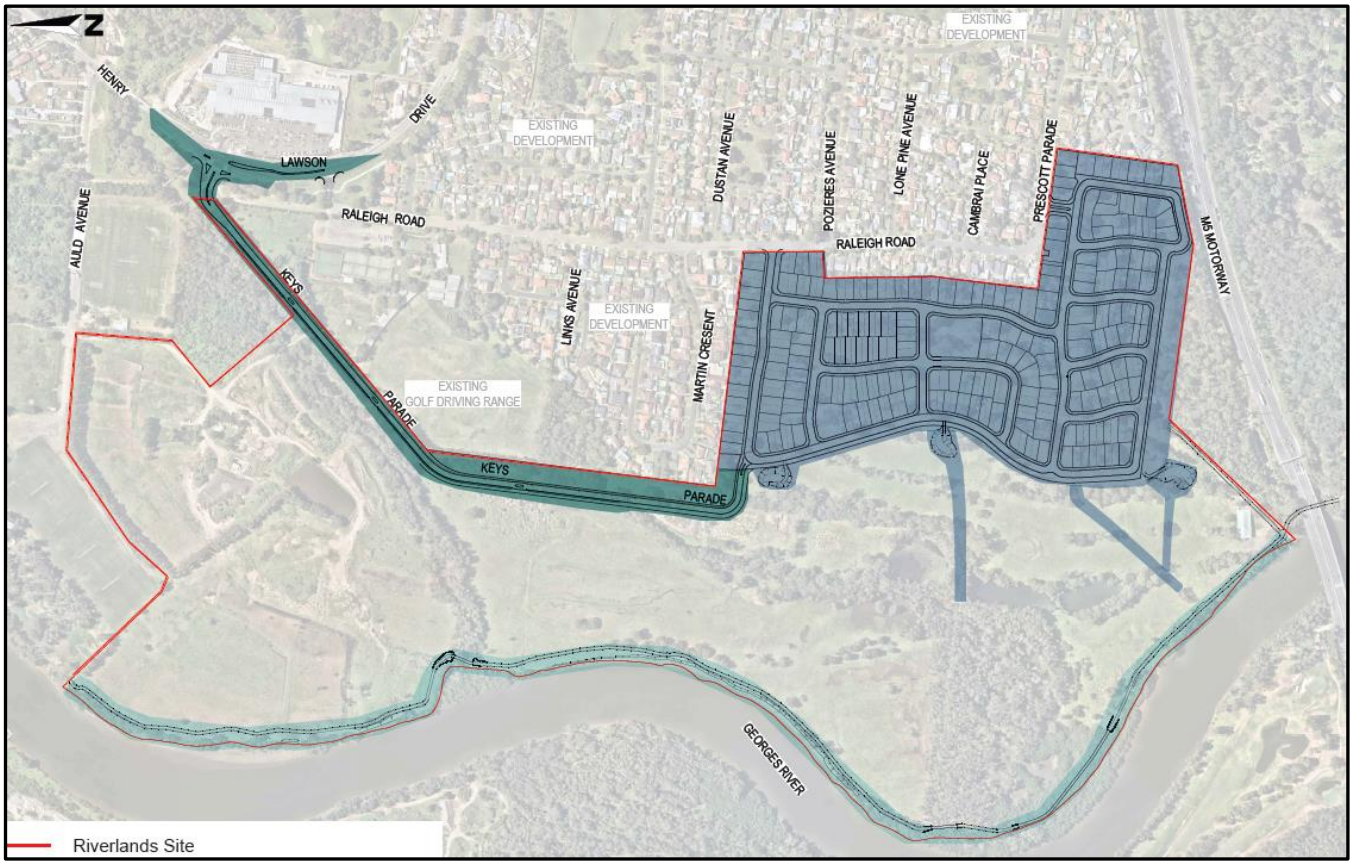

Contamination Assessment of Proposed Development Lands
Riverlands New Residential Project, Milperra NSW

01 JULY 2021

Prepared for:

Mirvac Homes (NSW) Pty Ltd

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Executive Summary

Mirvac Homes (NSW) Pty Ltd (Mirvac) engaged Sullivan Environmental Sciences (Sullivan-ES) to conduct a Contamination Assessment of proposed development land known as the Riverlands New Residential Project in Milperra NSW; henceforth referred to as 'the site'. The site comprises the following three distinct areas:

1. Residential Estate - part Lot 10 in DP731859.
2. Keys Parade – part Lot 1 in DP813006, part Lot 232 in DP805826 and part Lot 1 in DP625013,
3. Foreshore - part Lot 10 in DP731859, part Lot 21 in DP749985, part Lot 1 in DP813007, and part Lots 23, 24, 25, 26, 27 in DP7304.

The site is located off Prescot Parade, Milperra NSW and was historically used predominately as part of Riverlands golf course and commercial landscaping supply activities.

The proposed development includes subdivision of land for residential lots and consolidation of other areas, as well as provision of parkland, associated bulk earthworks, road construction works, tree clearing, foreshore bank stabilisation, soil remediation works, construction and installation of stormwater, sewerage and other utility services.

The site is subject to a statutory site audit under the Contaminated Land Management Act 1997 (NSW). A NSW EPA accredited Site Auditor has been engaged to perform the audit work and thereafter issue a Site Audit Statement (SAS) concluding that the site is suitable for the proposed uses.

This report has been prepared for the purposes of clause 7 of State Environmental Planning Policy No 55—Remediation of Land (SEPP 55) and constitutes the findings of a detailed investigation of land and subsequent findings of additional investigations. The work has been carried out in accordance with SEPP55 Planning Guidelines. The objectives of the Contamination Assessment were to appraise the site's history, characterise the nature of contamination within the proposed development lands with up-to-date sampling results in addition to existing information, and thereafter assess the suitability of the proposed development lands under their proposed future uses as either low density residential, or recreational open space public land. Our objective was to also provide conclusions and recommendations to update existing remedial approaches for each of the three proposed development areas.

The scope of work included a review of background documents, a detailed inspection of development lands, sampling and analysis of soils for a suite of contaminants, and preparation of a contamination report in general accordance with State and Federal reporting guidelines.

In accordance with SEPP 55, the following issues were considered as part of this investigation of land:

- Whether the information about the site's history is adequate.
- Whether the information available conforms with the relevant EPA guidelines, including *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land (SEPP 55 Planning Guidelines*).
- Whether contamination or a contaminating activity (previous or existing) is confirmed and whether the proponent conducted a detailed investigation to further define the extent and degree of contamination.
- Where the site history suggests that the site (or certain areas) is unlikely to be contaminated but there are gaps in the historical information relating to use of the site for a purpose described in

Table 1 of the SEPP 55 Planning Guidelines, whether other uses were permissible under the zoning during historical periods.

- Whether limited site sampling was needed to confirm the site is not contaminated and whether consultation with a site auditor is necessary.
- Whether this site poses a significant threat to human health or the environment.
- Whether a site audit of the detailed investigation was necessary.
- If there is sufficient information to satisfy the planning authority that the site is suitable for the proposed use, the planning process should proceed in the normal way.

The following conclusions and recommendations are made based on the analytical data and field observations resulting from this assessment and previous reports, subject to the limitations presented in Section 10.

Residential Estate

The Residential Estate site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). Detailed investigations conducted across the proposed Residential Estate has sufficiently characterised soil and groundwater to assess the land for low-density residential land use. We conclude that:

- Environmental Strategies Phase 2 (ES, 2014b) showed that soils at a localised area of the site at BH17 were impacted by oils (hydrocarbons) posing a potential health risk to future users of the site. It is recommended the localised soils at BH17 be removed, the aboveground storage tanks be decommissioned and removed and soils underneath this area validated. It is also recommended any identified fragments of potential asbestos containing materials (ACMs) should also be collected from the ground surface and removed.
- Site soils exhibiting discolouration, abnormal consistency (wastes, ash and slag fill) present an aesthetic issue requiring remediation and or management as part of the remediation of the Residential Estate site. Soils requiring remediation for aesthetic considerations include:
    - The soils under the golf greens in northeast corner of the site delineated by test pits TP10, TP11, TP12 and previous location BH5B (ES, 2014b) contain buried ash/slag wastes.
    - The soils under the golf greens in the south east corner of the site, delineated by test pits TP41, TP42, TP43 and TP44, contain buried ash/slag wastes.
    - Two additional areas contain minor amounts of ash/slag fill at TP14 (former chemical sheds) and TP49 (entrance road off Prescot Parade).
    - A small fill mound with mixed anthropogenic waste was located at TP27.
- Detections of pesticides in a localised area near the existing chemical store adjoining the Greenkeepers Shed have been observed. The RAP for the Residential Estate will describe the testing requirements and potential remediation and validation testing to cover off this item.
- Items raised by the Site Auditor in Interim Advice (dated 15 Sept 2019) requiring closeout will be presented in the updated Residential Estate RAP including:
    - "*Remove and remediate the septic tank system at the greenkeepers/maintenance shed"*.
- The proposed Residential Estate development land is suitable for future residential dwellings, subject to implementing the existing Residential Estate RAP (1 July 2021) to cover the following items:
    - Remediation of petroleum impacts in surface soils at BH17 (ES, 2014b).

- Decommissioning and removing the two ASTs and fuel bowser.
- Decommissioning and removing the sewerage tank system.
- Removal of all abandoned buried services.
- Management of ash/slag wastes buried under the two identified golf greens.
- Management of anthropogenic waste buried in a localised stockpile at TP27, and other smaller quantities of ash/slag buried at TP14 and TP49.
- Verification sampling for the presence of pesticides near the existing chemical store.
- Any other items raised in the Site Auditors Interim Advice (15 Sept 2019).

