL - 2/2/2023 SE242583.003	HS21 SOIL - 2/2/2023 SE242583.004	DA9 SOIL - 2/2/2023 SE242583.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	**1400**	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	**130**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	**1500**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	**1500**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	**1500**	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 6/2/2023

PARAMETER	UOM	LOR	HS21 SOIL - 2/2/2023 SE242583.004
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 6/2/2023

PARAMETER	UOM	LOR	HS21 SOIL - 2/2/2023 SE242583.004
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	**0.4**
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	**0.4**
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1
Total OC VIC EPA	mg/kg	1	<1

OP Pesticides in Soil [AN420] Tested: 6/2/2023

PARAMETER	UOM	LOR	HS21 SOIL - 2/2/2023 SE242583.004
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 6/2/2023

PARAMETER	UOM	LOR	HS21 SOIL - 2/2/2023 SE242583.004
Arsenic, As	mg/kg	1	**5**
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	**36**
Copper, Cu	mg/kg	0.5	**30**
Lead, Pb	mg/kg	1	**55**
Nickel, Ni	mg/kg	0.5	**8.1**
Zinc, Zn	mg/kg	2	**370**

Mercury in Soil [AN312] Tested: 6/2/2023

PARAMETER	UOM	LOR	HS21 SOIL - 2/2/2023 SE242583.004
Mercury	mg/kg	0.05	**0.05**

Moisture Content [AN002] Tested: 6/2/2023

PARAMETER	UOM	LOR	BH1(2000) SOIL - 2/2/2023 SE242583.001	BH2(2000) SOIL - 2/2/2023 SE242583.002	BH3(2000) SOIL - 2/2/2023 SE242583.003	HS21 SOIL - 2/2/2023 SE242583.004	DA9 SOIL - 2/2/2023 SE242583.005
% Moisture	%w/w	1	15.7	19.6	20.7	19.2	18.0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC /MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup /fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE242583 R0

CLIENT DETAILS

Contact	Felipe Canavez
Client	ENVIROWEST CONSULTING PTY LIMITED
Address	PO BOX 8158 NSW 2800
Telephone	[redacted]
Facsimile	
Email	
Project	**15156-3**
Order Number	**15156-3**
Samples	5

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	[redacted]
Facsimile	
Email	
SGS Reference	**SE242583 R0**
Date Received	03 Feb 2023
Date Reported	09 Feb 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	TRH (Total Recoverable Hydrocarbons) in Soil	4 items

SAMPLE SUMMARY

Sample counts by matrix	5 Soil	Type of documentation received	COC
Date documentation received	3/2/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	22.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242583 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS21	SE242583.004	LB270704	02 Feb 2023	03 Feb 2023	02 Mar 2023	06 Feb 2023	02 Mar 2023	09 Feb 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270695	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	11 Feb 2023	08 Feb 2023
BH2(2000)	SE242583.002	LB270695	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	11 Feb 2023	08 Feb 2023
BH3(2000)	SE242583.003	LB270695	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	11 Feb 2023	08 Feb 2023
HS21	SE242583.004	LB270695	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	11 Feb 2023	08 Feb 2023
DA9	SE242583.005	LB270695	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	11 Feb 2023	08 Feb 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH2(2000)	SE242583.002	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH3(2000)	SE242583.003	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
HS21	SE242583.004	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023
DA9	SE242583.005	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH2(2000)	SE242583.002	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH3(2000)	SE242583.003	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
HS21	SE242583.004	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
DA9	SE242583.005	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH2(2000)	SE242583.002	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
BH3(2000)	SE242583.003	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
HS21	SE242583.004	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023
DA9	SE242583.005	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	09 Feb 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HS21	SE242583.004	LB270698	02 Feb 2023	03 Feb 2023	01 Aug 2023	06 Feb 2023	01 Aug 2023	09 Feb 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023
BH2(2000)	SE242583.002	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023
BH3(2000)	SE242583.003	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023
HS21	SE242583.004	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023
DA9	SE242583.005	LB270691	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	18 Mar 2023	08 Feb 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
BH2(2000)	SE242583.002	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
BH3(2000)	SE242583.003	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
HS21	SE242583.004	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
DA9	SE242583.005	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1(2000)	SE242583.001	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
BH2(2000)	SE242583.002	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
BH3(2000)	SE242583.003	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
HS21	SE242583.004	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023
DA9	SE242583.005	LB270693	02 Feb 2023	03 Feb 2023	16 Feb 2023	06 Feb 2023	16 Feb 2023	08 Feb 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HS21	SE242583.004	%	60 - 130%	119

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS21	SE242583.004	%	60 - 130%	80
d14-p-terphenyl (Surrogate)	HS21	SE242583.004	%	60 - 130%	84

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HS21	SE242583.004	%	70 - 130%	74
d14-p-terphenyl (Surrogate)	HS21	SE242583.004	%	70 - 130%	86
d5-nitrobenzene (Surrogate)	HS21	SE242583.004	%	70 - 130%	100

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	92
	BH2(2000)	SE242583.002	%	60 - 130%	89
	BH3(2000)	SE242583.003	%	60 - 130%	85
	HS21	SE242583.004	%	60 - 130%	91
	DA9	SE242583.005	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	86
	BH2(2000)	SE242583.002	%	60 - 130%	86
	BH3(2000)	SE242583.003	%	60 - 130%	80
	HS21	SE242583.004	%	60 - 130%	84
	DA9	SE242583.005	%	60 - 130%	85
d8-toluene (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	89
	BH2(2000)	SE242583.002	%	60 - 130%	88
	BH3(2000)	SE242583.003	%	60 - 130%	81
	HS21	SE242583.004	%	60 - 130%	87
	DA9	SE242583.005	%	60 - 130%	86

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	92
	BH2(2000)	SE242583.002	%	60 - 130%	89
	BH3(2000)	SE242583.003	%	60 - 130%	85
	HS21	SE242583.004	%	60 - 130%	91
	DA9	SE242583.005	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	86
	BH2(2000)	SE242583.002	%	60 - 130%	86
	BH3(2000)	SE242583.003	%	60 - 130%	80
	HS21	SE242583.004	%	60 - 130%	84
	DA9	SE242583.005	%	60 - 130%	85
d8-toluene (Surrogate)	BH1(2000)	SE242583.001	%	60 - 130%	89
	BH2(2000)	SE242583.002	%	60 - 130%	88
	BH3(2000)	SE242583.003	%	60 - 130%	81
	HS21	SE242583.004	%	60 - 130%	87
	DA9	SE242583.005	%	60 - 130%	86

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270704.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270691.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	114

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270691.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB270691.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270691.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	77
		2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	86