Keys Parade

The Keys Parade site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). Detailed investigations conducted across the proposed Keys Parade has sufficiently characterised soil and groundwater to assess the land for open space land use consistent with a public road corridor. We conclude that:

- Ash filling greater than 0.5m is present along the length of the embankment in the Keys Parade area delineated by B15A, B18A, B20A, B22A, B24A and B25A. The ash fill is present as thick, black and grey layers of cinders and some slags. The ash and slag pose an aesthetic risk requiring remediation to be suitable for the future open space landuse. These soils require removal offsite or amelioration to improve its appearance and geotechnical suitability if it is to be retained onsite and used in the subsurfaces.
- Non-bonded asbestos was reported within the ash fill associated with sample location B18A. The non-bonded asbestos containing ash fill requires remediation to remove the potential health risk to future occupants of the proposed development. The non-bonded asbestos impacts at B18A should be further assessed to define the vertical and lateral extent of the impacts prior to remediating these soils.
- Anthropogenic wastes, in the form of plastic, bricks, bitumen and timber, was observed within the Keys Parade embankment at locations KP01 and KP03. The presence of anthropogenic wastes at these locations pose an aesthetic issue requiring removal offsite.
- Keys Parade sampling locations KP05, KP06 and KP07 were positioned within an area of multiple small soil stockpiles. A large fragment of cement fibro sheeting containing bonded asbestos was identified at KP05. The stockpiles require characterisation for reuse onsite or for disposal offsite. The presence of bonded and or non-bonded asbestos in this area must be considered for all the mounds during remediation of Keys Parade development.
- The proposed Keys Parade development land is suitable as a future roadway and footpath construction (under an open space public land use), subject to implementing the existing Keys Parade RAP (1 July 2021) to cover the following items:
    - Remediation of asbestos contaminated ash/slag wastes buried at B18A (Sullivan-ES, 2018).
    - Management of ash/slag/anthropogenic waste filling used to construct the embankment at the south end of the proposed Keys Parade alignment.
    - Soil stockpiles present in the central portion of the proposed Keys Parade could contain fragments of bonded asbestos sheeting in addition to the fragment already identified. Management of the soil stockpiles is required during removal or reuse of these materials.

Foreshore

The Foreshore site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). While past and present investigations of the Foreshore provide an adequate level of characterisation to assess contamination risks, there are human and ecological health risks related to wastes used as landfilling along the Foreshore. Due to the presence of the sensitive ecology (e.g. No-Go zones such as mangroves, protected trees, sensitive terrestrial and aquatic organisms, etc) in the Foreshore land, the recommended remediation should target only those accessible areas where there is potential health risk from chemical contamination and or aesthetic issues requiring remediation due to gross anthropogenic materials/wastes. The remediation strategy is to be considerate of removing contamination to the extent practicable while preserving the sensitive environment within the Foreshore. A number of options will be proposed to satisfy this goal.

Of specific concern are the landfill wastes present at FP10 (and proximal to that location) containing concentrations of PCB and non-bonded forms of asbestos. Other locations including FP05 and FP11 contain similar landfill wastes (and detectable residues of asbestos (FP05) and PCB (FP11)). These areas are considered areas of concern for human and ecological health based on the presence of these wastes alone.

Detectable residues of PCBs were also reported at FP13, FP14 and FP15 in Area 2 of the Foreshore which adds to the level of risk. While not considered particularly deep, the depth of wastes used as landfilling has not been determined, specifically at areas of high contamination risk at FP05, FP10 and FP11.

It should be noted that soil materials containing concentrations of PCBs at levels greater than 2mg/kg are subject to regulation under the Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 (PCB CCO 1997). The PCB CCO 1997 sets out the requirements for:

- defining non-scheduled and scheduled PCB materials and wastes (Clauses 4.25 and 4.26);
- defining priority areas (Clause 4.23);
- conveying of PCB material and PCB waste (Clause 6.4); and
- disposing of PCB waste (Clause 6.5).

Based on the concentration of PCB at location FP10 and the expected very shallow depth to groundwater along the Foreshore zone leaching to the immediate underlying groundwater was considered a plausible risk. We conducted neutral leaching analysis at this location. Results showed the PCB at this location did not leach under a neutral deionised water solution (to emulate rainfall), being less than the laboratory detection (<1.0 µg/L). This indicates there is a low risk of PCBs migrating from the Foreshore waste into the underlying watertable and then discharging into the adjoing Georges River aquatic ecosystem.

We conclude that existing data demonstrates that remediation to clean up contamination on the Foreshore is necessary because the presence of landfilling wastes and associated contamination poses ahigh health risk in localised areas to human and ecological health, although additional work would be required to delineate the extent of remediation required.

- Based on existing information, the proposed Foreshore development land is suitable for future open space public land use, subject to implementing the existing Foreshore RAP (1 July 2021) to cover the following items:

- To the extent practicable, delineate contaminated wastes in both Areas 1 and 2, as well as other accessible locations along the Foreshore, to ascertain the full extent of landfilling of wastes.
- In consideration of sensitive ecological receptors, and to the extent practicable so as not to cause irreversible damage to those receptors, remediate contaminated wastes used as landfilling in Area 1 and Area 2. These wastes contain concentrations of asbestos, heavy metals and PCBs at levels that pose a human and ecological health risk.
- Management of anthropogenic waste strewn across and protruding from ground surfaces to remove the aesthetic impacts to the Foreshore. In particular, wastes and general refuse that has washed up from Georges River accumulating within low lying swampy areas.

1 Introduction

Mirvac Homes (NSW) Pty Ltd (Mirvac) engaged Sullivan Environmental Sciences (Sullivan-ES) to conduct a Contamination Assessment of proposed development land known as the Riverlands New Residential Project in Milperra NSW; henceforth referred to as 'the site'. The site comprises the following three distinct areas:

1. Residential Estate - part Lot 10 in DP731859.
2. Keys Parade – part Lot 1 in DP813006, part Lot 232 in DP805826 and part Lot 1 in DP625013,
3. Foreshore - part Lot 10 in DP731859, part Lot 21 in DP749985, part Lot 1 in DP813007, and part Lots 23, 24, 25, 26, 27 in DP7304.

A site locality map and proposed development lands are shown on figures in **Appendix A**.

The site is located off Prescot Parade, Milperra NSW and was historically used predominately as part of Riverlands golf course and commercial landscaping supply activities.

The proposed development includes subdivision of land for residential lots and consolidation of other areas, as well as provision of parkland, associated bulk earthworks, road construction works, tree clearing, foreshore stabilisation, soil remediation works at specific locations within the Residential Estate, Keys Parade and Foreshore Area and installation of stormwater, sewerage and other utility services.

The site is subject to a statutory site audit under the Contaminated Land Management Act 1997 (NSW). A NSW EPA accredited Site Auditor has been engaged to perform the audit work and thereafter issue a Site Audit Statement (SAS) concluding that the site is suitable for the proposed uses.

1.1 Objectives

This Contamination Assessment is prepared for the purposes of clause 7 of SEPP 55 and constitutes the findings of a detailed investigation of land and subsequent findings of additional investigations. The work has been carried out in accordance with SEPP55 Planning Guidelines.

The objectives of the contamination assessment were to appraise the site's history, characterise the nature of contamination within the proposed development lands with up-to-date sampling results in addition to existing information (refer to section 2.3), and thereafter assess the suitability of the proposed development lands under their proposed future uses as either low density residential, or recreational open space public land.

Subject to the findings of this assessment, our objective was to also provide conclusions and recommendations to update existing remedial approaches (refer to section 2.4) for each of the three proposed development areas.

1.2 Scope of Work

The scope of work for the Contamination Assessment consisted of:

- Reviewing all previous documents and contamination reports relevant to the development lands.
- Preparing an WHS work plan for all field-based work to be performed at the site.
- Mobilise to the site and conduct clearance of underground utilities using Dial Before You Dig plans and a Telstra accredited pipe locating subcontractor, to clear and confirm soil sampling locations.

- Using a backhoe machine, collect soil samples at nominated locations within the proposed development land areas on a systematic sampling pattern, primarily targeting filling materials.
- Dispatch collected samples for chemical analysis by a NATA accredited laboratory on a range of chemicals of potential concern.
- Preparing a Contamination Assessment report in consideration of contaminated land guidelines made or approved by NSW EPA under the Contaminated Land Management Act (NSW), the NSW EPA Site Auditor engaged for the project, Interim Advice (dated 15 Sept 2019) and SEPP55.

1.3 Regulatory Framework

The Contamination Assessment was conducted in consideration of the following regulatory framework and guideline documents:

- Contaminated Land Management Act 1997 (CLM Act).
- State Environmental Planning Policy No.55 – Remediation of Land 1998 (SEPP55).
- Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land.
- National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013).
- Contaminated Land Guidelines: Consultants Reporting on Contaminated Land, 2020 (NSW EPA 2020)
- Sampling Design Guidelines, 1995 (NSW EPA 1995).
- Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017 (NSW EPA 2017).

1.4 Consultant's Competency and Certification

All contamination assessment work and reporting was conducted by the professionally trained team at Sullivan-ES.

Our Principal Scientist (Adam Sullivan) is a qualified professional with over 20 years' experience in contaminated land assessment and remediation. Adam has achieved tertiary qualifications in Soil Science and Environmental Law. He is also a certified Site Contamination Specialist (CenvP-SC) (Certification # SC40944) under the EIANZ Certified Environmental Practitioner Scheme (www.cenvp.org). Adam Sullivan has reviewed and approved this report in the capacity as a CenvP-SC.

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2 Site Information

2.1 Site Identification

The following identifies the proposed development areas in the Local Government Area of the City of Canterbury Bankstown Council:

- Residential Estate – part Lot 10 in DP731859 and zoned R2 Low Density Residential (Bankstown Local Environmental Plan 2015).
- Keys Parade – part Lot 1 in DP813006, part Lot 232 in DP805826 and part Lot 1 in DP625013, and zoned RE2 Private Recreation (Bankstown Local Environmental Plan 2015).
- Foreshore – part Lot 10 in DP731859, part Lot 21 in DP749985, part Lot 1 in DP813007, and part Lots 23, 24, 25, 26, 27 in DP7304, and zoned RE1 Public Recreation (Bankstown Local Environmental Plan 2015).