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result
LB270698.001		Arsenic, As	mg/kg	1	<1
		Cadmium, Cd	mg/kg	0.3	<0.3
		Chromium, Cr	mg/kg	0.5	<0.5
		Copper, Cu	mg/kg	0.5	<0.5
		Nickel, Ni	mg/kg	0.5	<0.5
		Lead, Pb	mg/kg	1	<1
		Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB270691.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270693.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	86
		d8-toluene (Surrogate)	%	-	89
		Bromofluorobenzene (Surrogate)	%	-	91
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270693.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	86

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242716.002	LB270704.014	Mercury	mg/kg	0.05	0.0187777161	0.0148716	200	0
SE242716.004	LB270704.017	Mercury	mg/kg	0.05	0.0191792836	0.0145841584	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270695.011	% Moisture	%w/w	1	14.6008403361	15.8375634517	37	8
SE242716.004	LB270695.018	% Moisture	%w/w	1	18.5318892900	17.9566563467	35	3

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014		Alpha BHC	mg/kg	0.1	0	0	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	0.0004527710	0.0004190863	200	0
			Beta BHC	mg/kg	0.1	0.0017467097	0.0009055929	200	0
			Lindane (gamma BHC)	mg/kg	0.1	0.0013317510	0.0016333795	200	0
			Delta BHC	mg/kg	0.1	0.0007725858	0.0030992710	200	0
			Heptachlor	mg/kg	0.1	0.0002797233	0.0004171465	200	0
			Aldrin	mg/kg	0.1	0.0011254617	0.0009542365	200	0
			Isodrin	mg/kg	0.1	0.0017466655	0.0014055795	200	0
			Heptachlor epoxide	mg/kg	0.1	0.0025903889	0.0022818405	200	0
			Gamma Chlordane	mg/kg	0.1	0.0022145894	0.0018937539	200	0
			Alpha Chlordane	mg/kg	0.1	0.0014698004	0.0012673048	200	0
			Alpha Endosulfan	mg/kg	0.2	0.0008788170	0.0007416988	200	0
			o,p'-DDE*	mg/kg	0.1	0.0008788170	0.0007416988	200	0
			p,p'-DDE	mg/kg	0.1	0.0008596524	0.0011676252	200	0
			Dieldrin	mg/kg	0.2	0.0098312957	0.0085619801	200	0
			Endrin	mg/kg	0.2	0.0035320414	0.0024912656	200	0
			Beta Endosulfan	mg/kg	0.2	0.0012141576	0.0010503333	200	0
			o,p'-DDD*	mg/kg	0.1	0.0016213540	0.0007397340	200	0
			p,p'-DDD	mg/kg	0.1	0.0009633318	0.0008363217	200	0
			Endrin aldehyde	mg/kg	0.1	0.0047255943	0.0044902022	200	0
			Endosulfan sulphate	mg/kg	0.1	0.0014829355	0.0017803849	200	0
			o,p'-DDT*	mg/kg	0.1	0.0009633318	0.0008363217	200	0
			p,p'-DDT	mg/kg	0.1	0.0006802857	0.0014273994	200	0
			Endrin ketone	mg/kg	0.1	0.0007986484	0.0026296165	200	0
			Methoxychlor	mg/kg	0.1	0.0006680948	0.0008192594	200	0
			Mirex	mg/kg	0.1	0.0017331974	0.0030707123	200	0
			trans-Nonachlor	mg/kg	0.1	0.0007143382	0.0006519192	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0	200	0
			Total OC VIC EPA	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1731063383	0.1743377919	30	1
SE242716.004	LB270691.021		Alpha BHC	mg/kg	0.1	0	0	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	0.0002987716	0.0004352070	200	0
			Beta BHC	mg/kg	0.1	0	0.0005713228	200	0
			Lindane (gamma BHC)	mg/kg	0.1	0	0	200	0
			Delta BHC	mg/kg	0.1	0.0065807972	0.0049124246	200	0
			Heptachlor	mg/kg	0.1	0.0005251082	0.0003640033	200	0
			Aldrin	mg/kg	0.1	0.0006338183	0.0006259900	200	0
			Isodrin	mg/kg	0.1	0.0016952027	0.0002180600	200	0
			Heptachlor epoxide	mg/kg	0.1	0.0019126494	0.0018443788	200	0
			Gamma Chlordane	mg/kg	0.1	0.0065078991	0.0063918438	200	0
			Alpha Chlordane	mg/kg	0.1	0.0012723246	0.0015434885	200	0
			Alpha Endosulfan	mg/kg	0.2	0.0006397051	0.0009979149	200	0
			o,p'-DDE*	mg/kg	0.1	0.0006397051	0.0009979149	200	0
			p,p'-DDE	mg/kg	0.1	0.0007667728	0.0009284688	200	0
			Dieldrin	mg/kg	0.2	0.0023622692	0.0009757686	200	0
			Endrin	mg/kg	0.2	0.0046766507	0.0045735051	200	0
			Beta Endosulfan	mg/kg	0.2	0.0006848525	0	200	0
			o,p'-DDD*	mg/kg	0.1	0	0	200	0
			p,p'-DDD	mg/kg	0.1	0.0005786873	0.0012802028	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242716.004	LB270691.021		Endrin aldehyde	mg/kg	0.1	0.004369044	80.0004233947	200	0
			Endosulfan sulphate	mg/kg	0.1	0.002945372	70.0018112744	200	0
			o,p'-DDT*	mg/kg	0.1	0.0005786873	0	200	0
			p,p'-DDT	mg/kg	0.1	0.000448855	50.0018047038	200	0
			Endrin ketone	mg/kg	0.1	0.026860489	30.0067158001	200	0
			Methoxychlor	mg/kg	0.1	0.002213109	90.0014340876	200	0
			Mirex	mg/kg	0.1	0.033617254	40.0098103101	200	0
			trans-Nonachlor	mg/kg	0.1	0.005846871	20.0007340870	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0	200	0
			Total OC VIC EPA	mg/kg	1	0	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.170803336	60.1750546304	30	2

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014		Azinphos-methyl (Guthion)	mg/kg	0.2	0	0.0039897955	200	0
			Bromophos Ethyl	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0.001630725	50.0038163678	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0.001110517	60.0034096800	200	0
			Dichlorvos	mg/kg	0.5	0.001173124	90.0004517869	200	0
			Dimethoate	mg/kg	0.5	0.000564717	20.0009861798	200	0
			Ethion	mg/kg	0.2	0	0	200	0
			Fenitrothion	mg/kg	0.2	0	0.0002222796	200	0
			Malathion	mg/kg	0.2	0.002428250	60.0115259972	200	0
			Methidathion	mg/kg	0.5	0.0004194678	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.359414093	50.3616286264	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.409956140	90.4105375389	30	0
SE242716.004	LB270691.021		Azinphos-methyl (Guthion)	mg/kg	0.2	0.0005708625	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0.000697354	80.0005017525	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0.0004851244	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0.0015340713	0	200	0
			Dichlorvos	mg/kg	0.5	0.002386740	70.0003344428	200	0
			Dimethoate	mg/kg	0.5	0.000233007	60.0004009290	200	0
			Ethion	mg/kg	0.2	0.0001861594	0	200	0
			Fenitrothion	mg/kg	0.2	0	0	200	0
			Malathion	mg/kg	0.2	0.011940720	20.0157523502	200	0
			Methidathion	mg/kg	0.5	0.0004972241	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.405381731	60.5079097512	30	22
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.427286763	10.5267456772	30	21