2.2 Site Features and Environmental Setting

The current layout of each proposed development area is shown on the figures presented in **Appendix A**.

Residential Estate

- The Residential Estate is located within the grounds of the former golf course including, greens, tees, fairways and sand bunkers and generally open space turfed land. The former Clubhouse is located approximately 200m offsite to the southwest.
- Entry is gained through the main gates off Prescot Parade in the eastern corner of the site. An internal access road consisting a two-coat bitumen sealed surface runs from the main gate down the eastern boundary, along the southern boundary bordering the M5 Motorway, past two sheds then south to the old Clubhouse (offsite).
- Two sheds are present, identified as the greenkeepers/maintenance sheds, that are constructed predominately of sheet metal and a concrete slab floor.
- An underground septic tank exists adjoining the southern side of the sheds.
- Two ASTs and dispenser bowser are present. The ASTs have a combined capacity of approximately 1,000L and are bunded.
- A small shed off the larger maintenance shed is a chemical store, with chemical residues on a table and the floor.
- A small area of concrete slab foundations and brickwork was identified in the area suspected to be the former greenkeepers/maintenance shed.

Keys Parade

- Keys Parade is accessed off Martin Crescent and is a former landscape supplier operation, now used as a central base for the farming tenant for cattle agistment across the Riverlands site.
- A single-storey house occupies the area along with a few sheds and farming equipment.
- A sealed driveway runs from the entry gates off Martin Crescent round the house then down to the lower lying grasslands.
- An open area is used to store equipment of various nature such as scaffolding, mechanical parts, metal fencing and sheets, old cars, gates, trailers, and other equipment for farming or construction work.

- The area is relatively flat. The western edge of the area is characterised by a 3-4m embankment down to a drainage gully then flat open grasslands used for cattle grazing.
- A chain wire fence runs along the top of the embankment.
- The northern end of the access driveway slopes down to the north then links up with the low-lying grasslands area. Keys Parade road alignment follows the existing bitumen sealed internal access road heading north adjoining the neighbouring golf range complex. The road bends off to the east in a straight line out towards the proposed new intersection with Henry Lawson Drive.

Foreshore

- The foreshore runs the entire length of Georges River, limited at the northern and southern extents by the existing property boundaries. For the purposes of the proposed development and subdivision, the Foreshore is defined as 20 lineal metres inland from the western cadastral boundary of the following Deposited Plans part Lot 10 in DP731859, part Lot 21 in DP749985, part Lot 1 in DP813007, and part Lots 23, 24, 25, 26, 27 in DP7304..
- Area 1 and Area 2 (Figure 7) identify the two separate areas subject to sampling under this Assessment.
- Area 1 at the southern end of the Foreshore consisted of various mounds and irregular surfaces indicating stockpiling and landfilling. These materials were observed extending up to the north of Area 1 into the heavily vegetated and mangrove areas.
- Area 2 is characterised by a stretch of land cleared of trees and scrub vegetation with a grass covering. Clearing in the northern half of Area 2 is set back from the Foreshore embankment by a stand of trees. D.K. May 2016 reported that at inspection pit D16 proximal to the foreshore area *"…natural subsurface soils were overlain by building demolition rubble, in which AC[1] chips were evident."*

2.2.1 Surrounding Land

The lands surrounding the proposed development areas is represented by the overall property boundaries as shown on Figure 1 (**Appendix A**) and subsequent figures specific for the three development areas. In general, land uses surrounding the development include:

- **North** –Commercially run facility for materials management/stockpiling (this is a separate north portion of the Riverlands property), open space parks/recreational areas, and residential properties of Milperra.
- **East** – Predominately residential properties of Milperra off the Residential Estate and Keys Parade, while east of the Foreshore is the remaining parts of the former Riverlands golf course and the commercial facility (same as north surrounding land).
- **South** – South Western Motorway (M5) as well as residual englobo land/bush reserve.
- **West** – Off the Residential Estate and Keys Parade are the remaining parts of the former Riverlands golf course and the commercial facility (same as north surrounding land), while west of the Foreshore is Georges River

2.2.2 Topography

The Residential Estate is relatively flat across the southern portion with a gentle fall to the west. The northern and central portions fall moderately to the west and south west. Several ephemeral creeks and

[1] AC – asbestos cement.

drainage channels are present on the site, all surface water appears to drain in a westerly direction, discharging into storage dams to the west of this area then on to Georges River.

Keys Parade is relatively flat across the southern and northern sections. A steep embankment slopes down to the adjoining pasture lands/flood plains to the west.

The Foreshore is a narrow strip of land that adjoins Georges River. It is expected that the Foreshore land becomes inundated and submerged by tidal changes at various times throughout the year.

2.2.3 Geology

In accordance with NSW Govt eSPADE[2] (Planning, Industry and Environment), the western portion of the Residential Estate, Keys Parade and the Foreshore overlie a Richmond soil landscape characterised by relatively flat, Quaternary terraces of Nepean and Georges River. Soils are typically poorly structured orange to red clay loams, clay and sands. Texture may increase with depth. Ironstone nodules may be present.

The eastern portion of the Residential Estate overlies a Blacktown soil landscape characterised by gently undulating rises on Wianamatta Group shales. Soils are typically shallow to moderately deep, hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and drainage lines.

2.2.4 Groundwater

In accordance with NSW Govt eSPADE, the development lands are situated within Parramatta/Georges River and the Moorebank Hydrological Landscapes and are characterised by the following traits:

Parramatta/Georges River Hydrological Landscapes

The Parramatta/Georges River Hydrogeological Landscape is characterised by the low-lying Quaternary and Tertiary Alluvial floodplains of the Parramatta and Georges Rivers and features flat extensive floodplains and alluvial plains with some ponding. Groundwater flow is unconfined through unconsolidated alluvial sediments. Localised perching of water tables occur above clay lenses during wetter periods. Hydraulic conductivity and transmissivity are moderate to high.

- Aquifer Type: Unconfined in unconsolidated alluvial sediments. Vertical and lateral flow components. Local perching above clay-rich layers (seasonal).
- Depth to Watertable: Shallow to intermediate (seasonal), (range: 0–8m).
- Hydraulic Conductivity: Moderate to high (range: 10^{-2} – 10 m/day).
- Salinity: Brackish to saline (range: 1.6 - >4.8 dS/m).

Moorebank Hydrological Landscapes

The Moorebank Hydrogeological Landscape is characteristic of areas of Neogene (Pliocene) alluvial deposits contained within the floodplain of the Georges River. Groundwater flow in this HGL is unconfined through unconsolidated alluvial sediments. Localised perching of water tables occur above clay lenses during wetter periods. Unconfined to semi-confined flow also occurs along structures (bedding, joints, faults) in the fractured bedrock. Hydraulic conductivity is moderate to high and transmissivity is moderate.

[2] https://www.environment.nsw.gov.au/eSpade2WebApp#

Site Information

- Aquifer Type: Unconfined in unconsolidated alluvial sediments. Unconfined to semi-confined in fractured rock along structures. Local perching above clay-rich layers (seasonal).
- Depth to Watertable: Shallow to intermediate (range: 0–8 m).
- Hydraulic Conductivity: Moderate to high (range: 10-30 m/day).
- Salinity: Fresh to marginal (range: <0.8-1.6 dS/m).

The local groundwater conditions across the proposed development lands has been assessed as part of Environmental Strategies investigation (ES 2014b) and Sullivan-ES investigations between 2016 and 2020.

Environmental Strategies (ES 2014b) observed groundwater standing water level in the proposed residential area between 1.21m AHD (MW7) and 3.65m AHD (MW3). ES noted during groundwater well installation, groundwater strikes were generally encountered in red and grey mottled plastic clays on the western and northern portion of the proposed residential development (MW2, MW3, MW6, and MW7). The groundwater water strike on the eastern and southern portion of the proposed residential development was observed to generally be in weathered shale (MW1 and MW4).

Environmental Strategies laboratory testing within the Residential Estate only recorded heavy metal impacts above the adopted marine water criteria as follows:

- Cadmium at MW1, and MW4
- Copper at MW2, and MW4
- Nickel at MW1, and MW4
- Zinc at MW1, MW2 and MW4

Environmental Strategies considered the identified groundwater exceedances for metals to be consistent with urban background conditions.

Sullivan-ES's Phase 2 investigation in 2016 (Revised to 2019) installed a groundwater well in the southern most point of the Foreshore Area (GW1) and one also in the southern portion of Keys Parade Area (GW4). Foreshore Area groundwater was observed at 1.93 m below ground surface and was found to have copper, nickel and zinc impacts corroborating ES 2014b results. Keys Parade groundwater was observed at 4.19 m below ground surface and was found to have only zinc impacts. Sullivan-ES considered

- The elevated levels of copper, zinc and nickel metals are common in galvanised and metallic structures in urbanised areas.
- The fill/soil materials show very low concentrations of these metals, therefore the fill/soils are not posing a contamination source.
- The likely sources could be natural occurrences, or the endemic sources in urbanised areas.

The Data Gap Investigation by Sullivan-ES (May 2020) resampled the groundwater wells installed by Environmental Strategies. Heavy metal impacts, particularly nickel and zinc, were observed in MW1, MW3A and MW4A at similar concentrations to those recorded by Environmental Strategies (ES 2014b). Further, the resulted show nickel and zinc impacts reduce by an order of magnitude between MW1 and MW4A, a distance of approximately 200m. Sullivan-ES considered, the same level of attenuation could occur between MW4A and the Georges River which may reduce the metal concentration to a level that poses limited risk to the receiving water.

2.3 Previous Findings Relevant to Proposed Development

2.3.1 Phase 1 – Entire Riverlands Property

Environmental Strategies (ES) conducted a Phase I (ES 2014a) of the former Riverlands Golf Course and surrounding rural and open space land. ES's investigation area is presented in **Appendix D**. The primary objective of ES's investigation was to identify potential issues, concerns, environmental risks and liabilities associated with the present and historical uses of the subject site, with particular focus on potential for soil and groundwater. The report was to supplement previous work to meet Bankstown City Council requirements.