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014	Naphthalene	mg/kg	0.1	0.008709014	20.0083454775	200	0
		2-methylnaphthalene	mg/kg	0.1	0.008561291	50.0079513309	200	0
		1-methylnaphthalene	mg/kg	0.1	0.007894849	40.0083734203	200	0
		Acenaphthylene	mg/kg	0.1	0.015439261	30.0177136217	200	0
		Acenaphthene	mg/kg	0.1	0.002428224	70.0042097606	200	0
		Fluorene	mg/kg	0.1	0.004119899	50.0069969248	200	0
		Phenanthrene	mg/kg	0.1	0.066190301	40.0951170178	154	0
		Anthracene	mg/kg	0.1	0.062110742	20.0295302021	200	0
		Fluoranthene	mg/kg	0.1	0.130198328	00.1739988930	96	29
		Pyrene	mg/kg	0.1	0.127737268	60.1585558032	100	22
		Benzo(a)anthracene	mg/kg	0.1	0.073379672	00.0913805869	151	0
		Chrysene	mg/kg	0.1	0.073357641	60.0873623194	154	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.106423775	80.1217204580	118	13
		Benzo(k)fluoranthene	mg/kg	0.1	0.043764860	20.0570749097	200	0
		Benzo(a)pyrene	mg/kg	0.1	0.089324062	50.1078460941	131	8
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.067431836	60.0795088503	166	0
		Dibenzo(ah)anthracene	mg/kg	0.1	0.012636203	70.0145326611	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014		Benzo(ghi)perylene	mg/kg	0.1	0.074995887	90.0867385935	154	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0	0.1078460941	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.121	0.1788460941	143	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.242	0.2498460941	132	0
			Total PAH (18)	mg/kg	0.8	0.257935596	60.4404007904	59	52
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.391617636	30.3558772963	30	10
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.359414093	50.3616286264	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.409956140	90.4105375389	30	0
SE242716.004	LB270691.021		Naphthalene	mg/kg	0.1	0.000482540	90.0004681495	200	0
			2-methylnaphthalene	mg/kg	0.1	0.000209149	20.0002234117	200	0
			1-methylnaphthalene	mg/kg	0.1	0.000144322	20.0001441670	200	0
			Acenaphthylene	mg/kg	0.1	0.000166725	80.0017107666	200	0
			Acenaphthene	mg/kg	0.1	0.000252293	00.0002464257	200	0
			Fluorene	mg/kg	0.1	0.004472698	0.0031075290	200	0
			Phenanthrene	mg/kg	0.1	0.004866711	00.0056525670	200	0
			Anthracene	mg/kg	0.1	0.004574984	30.0024003157	200	0
			Fluoranthene	mg/kg	0.1	0.001106977	70.0101255386	200	0
			Pyrene	mg/kg	0.1	0.001307027	80.0112380953	200	0
			Benzo(a)anthracene	mg/kg	0.1	0.006559120	30.0109407003	200	0
			Chrysene	mg/kg	0.1	0.005813028	70.0059371166	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.001566081	00.0110177166	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	0.001482082	20.0106947415	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.001477709	00.0069405449	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0	0.0043516944	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0	0	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.000778991	20.0049171640	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.121	0.121	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.242	0.242	134	0
			Total PAH (18)	mg/kg	0.8	0	0	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.472487493	30.6063222999	30	25
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.405381731	60.5079097512	30	22
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.427286763	10.5267456772	30	21

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242716.002	LB270698.014	Arsenic, As	mg/kg	1	3.3687222838	5.39405325	53	46
		Cadmium, Cd	mg/kg	0.3	0.0512119532	0.04131	200	0
		Chromium, Cr	mg/kg	0.5	15.411725206	14.372265375	33	7
		Copper, Cu	mg/kg	0.5	4.1297319088	5.46014925	40	28
		Nickel, Ni	mg/kg	0.5	3.7953178542	6.36070725	40	51 ②
		Lead, Pb	mg/kg	1	14.630230800	216.13052225	37	10
		Zinc, Zn	mg/kg	2	5.8832291876	8.18247825	58	33
SE242716.004	LB270698.017	Arsenic, As	mg/kg	1	5.296752185	35.1611733193	49	3
		Cadmium, Cd	mg/kg	0.3	0.0120735162	0.061375	200	0
		Chromium, Cr	mg/kg	0.5	12.032768118	71.236782563(	34	7
		Copper, Cu	mg/kg	0.5	5.996010000	710.525554621	36	55 ②
		Nickel, Ni	mg/kg	0.5	6.681685110	26.8332552521	37	2
		Lead, Pb	mg/kg	1	16.338988909	85.2870168067	36	7
		Zinc, Zn	mg/kg	2	10.171434365	80.2810861344	50	1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014		TRH C10-C14	mg/kg	20	4.103955878	25.0971709717	200	0
			TRH C15-C28	mg/kg	45	41.630599531	82.965996111	136	0
			TRH C29-C36	mg/kg	45	32.149506011	81.5873507122	171	0
			TRH C37-C40	mg/kg	100	9.434432408	88.6989644089	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	4.430583660	65.1927151529	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	34.974487164	36.089909931	167	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270691.014	TRH F Bands	TRH >C34-C40 (F4)	mg/kg	120	17.64901003846	09133833	200	0
SE242716.004	LB270691.021		TRH C10-C14	mg/kg	20	6.467664370226	.5335872224	151	28
			TRH C15-C28	mg/kg	45	9.562117333917	.6156595667	200	0
			TRH C29-C36	mg/kg	45	4.20948673428	.5103312774	200	0
			TRH C37-C40	mg/kg	100	0.2928134901	1.2391866902	200	0
			TRH C10-C36 Total	mg/kg	110	0	26.5335872224	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	7.086086461324	.697061012	187	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	12.58395255223	.469586861	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0.56220190102	.9468749647	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270693.014	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.001260090	50.0013235459	200	0
			Ethylbenzene	mg/kg	0.1	0.000531305	80.0006768583	200	0
			m/p-xylene	mg/kg	0.2	0.003523118	80.0035842855	200	0
			o-xylene	mg/kg	0.1	0.000548542	70.0005801914	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.001240270	00.0012734343	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.284301970	98.7037968995	50	5
			d8-toluene (Surrogate)	mg/kg	-	8.247198722	28.6639253983	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.425532957	88.7330514578	50	4
		Totals	Total BTEX*	mg/kg	0.6	0	0	200	0
			Total Xylenes*	mg/kg	0.3	0.004071661	50.0041644770	200	0
SE242716.004	LB270693.021	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.000805610	10.0008355854	200	0
			Ethylbenzene	mg/kg	0.1	0.000411239	50.0003557131	200	0
			m/p-xylene	mg/kg	0.2	0.002937834	20.0029148488	200	0
			o-xylene	mg/kg	0.1	0.000293550	40.0002162182	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.000637077	50.0006078864	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.434383589	69.0150378008	50	7
			d8-toluene (Surrogate)	mg/kg	-	8.518999745	68.9440692962	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.509181089	58.9161114197	50	5
		Totals	Total BTEX*	mg/kg	0.6	0	0	200	0
			Total Xylenes*	mg/kg	0.3	0.003231384	70.0031310671	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242613.005	LB270693.014		TRH C6-C10	mg/kg	25	0.089094542	20.0736644630	200	0
			TRH C6-C9	mg/kg	20	0.072430526	90.0577771415	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.284301970	98.7037968995	30	5
			d8-toluene (Surrogate)	mg/kg	-	8.247198722	28.6639253983	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.425532957	88.7330514578	30	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0.089094542	20.0736644630	200	0
SE242716.004	LB270693.021		TRH C6-C10	mg/kg	25	0.064761864	80.1038527639	200	0
			TRH C6-C9	mg/kg	20	0.051308835	60.0770706783	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.434383589	69.0150378008	30	7
			d8-toluene (Surrogate)	mg/kg	-	8.518999745	68.9440692962	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.509181089	58.9161114197	30	5
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0.064761864	80.1038527639	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270704.002	Mercury	mg/kg	0.05	0.23	0.2	70 - 130	114

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270691.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	95
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	104
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	99
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	99
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	96
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	93
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.15	40 - 130	113

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270691.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	2	60 - 140	87
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	88
		Dichlorvos	mg/kg	0.5	1.7	2	60 - 140	86
		Ethion	mg/kg	0.2	1.4	2	60 - 140	71
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270691.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthylene	mg/kg	0.1	4.3	4	60 - 140	107
		Acenaphthene	mg/kg	0.1	4.2	4	60 - 140	104
		Phenanthrene	mg/kg	0.1	4.1	4	60 - 140	102
		Anthracene	mg/kg	0.1	4.1	4	60 - 140	103
		Fluoranthene	mg/kg	0.1	4.4	4	60 - 140	111
		Pyrene	mg/kg	0.1	4.3	4	60 - 140	109
		Benzo(a)pyrene	mg/kg	0.1	4.7	4	60 - 140	118
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270698.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	86
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	104
	Lead, Pb	mg/kg	1	95	89.9	80 - 120	106
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270691.002		TRH C10-C14	mg/kg	20	39	40	60 - 140	98
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	99
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	84
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	99
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270693.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.2	5	60 - 140	84
		Toluene	mg/kg	0.1	4.3	5	60 - 140	86
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	88
		m/p-xylene	mg/kg	0.2	8.4	10	60 - 140	84
		o-xylene	mg/kg	0.1	4.5	5	60 - 140	91
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	10	70 - 130	103

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270693.002	Surrogates	d8-toluene (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10	70 - 130	100

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270693.002		TRH C6-C10	mg/kg	25	90	92.5	60 - 140	97
		TRH C6-C9	mg/kg	20	77	80	60 - 140	97
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10	70 - 130	100
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	64	62.5	60 - 140	102

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.004	LB270704.004	Mercury	mg/kg	0.05	0.26	0.05	0.2	102

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242613.001	LB270691.023		Naphthalene	mg/kg	0.1	3.9	0.00131310377	4	98
			2-methylnaphthalene	mg/kg	0.1	<0.1	0.00070533650	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	0.00073721647	-	-
			Acenaphthylene	mg/kg	0.1	4.1	0.00113638033	4	103
			Acenaphthene	mg/kg	0.1	4.0	0.00031495519	4	99
			Fluorene	mg/kg	0.1	<0.1	0.00059986931	-	-
			Phenanthrene	mg/kg	0.1	3.9	0.00538318167	4	97
			Anthracene	mg/kg	0.1	3.9	0.00133387250	4	98
			Fluoranthene	mg/kg	0.1	4.1	0.00419055601	4	101
			Pyrene	mg/kg	0.1	4.1	0.00394310099	4	101
			Benzo(a)anthracene	mg/kg	0.1	<0.1	0.00757213302	-	-
			Chrysene	mg/kg	0.1	<0.1	0.00256043265	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.00515126267	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.00493252322	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.3	0.00317122304	4	109
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.00231078279	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.00276776806	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.3	0	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.4	0.121	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.5	0.242	-	-
			Total PAH (18)	mg/kg	0.8	32	0	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.0	0.39617352900	-	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.0	0.35801277002	-	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.0	0.40240725458	-	0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.004	LB270698.004	Arsenic, As	mg/kg	1	49	5	50	88
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	89
		Chromium, Cr	mg/kg	0.5	73	36	50	74
		Copper, Cu	mg/kg	0.5	74	30	50	88
		Nickel, Ni	mg/kg	0.5	54	8.1	50	92
		Lead, Pb	mg/kg	1	100	55	50	90
		Zinc, Zn	mg/kg	2	390	370	50	40 ⑥

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.004	LB270691.023		TRH C10-C14	mg/kg	20	65	<20	40	140
			TRH C15-C28	mg/kg	45	1600	1400	40	467 ⑥
			TRH C29-C36	mg/kg	45	190	130	40	150 ⑥
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	1800	1500	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	1800	1500	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	73	<25	40	147 ⑥
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	73	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	1700	1500	40	493 ⑥
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.001	LB270693.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.7	<0.1	5	74
			Toluene	mg/kg	0.1	4.0	<0.1	5	79
			Ethylbenzene	mg/kg	0.1	4.3	<0.1	5	85
			m/p-xylene	mg/kg	0.2	8.4	<0.2	10	84
			o-xylene	mg/kg	0.1	4.5	<0.1	5	90

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.001	LB270693.004	Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	8.6	10	90
			d8-toluene (Surrogate)	mg/kg	-	8.4	8.9	10	84
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	9.2	10	90
		Totals	Total BTEX*	mg/kg	0.6	25	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	13	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242583.001	LB270693.004		TRH C6-C10	mg/kg	25	78	<25	92.5	83
			TRH C6-C9	mg/kg	20	67	<20	80	83
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	8.6	10	90
			d8-toluene (Surrogate)	mg/kg	-	8.4	8.9	10	84
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	9.2	-	90
		VPH F	Benzene (F0)	mg/kg	0.1	3.7	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	53	<25	62.5	84