Environmental Strategies made the following conclusions:

- *"The earliest use of the subject site appears to have been as a golf course (southern portion) and agriculture/grazing lands (northern portion). The golf course portion of the subject site appears largely unchanged since prior to 1951 and makes up the bulk of the subject site area.*
- *Commercial activities have occurred on the north portion of the site. These activities have included sand mining/refinery and landscape supplies.*
- *Land to the east (upgradient) of the subject site was subjected to extensive redevelopment to residential land from the 1970s.*
- *The landscape of the golf course was re-contoured with filled during construction of the fairways and greens. The source and quality of landscaping material was unknown.*
- *From the age of the buildings and construction products and practices of the time, the presence of asbestos containing materials and leaded paint cannot be discounted. Soil validation should occur when the buildings are demolished.*
- *Validation of soils /and or groundwater should also occur when the fuel storage, greenkeepers areas and the landscape supply areas are to be demolished in support of future development consent.*
- *Observed areas of soil overburden stockpiling containing very minor ACM building rubble have been identified on the northern and western portions of the site.*
- *Anecdotal evidence suggested that a portion of the subject site is currently leased for grazing land for sheep and cattle. It is understood that sheep protection from parasites was completed in the former Landscaping Supply Company Area (APEC2). ES has been informed that this was achieved by direct manual-mouth injection. No observations of a sheep dip or spray booth was noted during the site walkover."*

ES recommended a Phase II ESA is completed into the future low density residential subject site to determine its suitability for the proposed development. The Phase II ESA should include:

- *"Assessment of soil acidification of the pond requested by Council;*
- *An intrusive Phase II assessment of the proposed residential site;*
- *Removal of the identified above ground storage tanks (ASTs) and validation of underlying soils when required or scheduled; and*
- *A HAZMAT analysis of all building structures to support demolition activities when required or scheduled and validation of soils in those areas."*

2.3.2 Phase 2 – Residential Estate.

Environmental Strategies Pty Ltd (ES) completed a Phase II (ES 2014b) of a proposed residential development on the former Riverlands Golf Course. Relevant sampling locations to the Residential Estate area collected by ES are BH1 to BH28, and MW1 to MW7 and presented in Historical Figures (**Appendix D**)

In consultation with Bankstown City Council (now City of Canterbury Bankstown Council) the primary objective of this investigation was to identify issues, concerns, environmental risks and liabilities associated with the present and historical uses of the proposed residential development, with particular focus on potential for soil and groundwater contamination.

Environmental Strategies made the following conclusions:

- *"A number of areas of potential environmental concern (APEC) were identified on the subject site during the ES (June, 2014) Phase I investigation, including fuel and chemical storage, hazardous materials, uncontrolled fill materials and stockpiles.*
- *This Phase II ESA was limited to the proposed residential development area only. Therefore only one (1) of the APEC was assessed.*
- *This Phase II ESA identified one (1) location of hydrocarbon impact in soil (likely to be less than three cubic metres of impact) and minor heavy metal impact in groundwater.*
- *Based on the reported chemical analysis of the soils, the proposed residential development may be made suitable, pending the recommendations in this report are completed.*
- *The low variability in soil contaminant conditions and limited contamination potential within the Phase II assessment area gives ES confidence that the sampling density is acceptable."*

Environmental Strategies recommended the following further works are completed on the proposed residential development to ensure it is suitable for development.

- *"Removal and validation of the identified soil where SAC was exceeded; and*
- *Removal of the identified above ground storage tanks (ASTs) and validation of underlying soils."*

2.3.3 Phase 2 – Remainder of Riverlands Property

Sullivan-ES conducted a Phase 2 contamination investigation (2016 – Revised to 2019) at the property known as the Riverlands Stage 2 Project located on Prescot Parade, Milperra NSW. Sullivan-ES's investigation area and sampling locations area are presented in **Appendix D**. Relevant sampling locations collected by Sullivan-ES in the Foreshore Area are B1C, B2C, B4C, B6C, and D16 (Geotech bore only), and in the Keys Parade Area are B14A, B15A, B16A, B17A, B18A, B9B, and B10B, refer to Figures 5 and 7 (**Appendix A**)

The objective of the Phase 2 investigation was to assess the soils and groundwater for contamination risks to a residential use standard, such that maximum reuse potential of soils on the site could be realised in the Riverlands Stage 2 works.

The scope of work consisted of review and summarising previous investigation reports, conducting a detailed site inspection followed by a program of soil and groundwater sampling comprising:

- 56 test pit and soil bores.
- 17 test pits within onsite stockpile mounds.
- 8 temporary groundwater monitoring wells targeting the shallow groundwater table.
- 6 sediment samples from the onsite dams.

Site Information

- Inspection of the surface materials within an area of bare soil in Area D (northern portion of the site).
- Chemical analysis of soil and groundwater samples for a suite of chemicals commensurate with potential contamination from current and historical activities.

Sullivan-ES concluded based on the findings of this Phase 2 contamination investigation and previous investigations, the site soils are of relatively good quality and generally meet the assessment land use criteria for a residential use. This statement was made with the following considerations:

Relevant to the Keys Parade Area

- *"Ash and slag gravels were observed at sampling locations B15A, B17A and B18A* (relevant to Keys Parade) *at the north end of Area A. This location is expected to be a significantly filled area of up to 4m thick forming an embankment down to the low-lying Area B. These ash materials are generally of poor quality, potentially extensive and deep, and considering the presence of asbestos, amongst other potential contaminants, the ash would pose a health risk requiring remediation or management to control risks. The ashy impacted area would require delineation to understand the extent of the asbestos impacts and ash material.*
- *Stockpile mounds at the north end of Area B* (relevant to Keys Parade) *could be considered for reuse with caution given the identified lead (Pb) impacts in one area and general presence of extraneous materials. These materials should be subject to screening, then sampling and analysis to verify the quality of the soil for reuse potential.*
- *Natural soil materials in low lying areas of Area B* (relevant to Keys Parade)*, Area C, Area D and the onsite dam sediments have been confirmed as ASS or PASS. These materials can be made suitable for reuse, subject to neutralisation treatment and validation.*
- *The water table in Area A* (relevant to south end of Keys Parade) *is relatively deep at approximately 4-5m below existing ground levels, compared to levels in Area B* (relevant to middle and north portions of Keys Parade) *and Area C which are predominately within 2m of the ground surface.*
- *Detectable contaminants in the groundwater at various locations are very low in concentration and considered to be naturally occurring, endemic urban sources or anomalies and not significant to warrant further assessment. The site groundwater would pose no unacceptable risk to human or ecological health."*

Relevant to the Foreshore Area

- *"The natural soils in Area B* (relevant to Foreshore) *and Area C* (relevant to Foreshore) *generally possess limited contamination risk and limited impediment for potential reuse, subject to consideration and treatment of the PASS/ASS.*
- *Natural soil materials in low lying areas of Area B* (relevant to Foreshore)*, Area C* (relevant to Foreshore)*, Area D* (relevant to Foreshore) *and the onsite dam sediments have been confirmed as ASS or PASS. These materials can be made suitable for reuse, subject to neutralisation treatment and validation.*
- *Stockpiles within Area C* (relevant to Foreshore) *should be subject to rigorous, screening and sampling to address the presence of asbestos in fibro cement sheets throughout the stockpiles prior to any consideration for reuse."*
- *Detectable contaminants in the groundwater at various locations are very low in concentration and considered to be naturally occurring, endemic urban sources or anomalies and not significant to*

warrant further assessment. The site groundwater would pose no unacceptable risk to human or ecological health."

2.3.4 Delineation Investigation – Ash-filled Embankment

Sullivan-ES was engaged to delineate an area of concern within the proposed Riverlands Development Project. Sullivan-ES's investigation area and sampling locations area are presented in **Appendix D**. Relevant sampling locations collected by Sullivan-ES in the Keys Parade Area are B19A to B32A, refer to Figure 5 (**Appendix A**).

The delineated area is situated in Keys Parade and comprised an ash-filled embankment previously identified in the Phase 2 Investigation (Revision A – 2019). The delineated embankment contained thick layers of ash fill material up to 4.0m thick in some areas. Asbestos was also identified within the ash fill at one previous sampling location.

The objective was to address recommendations presented in the Phase 2 (Revision A – 2019) by delineating the extent of ash fill and identified asbestos within the area of concern such that contamination risks can be assessed with respect to proposed future development at the Riverlands site.

The scope of work included drilling and sampling of twelve (12) soil bores and two (2) hand augers at locations supplementary to the previous investigation (Revision A – 2019), dispatching collected samples of soil to a NATA accredited laboratory for chemical analysis for a suite of contaminants and preparing a contamination report in accordance with state and national environmental guidelines and standards.

Sullivan-ES made the following conclusions and recommendations:

- *"The findings of this investigation have delineated the ash filled embankment and the presence of asbestos materials. Ash filling is present along the length of the embankment in the area of concern. Significant ash fill, identified as thicknesses greater than 0.5m, is present in the central portion of the embankment as identified at sample locations B15A, B18A, B20A, B22A, B24A and B25A.*
- *Ash fill appears to be chemically inert* (confirmed to be inert in Sullivan, Dec 2019) *and therefore based on chemical results alone would pose limited risk to human or ecological receptors. However, ash is present as thick, black and grey layers of cinders and some slags and would therefore pose an aesthetic issue to the proposed development requiring removal offsite or amelioration to improve its appearance if it is to be retained onsite.*
- *The ash fill should be geotechnically assessed to ensure it is suitable as foundation ground for the proposed development or if amendments are needed to improve its suitability in that regard.*
- *Asbestos fibres were detected in ash fill at sample location B18A in the previous investigation (May 2016); however, no asbestos was observed or detected in this investigation. Asbestos materials are therefore likely to be a localised impact around B18A.*
- *The identified asbestos in May 2016 was reported by the laboratory to be in a friable form, as such, any disturbance of this area requires appropriate measures to follow Health and Safety regulations to prevent generation of airborne asbestos fibres.*
- *Ash fill should be remediated to remove the potential health risk to future occupants of the proposed development or ameliorated to improve its appearance as it is an aesthetic issue to the development in its current state.*

- *Asbestos impacts at sample location B18A should be further assessed to define the extent of asbestos proximal to this sample location prior to remediating the area.*
- *A Remedial Action Plan (RAP) should be prepared to document the measures required to remediate asbestos impacted fill and ameliorate ash fill as recommended above."*

2.3.5 Data Gap Investigation

Mirvac engaged Sullivan-ES to conduct a Data Gap Investigation (DGI) of land contamination risks for the Riverlands Residential Development Project. Sullivan-ES's investigation area and sampling locations area are presented in **Appendix D**. Relevant sampling locations collected by Sullivan-ES in Residential Estate Area are TP1 to TP87, refer to Figure 3 (**Appendix A**).