MATRIX SPIKE DUPLICATES

SE242583 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

S

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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source: Sydney.pdf page: 1 SGS Ref: SE242583_COC

Chain of Custody Form – Ref 15156-3

Ref:	**15156-3**
Investigator:	Envirowest Consulting 9 Cameron Place PO Box 8158 ORANGE NSW 2800
Telephone:	(02) 6361 4954
Email:	[redacted]
Contact Person:	Felipe Canavez
Invoice:	accounts@envirowest.net.au
Laboratory:	SGS SYDNEY 16/33 Maddox Street ALEXANDRIA NSW 2015
Quotation #:	Envir_70119_2019
Courier/CN:	Grants Express

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/HCl	Unpre-served	Analysis (SGS Method Code): CL5 – TRH, BTEXN	SV3 – OC/OP pesticides	CL10 – TRH, PAH, BTEX, 8 Metals			
1	BH1(2000)	A	2/02/2023		X		X		X	X					
2	BH2(2000)	A	2/02/2023		X		X		X	X					
3	BH3(2000)	A	2/02/2023		X		X		X	X					
4	HS21	A	2/02/2023		X		X		X		X	X			
5	DA9	A	2/02/2023		X		X		X	X					

SGS EHS Sydney COC

SE242583

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Felipe Canavez
Date: 2/2/2023 Time: 11:00

Relinquished by: (print and signature)	Virginia Brage[redacted]	Date: 2/2/2023	Time 12:00	Received by: (print and signature)	[redacted] Date 03/02/23 Time @ 6:55

Please return completed form to Envirowest Consulting, *A = Solvent rinsed glass jar with Teflon lined lid and green label, B= Plastic with green label, C= Amber with green label, D= Vial with white label, E= Plastic with red label

Appendix 4. Soil sampling protocols

1. Sampling

The samples will be collected from the auger tip, mattock, hand auger or excavator bucket immediately on withdrawal.

The time between retrieval of the sample and sealing of the sample container will be kept to a minimum.

The material will be collected using single use disposal gloves or a stainless-steel spade which represented material which has not been exposed to the atmosphere prior to sampling.

All sampling jars will be filled as close to the top as possible to minimise the available airspace within the jar.

2. Handling, containment and transport

Daily sampling activities will be recorded including sampling locations, numbers, observations, measurements, sampler, date and time and weather condition.

The sampling jars will be new sterile glass jars fitted with plastic lid and airtight Teflon seals, supplied by the laboratories for the purpose of collecting soil samples for analysis. Sample containers will be marked indelibly with the sample ID code to waterproof labels affixed to the body of the container.

All samples will be removed from direct sunlight as soon as possible after sampling and placed in insulated containers. Samples will be stored in a refrigerator at 4°C prior to transportation to the laboratory in insulated containers with ice bricks in accordance with AS4482.1.

Handling and transportation to the laboratory will be accompanied with a chain of custody form to demonstrate the specimens are properly received, documents, processed and stored.

Maximum holding time for extraction (AS4482.1) are:

Analyte	Maximum holding time
Metals	6 months
Mercury	28 days
Sulfate	7 days
Organic carbon	7 days
OCP, OPP, PCB	14 days
TRH, BTEX, PAH, phenols	14 days

3. Decontamination of sampling equipment

Sampling tools will be decontaminated between sampling locations by

- Removing soil adhering to the sampling equipment by scraping, brushing or wiping
- Washing with a phosphate-free detergent
- Rinsing thoroughly with clean water
- Repeating if necessary
- Collect rinsate per sampling time and preserve according to AS 2031.1
- Dry equipment with disposable towels or air

Appendix 5. Analytical results – heavy metals and pesticides

Table A5.1. General site analytical results and threshold concentrations - heavy metals (mg/kg)

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
CR1	3	<0.3	10	15	20	3.5	78	0.05
CR2	2	<0.3	9.6	11	11	2.5	21	<0.05
CR3	5	<0.3	8.2	17	30	1.7	14	<0.05
CR4	10	<0.3	5.3	16	48	0.9	17	<0.05
CR5	2	<0.3	5.5	27	9	1.9	30	<0.05
CR6	2	<0.3	17	18	9	2.4	25	<0.05
CR7	1	<0.3	7.8	10	6	1.6	11	<0.05
CR8	1	<0.3	7.7	4.7	6	1.2	9	<0.05
CR9	3	<0.3	6.4	14	12	1.5	17	<0.05
CR10	27	<0.3	9.4	31	83	1.7	13	<0.05
CR11	23	<0.3	8.9	27	60	1.7	14	<0.05
CR12	2	<0.3	18	16	10	4.0	140	<0.05
CR13	3	<0.3	15	10	15	4.7	46	<0.05
CR14	24	<0.3	9.8	41	100	2.2	14	<0.05
CR15	18	<0.3	7.5	37	93	1.7	14	<0.05
CR16	5	<0.3	5.9	15	21	1.1	8	<0.05
CR17	1	<0.3	4.9	7.9	6	0.9	9	<0.05
CR18	<1	<0.3	4.8	6.6	5	1.0	7	<0.05
CR19	<1	<0.3	6.1	8.1	5	1.3	13	<0.05
CR20	2	<0.3	8.2	8.6	7	1.5	13	<0.05
CR21	59	0.3	15	**110**	200	3.4	35	0.08
CR22	30	<0.3	16	56	110	4.0	18	<0.05
CR23	37	<0.3	11	77	130	4.0	26	0.06
CR24	3	<0.3	13	16	11	4.7	28	<0.05
CR25	26	<0.3	19	59	95	4.0	69	<0.05
CR26	25	<0.3	11	68	120	2.8	26	0.08
CR27	2	<0.3	12	24	11	3.9	18	<0.05
CR28	3	<0.3	17	18	11	4.4	24	<0.05
CR29	2	<0.3	22	11	12	5.0	110	<0.05
CR30	2	<0.3	10	16	10	3.4	16	<0.05
CR31	13	<0.3	13	22	44	3.1	20	<0.05
CR32	2	<0.3	11	12	8	3.4	20	<0.05
CR33	1	<0.3	8.6	14	8	2.6	20	<0.05
CR34	2	<0.3	16	21	9	4.6	20	<0.05
CR35	3	<0.3	24	26	12	5.8	27	<0.05
CR36	2	<0.3	12	24	7	2.8	20	<0.05
CR37	1	<0.3	9.6	16	6	1.7	12	<0.05
CR38	<1	<0.3	6.7	12	5	1.4	11	<0.05
CR39	2	<0.3	6.6	12	4	1.1	10	<0.05
CR40	2	<0.3	9.8	12	9	2.2	14	<0.05
CR41	2	<0.3	5.3	16	8	1.8	32	<0.05
CR42	1	<0.3	10	21	6	1.7	21	<0.05
CR43	1	<0.3	8.3	23	6	1.6	14	<0.05
CR44	2	<0.3	11	23	6	1.9	16	<0.05
CR45	1	<0.3	5.9	22	5	1.4	24	<0.05
CR46	2	<0.3	8.6	34	12	2.0	39	<0.05
CR47	1	<0.3	8.6	30	10	1.7	35	<0.05
CR48	2	<0.3	17	32	9	3.4	28	<0.05
CR49	2	<0.3	18	30	10	3.5	15	<0.05
CR50	2	<0.3	14	46	8	3.3	22	<0.05
CR51	2	<0.3	14	38	9	4.2	20	<0.05
CR52	1	<0.3	24	36	8	3.3	13	<0.05
CR53	1	<0.3	9.5	35	6	2.2	13	<0.05
CR54	1	<0.3	9.1	24	6	1.9	10	<0.05
CR55	3	<0.3	20	35	14	2.0	11	<0.05

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
CR56	7	<0.3	11	32	28	2.0	14	<0.05
CR57	24	<0.3	8.3	39	98	1.6	18	0.06
CR58	11	<0.3	6.9	37	43	1.8	18	<0.05
CR59	11	<0.3	8.3	45	48	1.8	20	<0.05
CR60	11	<0.3	10	49	49	1.9	21	0.05
CR61	2	<0.3	12	34	7	2.4	15	<0.05
CR62	2	<0.3	13	34	7	2.5	14	<0.05
CR63	2	<0.3	13	40	8	3.5	18	<0.05
CR64	3	<0.3	21	43	12	5.2	31	<0.05
CR65	2	<0.3	22	51	10	3.8	26	<0.05
CR66	1	<0.3	11	28	8	2.3	23	<0.05
CR67	3	<0.3	29	67	18	5.5	60	<0.05
CR68	2	<0.3	17	32	10	3.2	53	<0.05
CR69	3	<0.3	24	46	13	5.2	100	<0.05
CR70	5	<0.3	24	41	24	6.1	46	<0.05
CR71	3	<0.3	13	32	13	3.4	28	<0.05
CR72	3	<0.3	13	29	14	4.8	21	<0.05
CR73	2	<0.3	12	35	13	3.4	18	<0.05
CR74	3	<0.3	8.8	24	16	2.1	13	<0.05
CR75	2	<0.3	7.3	19	12	1.6	20	<0.05
CR76	2	<0.3	6.8	21	10	1.5	14	<0.05
CR77	3	<0.3	7.0	18	12	1.8	15	<0.05
CR78	6	<0.3	10	34	26	2.4	12	<0.05
CR79	5	<0.3	17	33	24	3.3	13	<0.05
CR80	4	<0.3	19	31	20	4.0	18	<0.05
CR81	6	<0.3	14	42	26	4.1	19	<0.05
CR82	5	<0.3	15	35	23	4.6	65	<0.05
CR83	8	<0.3	26	65	240	6.3	22	<0.05
CR84	6	<0.3	22	**130**	30	5.1	32	<0.05
CR85	7	<0.3	15	63	30	4.2	15	<0.05
CR86	6	<0.3	18	50	26	4.9	30	<0.05
CR87	4	<0.3	13	33	22	5.2	31	<0.05
CR88	5	<0.3	10	28	22	3.4	27	<0.05
CR89	3	<0.3	7.5	20	16	2.3	11	<0.05
CR90	2	<0.3	5.9	18	14	1.5	18	<0.05
CR91	<1	<0.3	6.8	12	12	2.2	98	<0.05
CR92	2	<0.3	11	9.5	11	3.3	24	<0.05
CR93	<1	<0.3	6.6	6.1	11	2.1	11	<0.05
CR94	<1	<0.3	6.4	6.5	11	1.8	11	<0.05
CR95	<1	<0.3	6.7	3.6	8	1.3	8	<0.05
CR96	<1	<0.3	5.9	5.1	8	1.7	24	<0.05
CR97	<1	<0.3	5.9	3.5	8	1.3	12	<0.05
CR98	<1	<0.3	7.6	7.7	8	2.1	21	<0.05
CR99	<1	<0.3	6.9	3.8	8	1.4	14	<0.05
CR100	<1	<0.3	6.1	3.1	6	1.2	10	<0.05
CR101	1	<0.3	5.2	4.1	6	1.1	16	<0.05
CR102	1	<0.3	7.4	3.8	6	1.4	11	<0.05
CR103	1	<0.3	8.5	6.8	8	2.9	11	<0.05
CR104	<1	<0.3	7.6	5.7	7	1.8	8.4	0.05
CR105	2	<0.3	10	15	12	2.2	13	<0.05
CR106	2	<0.3	9.5	12	17	2.9	60	<0.05
CR107	62	0.4	18	**120**	220	3.3	41	<0.05
CR108	1	<0.3	5.9	15	9	1.7	22	<0.05
CR109	1	<0.3	13	45	8	3.0	14	<0.05
CR110	7	<0.3	15	60	30	4.3	13	<0.05
CR111	<1	<0.3	5.4	2.7	7	1.2	11	<0.05
CR112	<1	<0.3	6.2	4.3	6	1.3	12	<0.05

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury
CR113	2	<0.3	9.6	17	61	8.7	97	<0.05
CR114	4	0.8	10	50	37	3.7	**510**	<0.05
CR115	10	<0.3	20	69	15	5.1	97	<0.05
CR116	3	<0.3	13	20	51	3.4	**480**	<0.05
CR117	<1	<0.3	6.3	16	19	2.4	**250**	<0.05
CR118	1	<0.3	6.5	3.3	8	1.3	13	<0.05
CR119	<1	<0.3	5.5	2.9	8	1.1	11	<0.05
CR120	<1	<0.3	5.5	3.2	10	1.3	6.9	<0.05
CR121	<1	<0.3	6.0	5.0	9	1.9	12	<0.05
CR122	<1	<0.3	5.5	5.8	8	2.0	10	<0.05
Arithmetic mean	5.48	0.30	11.34	27.36	25.79	2.77	34.76	0.05
Standard deviation	9.77	0.05	5.42	22.66	39.98	1.43	67.08	0.00
Maximum	62.00	0.80	29.00	130.00	240.00	8.70	510.00	0.08
Median	2.00	0.30	9.90	22.00	11.00	2.30	18.00	0.05
Confidence interval	1.73	0.01	0.96	4.02	7.09	0.25	11.90	0.00
95% UCL	7.22	0.31	12.30	31.38	32.88	3.03	46.67	0.05
Number	122	122	122	122	122	122	122	122
Health Investigation Levels – Residential land-use threshold (NEPC 1999)								
	100	*20*	*100[1]*	*6,000*	*300*	*400*	*7,400*	*40*
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)								
	100	*-*	*290[2]*	*95*	*1,100*	*25*	*200*	*-*

[1] Threshold for Chromium (VI), [2] Threshold for Chromium (III)

Statistical analysis assumes the value of non-detects are equal to the detection limit. This is considered a conservative approach.