The objectives of the DGI were to investigate for the presence of soil and/or groundwater contamination on the site to address data gaps and additional work identified by the Site Auditor. The scope of work included detailed inspections, replacing groundwater wells, sampling and analysis of soils and groundwater for a suite of contaminants, and preparation of the DGI report to assess potential health risks for the sites suitability for proposed residential use, providing recommendations for additional investigations or remediation, if required.

Sullivan-ES made the following conclusions based on the analytical data and field observations resulting from this investigation:

- *"Soils in the vicinity of the northeast corner contain buried ash/slag fill. This area was delineated by testpits TP10, TP11, TP12 and previous location BH5B (ES, 2014b).*
- *Soils in the vicinity of the southeast corner similarly contain buried ash/slag fill. This area was delineated by testpits TP41, TP42, TP43 and TP44.*
- *Two additional areas contain minor amounts of ash/slag fill at TP14 and TP49, while a small fill mound with mixed anthropogenic waste was located at TP27.*
- *Ash/slag waste and identified fill do not contain chemicals in concentrations exceeding the adopted soil criteria, and therefore are relatively inert. However, soils which exhibit discolouration, abnormal consistency (wastes, ash and slag fill) present an aesthetic issue and will require remediation and or management as part of the remediation of the site.*
- *Consideration should be given to excavated ash/slag material for reuse onsite in subterranean drainage layers (or similar) subject to blending with other suitable material types and geotechnical assessment by a competent geotechnical consultant.*
- *Sullivan-ES do not consider run-on water originating from the M5 Motorway is contributing to the heavy metal impacts observed in groundwater within the southern portion of the site (MW1 and MW4A).*
- *Fill materials proximal to MW1 and MW4A are not the source of heavy metal (predominately nickel and zinc) impacts in groundwater at those locations.*
- *No asbestos containing materials (ACM) were identified at any location assessed under this DGI and therefore asbestos is not considered a contaminant of potential concern for the site. As a contingency measure however, an unexpected finds protocol, including asbestos, should be prepared for the remediation of the site.*
- *Chlordane was detected above the HIL A criterion in the surface soils associated with the former greenskeeper shed (TP17_0.1-0.2). The concentration is less than the hotspot criterion, however it should be further investigated at this location to determine the potential extent of contamination.*

- *Low level concentrations of other recalcitrant pesticides were detected around the existing chemical store (TP5, TP6 and TP7) and on some golf greens, albeit well below the adopted soil criteria.*
- *Detections of pesticides near the existing chemical store warrant additional assessment given the potential for this area to be a source of pesticide concentrate.*
- *No soil results above the adopted residential criteria were reported in any other areas investigated within the site.*
- *Animal burial pits and ACM containing services were not observed onsite as part of the DGI.*
- *The HazMat Survey identified two items requiring management:*
    - *One ACM sheet leaning against the internal wall of the large maintenance shed; and*
    - *Lead-based paint on the fuel bowser pump outside the large maintenance shed.*

Sullivan-ES made the following recommendations to close out additional data gaps relating to pesticide contamination in localised soils and to include additional items in remediation activities:

- *Delineate the extent of the chlordane impacts identified at TP17 and any other recalcitrant pesticides for the purposes of assessing human health risks and prior to remediation planning.*
- *Conduct targeted sampling of soil in and around the existing chemical store to characterise soils for the presence of pesticides and any potential contamination.*
- *Areas of ash/slag wastes and other areas of identified anthropogenic waste should be added to the items requiring remediation. A second addendum to the RAP (2016) should be prepared to document additional items required to be remediated.*
- *Prior to demolition, all hazardous building materials should be removed from all structures in accordance with WH&S regulations."*

2.3.6 Earlier Contamination Investigations

Two earlier investigations were conducted at the site by Environmental Investigations Australia (EIA) Pty Ltd (EIA, 2006 and 2008). Subsequent work, as summarised in the preceding sections, conducted by Environmental Strategies and Sullivan-ES supersedes and updates the earlier EIA reports rendering their conclusions redundant, therefore we have not summarised the findings of those reports. In addition, the previous sampling locations conducted by EIA were not geo-referenced therefore sampling locations could not be relocated regardless of the sampling results.

2.4 Previous Remedial Action Plans

2.4.1 RAP - Greenkeepers Sheds - Residential Estate

Sullivan-ES was engaged to prepare a Remedial Action Plan (RAP) (Revision A – 1 Feb 2020) for soil remediation work for localised remediation zones near the former Greenkeepers Sheds located at the southern end of the Residential Estate. Previous investigations showed:

- Localised soils around BH17 were impacted by oils (hydrocarbons) that pose a potential health risk to future users of the site. The previous assessment (ES 2014b) recommended that the localised soils at BH17 be removed.
- The aboveground storage tanks be removed and soils underneath this area validated.
- Any identified fragments of potential asbestos containing materials (ACMs) should also be collected from the ground surface and removed.

As a result of above, the site soils proximal to the Greenkeepers Sheds required remediation to make the area suitable for residential land use.

The preferred remedial approach is to excavate and dispose of the contaminated soil offsite at an EPA licensed facility, as well as any identified fragments of ACMs. The ASTs are to be decommissioned and also removed from the site.

2.4.2 Addendum RAP - Residential Estate

Sullivan-ES was engaged to prepare an Addendum Remedial Action Plan (RAP) (Revision A – 31 January) for soil remediation work documented in the original RAP (refer to section 2.4.1 above).

The NSW EPA accredited Site Auditor issued an interim advice report (IAR, 15 Sept 2019) to provide a review of previous reports prepared for the site so that an addendum to the previous RAP could be prepared allowing an unconditional Section B site audit statement (SAS) to be issued. The Site Auditor recommended that additional investigation and remediation work is to be included in the Addendum RAP before the Section B SAS could be issued. The Addendum RAP was prepared to satisfy Site Auditor requirements.

The IAR listed the work that should be conducted to include:

- *"The remediation of additional aesthetically impacted or contaminated soil identified by the additional investigation (listed above) including black furnace/coal slag layer identified at BH5B, and aesthetically impacted or contaminated soils in/around the greenkeepers/maintenance shed area.*
- *The removal of all abandoned buried services from the Stage 1 area.*
- *The removal and remediation of the septic tank at the greenkeepers / maintenance shed.*
- *Consideration of remediation criteria for asbestos contamination in soils and any risk caused by legacy residual asbestos in soil.*
- *Establish a material tracking system for removal of wastes offsite (or otherwise) sufficient for Site Auditor approval and confirmation.*
- *Preparation of a Validation Report in accordance with NSW EPA guidance and documented at the completion of remediation end points.*
- *Contingency measures documented in the RAP (Sullivan-ES, Nov 2016) should be extended to include any new contamination or Unexpected Finds discovered during subsequent bulk earthworks within the Stage 1 Area. The term 'Unexpected Finds' is to be defined as 'contamination whose presence at a site is unlikely and cannot reasonably be found by investigations undertaken in accordance with regulatory requirements'."*

2.4.3 RAP - Ash-Filled Embankment

Sullivan-ES was engaged to prepare a Remedial Action Plan (Revision A – 1 Feb 2020) for remediation of ash and asbestos contaminated fill material located in an embankment at the proposed Riverlands Development Project.

Previous assessments identified a filled embankment within a small portion of the proposed development site that was impacted with ash and slag fill materials by historical activities; as well as an asbestos hotspot, that poses a potential health risk to future occupants of the development site warranting remediation.

The preferred remedial options were:

- Asbestos contaminated fill: excavation of contaminated soils and disposal offsite to a licenced landfill.
- Ash containing fill: excavate, blend and re-use onsite as blended backfill at depth where possible.

2.4.4 RAP – Foreshore Restoration Works

Sullivan-ES was engaged by Mirvac to prepare a Remedial Action Plan (Dec 2019) for remediation of stockpiled soils and anthropogenic wastes located along the Georges River Foreshore land.

Specific to the Foreshore land, previous assessments identified stockpiled fill and soil materials and other anthropogenic wastes at specified locations on the Foreshore land. These areas of the Foreshore require remediation to make the Foreshore land suitable for dedication to Council for future open space recreational use.

The proposed remedial methods for the Foreshore consist of:

- Characterisation and waste classification sampling, followed by either:
    - transporting offsite as waste for disposal or, if suitable
    - relocating to other parts of the Riverlands site for reuse as a soil resource.

2.5 Integrity Evaluation of Previous Reports

Information was collected from a number of sources to evaluate the risk of land contamination to the proposed development. Historical reports reviewed are considered accurate at the time they were issued. Government information sources are considered accurate and without bias. Sullivan-ES therefore consider the background information to be of an acceptable standard for evaluating contamination risk in accordance with the requirements under SEPP 55 and the SEPP 55 Guidelines.

3 Methodology

3.1 Data Quality Objectives

Step 1 - State the Problem

The problems under investigation were:

- Unknown extent of pesticide (chlordane) impacted surface soils at the former greenskeeper/maintenance shed;
- Unknown presence of soil contamination along the Keys Parade road alignment; and
- Unknown presence of soil contamination and extent of wastes along the Foreshore.

Step 2 – Identify the Decision

The principal study questions that arise from Step 1 were:

- Has the presence and extent of contamination in the various environmental media been defined onsite?
- Are or will human and environmental receptors be exposed to contamination and is the risk posed by contamination unacceptable requiring intervention?
- Is the site suitable, in the context of land contamination, for the proposed residential land use scenario?

Step 3 – Identify the Inputs to the Decision

The primary inputs required to make a decision relevant to Step 2 were:

- Relevant background data and any relevant data obtained from previous investigations.
- New data collected and observations made during field works.
- Results of chemical analyses of samples collected.
- Statistical data of new and existing data sets.
- Assessment of the suitability of new data for the purposes of environmental assessment through application of data quality indicators (DQIs).
- Assessment of the data in the context of the adopted investigation criteria.
- Characterisation of risk to human and ecological receptors.

Step 4 – Define the Study Boundaries

Spatial boundaries were limited to:

- Lateral – Defined by the proposed development boundary of the three development areas, namely the Residential Estate, Keys Parade and the Foreshore; as shown on figures (**Appendix A**).
- Vertical – collection of new data was confined to the surface and fill layers in soil.

Previous, existing and anecdotal data would be used to supplement the study boundaries as required.

Temporal boundaries are limited to the proposed fieldwork timeframes of last quarter 2020.

Step 5 – Develop a Decision Rule

The decision rule was:

- If the concentration of identified contamination in collected environmental samples exceed investigation criteria; then characterise and assess risk to human and environmental receptors.

A decision on the acceptance of the analytical data would be made on the basis of the Data Quality Indicators (DQI) in the context of the PARCC parameters for field-based activities.

Field-Based Activities

Precision: A quantitative measure of the variability (or reproducibility) of data. Intra and Inter laboratory duplicates were collected at a rate of one duplicate per 10 primary samples collected (i.e. 10% or an equivalent of 5% each). The relative percent difference (RPD) of the detected concentrations in the parent and duplicate was calculated with the following acceptable limits.

- No RPD limit <10 times LOR.
- 50% RPD limit 10-20 times LOR.
- 30% RPD limit >20 times LOR.

Accuracy: A quantitative measure of the closeness of reported data to the “true” value, applying the following acceptable limits.

- Rinsate and/or field blanks <LOR.

Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on site, with the following conditions met.

- Appropriate sampling methods adopted, and media sampled, and chemicals analysed (Step 7).

Completeness: A measure of the amount of useable data from a data collection activity, with the following conditions met.

- Appropriate Standard Operating Procedures (SOPs), and experienced staff (> 2yrs experienced), and documentation collected (logs, COC, instrument calibration, water monitoring readings). Refer Step 7.

Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event, with the following conditions met.

- Appropriate Standard Operating Procedures (SOPs), and experienced staff (> 2yrs experienced). Refer Step 7.
- Appropriate sample handling and preservation, and field conditions (Step 7).

Analytical Laboratory-Based Activities

Analytical laboratories operating under a NATA accreditation were assessed based on their internal and accreditation performance. As standard, a suitable internal QA/QC program is employed to include analysis of method blanks, matrix spikes, surrogate spikes, laboratory control samples and laboratory duplicates. The laboratory will report on whether the QA/QC analysis meets the laboratory’s adopted internal data quality objectives.

Step 6 – Specify Limits on Decision Errors

Specific limits for this project are in accordance with the appropriate guidance made or endorsed by state and national regulations, appropriate indicators of data quality, and industry standard procedures for field sampling and handling.

This step also examines the certainty of conclusive statements based on the available new site data collected. This includes the following points to quantify tolerable limits:

- A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative.

In order for decision rules to be sound, they were designed to minimise decision errors. The risk of decision error was mitigated by:

- Ensuring fieldwork tasks were undertaken by suitably experienced field staff and sub-contractors, with reference to the DQOs presented in this report;
- Ensuring laboratory analyses were undertaken by NATA accredited laboratories; and
- Ensuring interpretation of data was undertaken by suitably experienced environmental consultants and/or outsourcing interpretation to technical experts (if warranted).

Step 7 – Optimise the Design

The sampling program presented in the Contamination Assessment was aimed at obtaining the necessary data to allow the identified decisions in Step 2 to be made. Subsequent sections of the report detail the sampling program employed.

3.2 Basis to Sampling

The sampling approach was based on a systematic sampling pattern. Patterns were either grid-based or lineal in approach as shown in Table 3-1.

Table 3-1 Sampling Patterns for Scope

Scope Item Name	Sampling Pattern Adopted
Residential Estate – Pesticide impacted area	Grid-based for delineation
Keys Parade	Lineally evenly spaced along new road reserve alignment
Foreshore	Lineally evenly spaced along dedicated Foreshore land

3.3 Field Sampling Program

Details of the field sampling program are presented below.

Table 3-2 Soil Sampling Works Summary

Activity/Item	Details
Date of Field Activities	17 December 2020 - test pitting of Keys Parade 23 December 2020 – test pit sampling of Foreshore and Pesticide impacted area.
Soil Logging and Inspection of Material	Soil classifications and descriptions are based on Australian Standard AS1726-1993 Geotechnical Site Investigations.

Methodology

Activity/Item	Details
	All material exposed at each sample/inspection location (testpit) was thoroughly inspected for the presence of ACM. Soil descriptions for the lithology encountered during sampling are presented in test pit logs (**Appendix C)**.
Soil Sampling	Soil samples were taken directly from the centre of the backhoe bucket (400mm wide) using single use disposable nitrile gloves.
Decontamination Procedures	Sampling tools were decontaminated between sampling locations with potable water and a solution of Decon 90. Single use disposable nitrile gloves were worn at all times and changed between each soil sample.
Sample Preservation	Samples were placed in laboratory-supplied jars containing appropriate preservatives or suitable asbestos sampling bags. Samples were stored on ice in a cooler while on-site and in transit to the laboratory.
Disposal of Soil Cuttings and Materials	Soil cuttings/spoil was used to backfill test pits once samples had been collected. Single use materials used during sampling were placed into garbage bags and disposed off-site.

3.3.1 Sample Analyses

Samples were analysed in accordance with the table below.

Table 3-3 Sample Analysis Schedule

	TRH/TPH	BTEXN	PAHs	Metals	Asbestos ID	PCBs	Neutral DI leach (PCB)	OCPs and OPPs
Residential Estate								
Primary soil samples	0	0	0	12	0	12	0	12
QA/QC – Intra-lab and Inter-lab field duplicates	0	0	0	1	0	1	0	1
Keys Parade								
Primary soil samples	20	20	20	20	18	8	0	8
Material sample (fibro)	0	0	0	0	1	0	0	0
QA/QC – Intra-lab and Inter-lab field duplicates	3	3	3	3	0	0	0	0
Foreshore								

	TRH/TPH	BTEXN	PAHs	Metals	Asbestos ID	PCBs	Neutral DI leach (PCB)	OCPs and OPPs
Primary soil samples	19	19	19	19	10	13	1	8
Material sample (fibro)	0	0	0	0	3	0	0	0
QA/QC – Intra-lab and Inter-lab field duplicates	3	3	3	3	0	2	0	2
Blanks/spikes	0	4	0	0	0	0	0	0
Total all samples	**45**	**49**	**45**	**58**	**32**	**36**	**1**	**31**

Table notes: Total Petroleum/Recoverable Hydrocarbons (TPH/TRH), Benzene, Toluene, Ethylbenzene, Total Xylenes and Naphthalene (BTEXN), Polycyclic Aromatic Hydrocarbons (PAHs), Metals (As, Cd, Cr (total), Cu, Hg, Ni, Pb, Zn), Organochlorine Pesticides (OCPs), Organophosphorous pesticides (OPPs) and Polychlorinated biphenyls (PCBs).

3.4 Quality Assurance and Quality Control

Quality Assurance and Quality Control (QA/QC) was governed on the basis of the Data Quality Indicators (DQI) using PARCC parameters as listed in the DQOs (Step 5) and reproduced as follows:

- Precision: A quantitative measure of the variability (or reproducibility) of data.
- Accuracy: A quantitative measure of the closeness of reported data to the “true” value.
- Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on site.
- Completeness: A measure of the amount of useable data from a data collection activity.
- Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

The Assessment was completed following standard operating procedures for conducting site contamination investigations. Standards followed included:

- General field documentation
- Health and safety
- Use of Personal Protective Equipment (PPE)
- Representative sample collection and labelling
- Equipment calibration
- Chain of Custody documentation for analytical samples
- Decontamination
- Collection of quality control samples (that may include: intra laboratory, inter laboratory, rinsates, blanks, spikes).

The data validation adopted for this assessment was based on the following guidance documents:

Methodology

- Schedule B2 of the National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM 2013).
- Australian Standard 4482.1 Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds, 2005.
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA 540-R-10-011, dated January 2010).
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA 540/R-99/008, dated June 2008).

The data validation process involves the checking of analytical procedure compliance and the assessment of the accuracy and precision of analytical data from a range of quality control measurements generated from both field sampling and analytical programs. Specific elements that have been checked and assessed for this project include:

- preservation and storage of samples upon collection and during transport to the laboratory
- holding times
- use of appropriate analytical procedures
- required LOR
- frequency of conducting quality control measurements
- laboratory blanks
- field duplicates
- laboratory duplicates
- matrix spike/matrix spike duplicates (MS/MSDs)
- surrogates (or System Monitoring Compounds)
- the occurrence of apparently unusual or anomalous results.

4 Soil Assessment Criteria

4.1 Residential Estate

The Residential Estate is proposed for development as a low-density residential estate with associated minor open space parkland areas. The adopted assessment criteria reflects the sensitive nature of human and environmental receptors as occupants and inhabitants of low-density residential land with accessible soils and gardens.

The following criteria will be adopted from ASC NEPM 2013 for assessing soils in the Residential Estate as listed in Table 1 (**Appendix B**):

- HIL A and HSL A - Residential with garden/accessible soil also including childcare centres, preschools and primary schools.
- EIL/ESL – Urban residential/public open space.
- Mgmt Limits – Residential, park land and public open space.
- Asbestos HSLs – Residential A.
- Soil Aesthetics.