Table A5.2. General site analytical results and threshold concentrations - OCP (mg/kg)

Sample ID	OCP	DDs	DDT
CR4	<1	<0.1	<0.1
CR8	<1	<0.1	<0.1
CR12	<1	<0.1	<0.1
CR16	<1	<0.1	<0.1
CR20	<1	<0.1	<0.1
CR24	<1	<0.1	<0.1
CR28	<1	<0.1	<0.1
CR32	<1	<0.1	<0.1
CR36	<1	<0.1	<0.1
CR40	<1	<0.1	<0.1
CR44	<1	<0.1	<0.1
CR48	<1	0.3	<0.1
CR52	<1	<0.1	<0.1
CR56	<1	<0.1	<0.1
CR60	<1	0.2	<0.1
CR64	<1	<0.1	<0.1
CR68	<1	0.4	<0.1
CR72	<1	<0.1	<0.1
CR76	<1	0.3	<0.1
CR80	<1	<0.1	<0.1
CR84	<1	<0.1	<0.1
CR88	<1	<0.1	<0.1
CR92	<1	<0.1	<0.1
CR96	<1	<0.1	<0.1
CR100	<1	<0.1	<0.1
CR104	<1	<0.1	<0.1
CR108	<1	<0.1	<0.1
CR112	<1	<0.1	<0.1
CR116	<1	<0.1	<0.1
CR120	<1	<0.1	<0.1
Arithmetic mean	1.00	0.13	0.10
Standard deviation	0.00	0.07	0.00
Maximum	1.00	0.03	0.00
Median	1.00	0.15	0.10
Confidence interval	0.00	0.03	0.00
95% UCL	1.00	0.15	0.10
Number	30	30	30
Health Investigation Levels – Residential land-use threshold (NEPC 1999)			
	-	*240*	-
Ecological Investigation Levels – Residential land-use threshold (NEPC 1999)			
	-	-	*180*

Statistical analysis assumes the value of non-detects are equal to the detection limit. This is considered a conservative approach

Appendix 6. EW Testing Services laboratory report

Envirowest Consulting Pty Ltd ABN 18 103 955 246 trading as
EW Testing Services
• 9 Cameron Place, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •
• Email admin@envirowest.net.au • Web www.envirowest.net.au •

Environmental
Geotechnical
Asbestos
Services

ASBESTOS IDENTIFICATION REPORT

Client	Fenlor	Report number	LR15156id
Contact	Dave Fenton		
Address	1 Borrodell Drive Orange NSW 2800	Date	03 February 2023

Site location	277 Cargo Road Orange NSW, 2800
Sampled by	Greg Madafiglio
Date received	30 January 2023
Date tested	03 February 2023
Test method	Identification using polarized light microscopy with dispersion staining in accordance with *Method for the qualitative identification of asbestos in bulk samples* (AS4964-2004) and EW Testing Services in-house method TA2.

Sample ID	Location	Description	Results
15156-1	Packing shed	7g Floor lining	
		(A) Vinyl sheet	(A) No asbestos detected *
		(B) Woven product	(B) No asbestos detected Organic fibres present
		(C) Bituminous membrane	(C) No asbestos detected. * Organic fibres present

Comments:
* Trace analysis performed.
- Sample ID 15156-1/C - fibrous

Sampling: NATA accreditation does not cover the performance of this service
This report shall not be reproduced except in full without written permission of EW Testing Services.

[redacted]

Carmen King
Approved asbestos analyst

NATA

Accredited for compliance with
ISO/IEC 17025 – Testing
Accreditation number: 19800

Appendix 7. Borelogs

Envirowest Consulting

9 Cameron Place Orange NSW

Phone: 02 6361 4954

Engineering Log - Borehole

Borehole No: BH1

UTM	: 55H	Driller Rig	: Eziprobe Landcruiser	Job Number	: 15156
Easting	: 691686.2	Driller Supplier	: Envirowest Consulting	Client	: Fenlor
Northing	: 6315148.3	Logged By	: Felipe Canavez	Project	: UPSS Assessment
RL	: N/A	Reviewed By	:	Location	: 277 Cargo Road, Orange NSW
Total Depth	: 2m	Date	: 02/02/2023		

Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Samples	Testing	Remark
					Disturbed sample	PID	
0	Topsoil		CL	Topsoil sandy SILT (CL) : firm, non-plastic, brown, fine grained sand, with fine to medium sized gravel, trace low plasticity clay, inorganic, w < pl.			No hydrocarbon odour
0.4	Natural		CL	Natural silty CLAY (CL) : firm, low plasticity, dark reddish brown, with fine sized gravel, trace fine grained sand, w < pl.			
0.5						1.3	
1	Natural		CL-CI	Natural silty CLAY (CL-CI) : firm to stiff, low to medium plasticity, dark red, trace fine sized gravel, w < pl.			
1.5					BH1(2000)	6.5	
2				**BH1 Terminated at 2m (Target depth)**			
2.5							
3							

Envirowest Consulting

9 Cameron Place Orange NSW

Phone: 02 6361 4954

Engineering Log - Borehole

Borehole No: BH2

UTM	: 55H	Driller Rig	: Eziprobe Landcruiser	Job Number	: 15156
Easting	: 691690.2	Driller Supplier	: Envirowest Consulting	Client	: Fenlor
Northing	: 6315143.7	Logged By	: Felipe Canavez	Project	: UPSS Assessment
RL	: N/A	Reviewed By	:	Location	: 277 Cargo Road, Orange NSW
Total Depth	: 2m	Date	: 01/02/2023		

Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Samples	Testing	Remark
					Disturbed sample	PID	
0	Topsoil		CL	Topsoil sandy SILT (CL) : firm, non-plastic, very dark brown brown, fine grained sand, with fine to medium sized gravel, trace low plasticity clay, inorganic, w < pl.			No hydrocarbon odour
0.5	Natural		CL	Natural silty CLAY (CL) : firm, low plasticity, dark reddish brown, with fine sized gravel, trace fine grained sand, w < pl.		2.1	
1.2	Natural		CL-CI	Natural silty CLAY (CL-CI) : firm to stiff, low to medium plasticity, dark red, trace fine sized gravel, w < pl.	BH2(2000)	4.5	
2				**BH2 Terminated at 2m (Target depth)**			

Envirowest Consulting

9 Cameron Place Orange NSW

Phone: 02 6361 4954

Engineering Log - Borehole

Borehole No: BH3

UTM	: 55H	Driller Rig	: Eziprobe Landcruiser	Job Number	: 15156
Easting	: 691684.9988909683	Driller Supplier	: Envirowest Consulting	Client	: Fenlor
Northing	: 6315141.572145873	Logged By	: Felipe Canavez	Project	: UPSS Assessment
RL	: N/A	Reviewed By	:	Location	: 277 Cargo Road, Orange NSW
Total Depth	: 2m	Date	: 01/02/2023		

Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Samples	Testing	Remark
					Disturbed sample	PID	
0	Topsoil		CL	Topsoil sandy SILT (CL) : firm, non-plastic, very dark brown brown, fine grained sand, with fine to medium sized gravel, trace low plasticity clay, inorganic, w < pl.			No hydrocarbon odour
0.4	Natural		CL	Natural silty CLAY (CL) : firm, low plasticity, dark reddish brown, with fine sized gravel, trace fine grained sand, w < pl.			
0.5						0	
1							
1.2	Natural		CL-CI	Natural silty CLAY (CL-CI) : firm to stiff, low to medium plasticity, dark red, trace fine sized gravel, w < pl.			
1.5							
					BH3(2000)	0.9	
2				**BH3 Terminated at 2m (Target depth)**			
2.5							
3							

Appendix 8. Unidentified finds procedure

Unidentified finds procedure

1. Introduction

Residential land-use is proposed for 277 Cargo Road, Orange NSW.

A procedure is required describing the actions if potential contamination or hazards are encountered during demolition / soil disturbance / subdivision / excavation / construction activities.

2. Scope

Prepare a procedure to enable the identification and management of unexpected hazards identified during excavation works and/or construction activities.

3. Site identification

Lot A DP408148, 277 Cargo Road, Orange NSW.

4. Responsible person

The landowner / site supervisor is responsible for implementation of the unexpected finds protocol. The landowner will appoint an environmental scientist to induct and provide information on hazard identification and responses to earthwork supervisors and personnel which may uncover unexpected hazards.

5. Identification of unexpected hazards

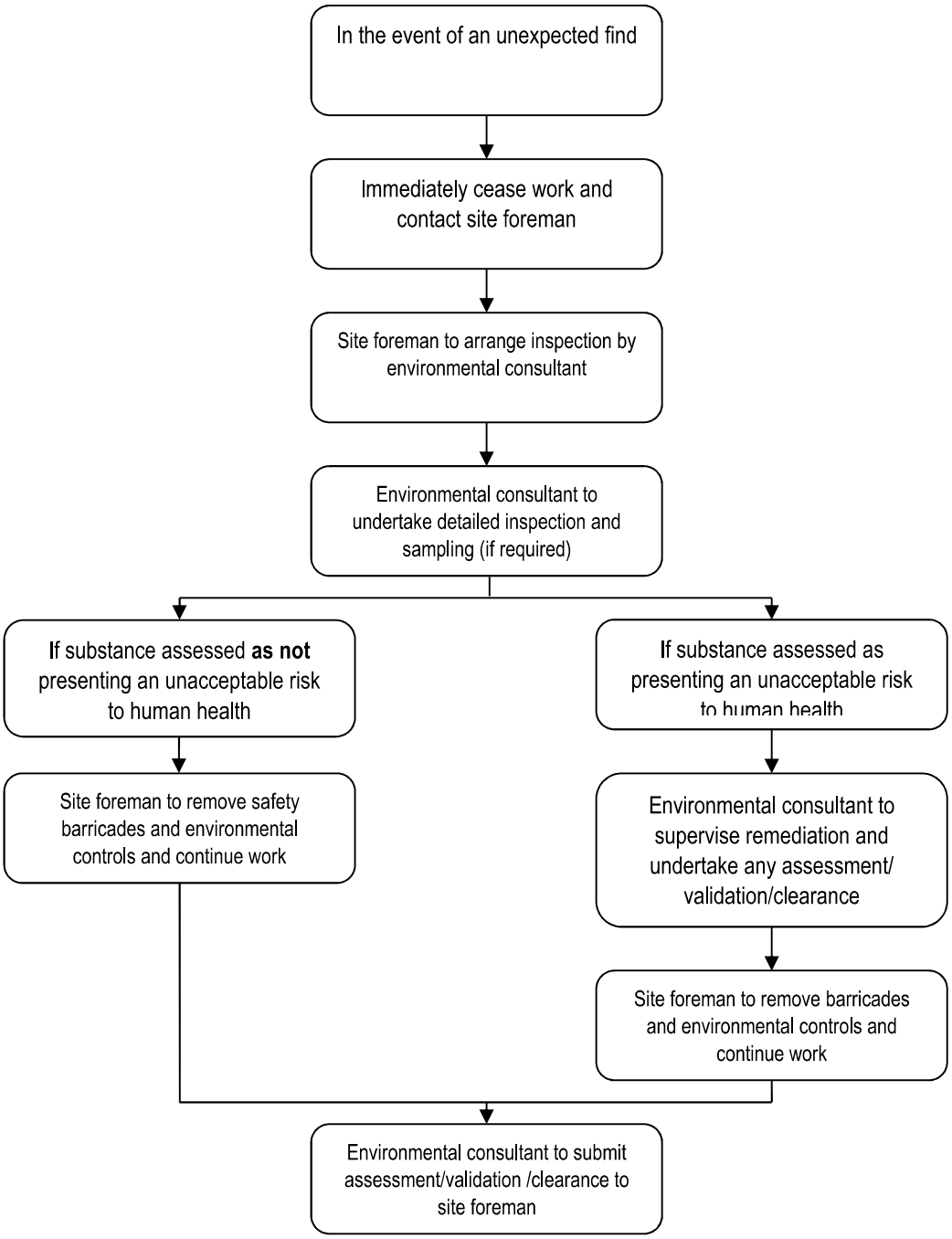
Potential hazards will be identified by appearance and odour include:

- A filled pit or gully
- Demolition waste
- Discoloured soil
- Oil/diesel/tar
- Sheens on water
- An offensive odour
- Asbestos cement sheeting
- Ash or slag
- Underground storage tank

6. Training and induction

All excavation/construction personnel are to be inducted on the identification of potential hazards. The induction can be undertaken at the time of general site induction and toolbox meetings. The training will include display of information to alert worker of potential hazards.

7. Procedure



8. Recommencement of works

The potential hazards will be assessed by the environmental scientist and a report prepared describing:

- Preliminary assessment of the contamination and need for clean-up
- Preparation of a remediation action plan
- All works to be undertaken in accordance with contaminated site regulations and guidelines
- Remediation works
- Validation of the remediation
- Works can commence on the potentially hazardous area after the environmental scientist has provided a clearance.

Information to assist workers in identifying hazards.

BE AWARE

UNEXPECTED HAZARDS MAY BE PRESENT

drums

asbestos

chemical bottles

blood stains

odour

ash / slag

demolition waste

if you <u>SEE</u> or <u>SMELL</u> anything unusual

<u>STOP WORK</u> & contact the Site Foreman

do not restart working before the area has been investigated and cleared by an Environmental Consultant