4.2 Keys Parade and Foreshore

Keys Parade includes road verges and footpaths considered to be public open space with accessible soils along road verges. Foreshore is considered recreational public open space with accessible soils.

The following criteria will be adopted from ASC NEPM 2013 for assessing soil in Keys Parade and the Foreshore as listed in Table 2 and 3 (**Appendix B**):

- HIL C and HSL C – Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths.
- EIL/ESL – Urban residential/public open space.
- Mgmt Limits – Residential, park land and public open space.
- Asbestos HSLs – Recreational C.
- Soil Aesthetics.

4.3 Notes on Adopted Criteria

Health-based Investigation Levels (HILs)

The National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013) Health-based Investigation Levels (HILs) (Schedule B1) provides a framework that is applicable for assessing human health risk via all relevant pathways of exposure and covers a broad range of metals and organic substances. Different levels are provided for a variety of exposure settings based on the land use scenario at a particular site.

Health Screening Levels (HSLs)

The ASC NEPM 2013 HILs do not provide criteria for petroleum hydrocarbon chemicals, therefore the Health Screening Levels (HSLs) were developed and form part of the ASC NEPM 2013 in Schedule B1. The ASC NEPM 2013 – HSLs are designed to be protective of human health and are applicable to assessing human health risk via the inhalation pathway. The HSLs used in this report have not been adjusted for site specific parameters such as moisture content for this phase of work. HSLs are available for various depth profiles and predominant lithology (sand, silt and clay).

Soil Assessment Criteria

HSLs relevant to the top 2.0m of soil with a sandy consistency were adopted.

HSLs for direct contact were adopted from Table 4 of CRC CARE Technical Report No. 10 by Friebel and Nadebaum (2011).

Ecological Investigation/Screening Levels

The ASC NEPM 2013 Ecological Investigation levels and Ecological Screening Levels (EILs and ESLs) have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties, whereas ESLs do not, and both are relevant to land use scenarios and apply to the top two metres of soil. EILs take into account soil texture and age of the impacts, whereas ESLs account only for soil texture.

Specific EILs were calculated using the ASC NEPM EIL Calculation Spreadsheet using the following assumed values to calculate EILs for aged contamination sources:

- CEC (20cmol(+)/kg).
- pH (7).
- OC (1%).
- Clay (20%).
- Low traffic volumes.

Asbestos Health Screening Levels

The ASC NEPM 2013 asbestos HSLs have been developed for managing land use impacts associated with asbestos and are applicable for assessing risk to human health. The guideline has been derived from the Western Australian Department of Health (WA DoH 2009) guidance. The guidance covers bonded Asbestos Containing Material (bonded ACM), Fibrous Asbestos (FA) and Asbestos Fines (AF).

Note that the quantitative criteria (i.e. percentage of asbestos materials) were not used in this assessment given that the analysis was to determine the presence of asbestos only and not to quantify asbestos materials in soils. Visual identification and subsequent laboratory analysis were used to assess for potential asbestos containing materials (ACMs) such as fibro sheeting. The ASC NEPM 2013 Asbestos HSLs include a qualitative approach such that no visible asbestos should be at the soil surface for all forms of asbestos. This qualitative approach was also adopted for this investigation.

Management Limits

The ASC NEPM 2013 Management Limits in Schedule B1 are relevant for TRH contaminants only. The Management Limits are specific for soil types (coarse and fine) and land uses. If adopted on a site, Management Limits are intended to avoid or minimise the potential effects of the following and require consideration of site-specific factors to determine the maximum depth to which the limits should apply:

- Formation of observable light non-aqueous phase liquids (LNAPL).
- Fire and explosive hazards.
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

Soil Assessment Criteria

Aesthetic Considerations

In accordance with the ASC NEPM 2013 in Schedule B1 the aesthetic state of sites is required to be taken into account. Aesthetic issues generally relate to the presence of materials with a negligible risk or non-hazardous inert foreign material in soil or fill resulting from human activity. Sites that have been assessed as being acceptable from a human health and environmental perspective may still contain such foreign anthropogenic material. An assessment of the site aesthetics requires consideration of the natural state of soil on any given site, and a comparison between it and the soil encountered during investigations.

In particular, soils on site should not exhibit discolouration (staining), a malodorous nature (odours), abnormal consistency (rubble and trash) or show visible evidence of industrial wastes.

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5 Results and Discussion

5.1 Field Observations

The following observations were made while conducting fieldwork sampling:

5.1.1 Residential Estate – Delineation of Pesticide Impacted Area

Soils within this defined area of the site (as shown on Figure 3) were consistent with previous sampling in and around the former shed. No evidence of ashy fill was observed in this area, other than TP14 from the previous DGI (May 2020) and a very thin layer of ash at location D06. The old building slab was noted to be buried under surface topsoils at locations D04, D05 and D06, while a metal pipe was unearthed at location D01.

5.1.2 Keys Parade

Sampling locations are shown on Figure 5.

- Sample locations were positioned along the proposed alignment of Keys Parade which at present is an asphalt sealed internal access road.
- Underlying materials of the access road typically consist coarse gravels and ashy fill (variable thin and thick layers), underlain by natural sandy/silty clays.
- Locations KP01 and KP03 were positioned on an embankment that comprises soil and ash mixtures with some foreign matter.
- Locations KP05, KP06 and KP07 were positioned within and area of multiple small soil stockpiles. These stockpiles predominately comprised sandy material with minor foreign matter. A large fragment of cement fibro sheeting suspected to contain bonded asbestos was observed at KP05.
- No other fragments of fibro cement sheeting were noted at any other sampling location or on ground surfaces.

5.1.3 Foreshore

Sampling locations are shown on Figure 7.

- Sample locations FP01 to FP09 were positioned along the southern portion of the Foreshore, while locations FP10 to FP17 were positioned along the northern portion. These portions were labelled **Area 1** (southern end) and **Area 2** (northern end) of the Foreshore.

Area 1

- Area 1 is characterised by the presence of numerous stockpiles of soil mixtures and areas landfilled with soil to build up the ground elevation. The soils mixtures used for stockpiling and landfilling contained various amounts and types of foreign matter waste including plastics (soft and hard), scrap metal, brick, tile and concrete (whole pieces and rubble), timber (offcuts and large tree logs), ash and slag waste, and glass/ceramic shrapnel.
- These wastes were observed protruding from the ground surfaces at multiple locations.
- Fragments of cement fibro sheets suspected as ACM were observed on the ground surface at various places in Area 1. Subsequent laboratory testing confirmed the presence of bonded asbestos, refer to Section 5.2 below.
- Fill material typically comprises wastes as described above in a gravelly clay and/or silty clay matrix.

- Two locations (FP05 and FP07) were positioned at locations that would be submerged during the tide cycle (at some stage). The locations resembled swampy/sloppy sediments with mixtures of wastes as described.
- Depth of filling varies from approximately 0.6m (FP05 – landfilled area) to greater than 2.2m (FP02 – soil stockpile), noting that fill depth various significantly between soil stockpiles and landfilled areas.

Area 2

- Area 2 is characterised by a stretch of land cleared of tree and scrub vegetation with a grass covering. To the north half of Area 2 the clearing is set back from the Foreshore embankment by a stand of trees.
- A drainage channel and culvert intersect this area between sample locations FP13 and FP14, which essentially separates this area into north and south halves.
- In the southern half (FP10 to FP13), protruding from the Foreshore embankment are two long timbers, resembling a remnant wharf. The foreshore riverbed and immediate area below and either side of the old wharf timbers are hundreds of brick pieces.
- The embankment in the southern half appears eroded which shows the Foreshore has been landfilled with brick, ash waste and other rubble proximal to the old wharf.
- Landfilling is more prominent at FP10 and FP11 than FP12 and FP13 along the southern half of Area 2. Landfilling at these locations contained various amounts waste including plastics (soft and hard), scrap metal, brick, tile and concrete rubble, ash and slag waste, and glass/ceramic shrapnel.
- Landfilling along the northern half (FP14 to FP17) was predominately a layer of topsoil/clay underlain by ashy fill with some minor brick and tile pieces.
- No fragments of cement fibro sheets were observed in Area 2.

5.2 Soil Results

Soil analytical results are presented in Tables 1, 2 and 3 (**Appendix B**) while laboratory analytical reports are provided in **Appendix F**. The soil results show the following:

Residential Estate – Delineation of Pesticide Impacted Area

- The Chlordane impacted soil at TP17 that exceeded soil criteria identified in the previous DGI (May 2020) has been delineated and appears localised at TP17 only.
- All other results show detections of OC pesticides well below the adopted soil criteria or not detected.
- The 95% UCL of the arithmetic mean of Chlordane in soils in this area of the Residential Estate was calculated to be 18.48mg/kg (95% Chebyshev), as such the concentrations of Chlordane within the impacted area meets the adopted soil criterion and would pose negligible human health risk. The ProUCL output sheet is presented in **Appendix E**.
- All other results for metals, OP pesticides and PCBs were reported below the adopted soil criteria or below the LOR.

Keys Parade

- Bonded asbestos was detected in a fragment of cement fibro collected from location KP05.

- Copper was detected at 525mg/kg at KP15 (0.1-0.2m) which exceeds the adopted EIL criterion of 270mg/kg. We do not consider this detection to be a cause for concern in the context of the proposed development of this area to be a public road.
- A detection of carcinogenic PAH (BaP TEQ) was reported at KP18 at a concentration above the adopted soil criteria. Other PAHs constituents were reported at KP18 and at other sample locations but well below the adopted soil criteria for Total PAHs. While there were some thin ashy material layers observed, we suspect that the source of PAHs is likely to be the surface bitumen gravels that has inadvertently mixed with the analysed sample collected at a shallow depth immediately underneath the bitumen (i.e. KP11 to KP20). In accordance with ASC NEPM 2013, BaP occurring in bitumen is immobile and does not present a health risk.
- TRH fraction F3 (TRH >C16-C34) was detected at KP15 (0.1-0.2m) at a concentration of 1,770mg/kg which is above the ESL criterion of 300mg/kg. While this detection is above the hotspot level (i.e. 250% of criterion) for ecological health, we do not consider this detection to be a cause for concern given the localised nature and limited filling thickness of the likely source of TRH, and in the context of the proposed development of Keys Parade to be a public road.
- BaP was detected at a number of locations in exceedance of the ESL criterion of 0.7mg\kg, consistent with the carcinogenic PAH detections above. Again, similar to PAHs above, we suspect the source of BaP to be bitumen fragments and therefore there is no cause for concern based on these detections.

Foreshore

<u>Asbestos – Human Health:</u>

- Asbestos was detected in fragments of cement fibro collected from location FP05 (F01), FP06 (F02) and FP07 (F03). All fragments were collected from surface and near surface landfilling waste.
- Non-Bonded asbestos was detected in a soil sample collected from FP10 (0.3-0.4m depth) in landfill waste. The detection was reported as below the LOR of 0.1g/kg, however the detection confirms the presence of asbestos in the sample regardless. The asbestos material in this sample was described as two pieces of asbestos fibre board approximately 5x3x1mm in size. This type of material is considered an asbestos fine (AF) under ASC NEPM 2013 as it is <7mm in size and therefore present in a non-bonded asbestos (friable) form.

<u>Human Health:</u>

- Arsenic was detected at FP05 (0.5-0.6m depth) in landfill waste at 436mg/kg exceeding the adopted HIL C criterion of 300mg/kg.
- Chromium was detected at FP05 (0.5-0.6m depth) and FP10 (0.3-0.4m depth) at concentrations of 367mg/kg and 396mg/kg, respectively, that exceeded the adopted HIL C criterion of 300mg/kg. The samples represent landfill waste at these locations. We note that the adopted criterion is specific for Chromium (VI), while our results represent Total Chromium of which Chromium (VI) would be a smaller portion of the total and likely to be less than the criterion. As such we do not consider there to be a cause for concern for human health from Chromium (VI) at these locations.
- Lead was detected at FP10 (0.3-0.4m depth) and FP11 (0.3-0.4m depth) at concentrations of 775mg/kg and 1,460mg/kg, respectively, that exceeded the adopted HIL C criterion of 600mg/kg. The samples represent landfill waste at these locations.

Results and Discussion

- PCB (total) was detected at FP10 (0.3-0.4m depth) in landfill waste at 125mg/kg exceeding the adopted HIL C criterion of 1.0mg/kg. PCBs detected at this location are 125 times greater than the adopted criterion and considered a PCB contamination hotspot of significance requiring intervention.
- Neutral leaching test results for PCBs from sample FP10 (0.3-0.4m depth) was below the laboratory detection limit (1.0 µg/L).
- PCB (total) was also detected in landfill waste at FP11 (0.3-0.4m depth) at 0.4mg\kg, at FP13 (0.3-0.4m depth) at 0.2mg/kg, FP14 (0.2-0.3m depth) at 0.4mg/kg and at FP15 (0.2-0.3m depth) at 0.6mg/kg. These results are below the adopted human health soil criterion for PCB in soils.

<u>Ecological Health:</u>

- Arsenic was detected at FP05 (0.5-0.6m depth) at 436mg/kg exceeding the adopted EIL criterion of 100mg/kg and considered a hotspot of Arsenic contamination (i.e. > 250% of criterion) for ecological health.
- Copper was detected in landfilling waste materials at the following locations exceeding the adopted EIL criterion of 230mg/kg:
    - FP05 (0.5-0.6m depth) – 1,330mg/kg – contamination hotspot for ecological health;
    - FP10 (0.3-0.4m depth) – 2,330mg/kg – contamination hotspot for ecological health;
    - FP11 (0.3-0.4m depth) – 545mg/kg; and
    - FP12 (0.3-0.4m depth) – 400mg/kg.
- Nickel was detected at FP05 (0.5-0.6m depth) at 990mg/kg exceeding the adopted EIL criterion of 270mg/kg and considered a hotspot of Nickel contamination (i.e. > 250% of criterion) for ecological health.
- Zinc was detected in landfilling waste materials at the following locations exceeding the adopted EIL criterion of 770mg/kg:
    - FP07 (0.2-0.3m depth) – 857mg/kg;
    - FP10 (0.3-0.4m depth) – 1,430mg/kg; and
    - FP11 (0.3-0.4m depth) – 8,810mg/kg – contamination hotspot for ecological health.

6 Conceptual Site Model

A Conceptual Site Model (CSM) has been developed in consideration of existing results. The CSM takes into account the future uses of the land as predominately low-density residential dwellings within the Residential Estate, and open space public land within Keys Parade and the Foreshore.

6.1 Contamination Sources and Contaminants of Concern

Onsite Sources

Residential Estate

- Localised areas of aesthetically impacted soils in the following locations:
    - Northeast corner under golf green – ash/slag gravels
    - Southeast corner under golf green – ash/slag gravels
    - Former greenkeepers/maintenance shed – TP14 layer of ash/slag gravels
    - Eastern corner under access road at TP49 – layer of ash/slag gravels
    - Fill mound containing anthropogenic waste at TP27.
- Contaminated soil at TP17 at the former Greenskeeper Shed – Chlordane pesticide.
- Potential pesticide soil impacts in/around existing chemical store.
- Contaminated surface soils at BH17 (ES, 2014b) – Petroleum hydrocarbons.

Keys Parade

- Fragments of bonded and non-bonded ACM - Asbestos
- Ash and slag fill – Asbestos, aesthetics
- Anthropogenic buried waste - Aesthetics
- Stockpile mounds – Asbestos, aesthetics

Foreshore

- Anthropogenic buried waste:
    - Inorganic heavy metals (Arsenic, Copper, Lead, Nickel, Zinc)
    - Asbestos in bonded and non-bonded forms.
    - Polychlorinated Biphenyls (PCBs).
- Anthropogenic surface wastes – aesthetics (plastics and general refuse)
- Natural soil materials in low lying areas have been confirmed as ASS/PASS

Offsite Sources

Buried landfilling wastes inland of the 20m dedicated foreshore zone.

6.2 Receptors and Exposure Pathway

- Construction/site worker – acute exposure
    - direct contact/ingestion of soil.
    - direct contact/ingestion of potentially contaminated shallow groundwater.
- Future residential occupants – Chronic exposure - direct contact/ingestion of soil. Aesthetic impact at ground surface.
- Future open space users – Chronic exposure - direct contact/ingestion of soil. Aesthetic impact at ground surface.
- Terrestrial organisms along Foreshore - direct contact with soil.

- Aquatic ecosystem of Georges River - direct contact with potentially contaminated groundwater.

6.3 Source-Pathway-Receptor Linkages

Residential Estate

- There is a link between hydrocarbon contaminated surfaces soil at BH17 and future residents requiring intervention.
- There is a link between the aesthetic impacts caused by ashy and anthropogenic wastes and future residents requiring intervention.
- There will be no link between future residents and the localised chlordane impact at TP17 because the source of chlordane contamination does not exceed the adopted human health soil criterion as shown by calculation of the 95%UCL.

Keys Parade

- There is a plausible link between non-bonded (friable) asbestos contaminated ash fill and construction workers requiring intervention.
- Similarly, the presence of bonded asbestos in fibro cement sheeting in stockpiled soils is a cause for concern for construction workers disturbing these stockpiles.
- There is a link between the aesthetic impacts caused by ashy and anthropogenic wastes and future users of Keys Parade. No waste should be used at the ground surfaces.

Foreshore

- There is a plausible link between contaminated buried wastes/soils/potentially contaminated groundwater and construction/site workers (during development) and future open space users/terrestrial and aquatic organisms, specifically along the Foreshore. Intervention to remedy the linkages is warranted.
- Potential link between PASS/ASS natural soils and terrestrial and aquatic organisms if the underlying natural soils are exhumed and allowed to oxidise specifically along the Foreshore. Intervention to remedy the linkages maybe warranted if PASS/ASS soils are encountered during the foreshore remediation works.

6.4 Data Paucity

Sufficient data has been gathered over past and current contamination assessments to characterise the proposed development land areas. However, recent findings raises additional concerns with respect to the Foreshore given that the extent of buried wastes along the Foreshore has not been determined. In addition, soils around the existing chemical store require verification to confirm they do not contain concentrations of pesticides at levels that pose a health risk to future residents.

7 Quality of Analytical Data

Analytical data validation is the process of assessing whether the data is in compliance with method requirements and project specifications. The primary objective of this process is to ensure that data of known quality are reported, and to identify if data can be used to fulfil the overall project objectives.

On the basis of the analytical data validation procedure employed, the overall quality of the analytical data produced is considered to be of an acceptable standard for interpretive use. The table below provides a summary of the data validation.

Table 7-1 Data Quality

Requirement	Compliance	Comments
Field Duplicates	Yes	Intra-laboratory duplicate samples were collected by splitting a sample into the primary and duplicate sample containers. A total of 7 intra-laboratory duplicates were collected for 51 primary samples resulting in greater than 1 duplicate per 10 primary samples analysed (i.e. >10%) in accordance with AS4482.1: 2005. Refer Tables 1, 2 and 3. No inter-laboratory duplicate samples were collected for this project.
RPDs	Yes	All calculated RPDs fall within the acceptable limits of <30% to <50% (Tables 1, 2 and 3). The exception to this was: • Zinc 32.6% (FP13_0.3-0.4 and QZ03) should be <30% when conc. > 20x LOR; • Zn 103% (D04_0.2-0.3 and QZ02) should be <50% when conc. > 10x but <20x LOR; and • Total PAHs 96.4% (KP20_0.1-0.2 and DUP C) should be <50% when conc. >10x but < 20x LOR. The resultant RPDs of the three samples are not significantly excessive, nor do any values exceed the adopted criteria. Minor to moderate heterogeneity of samples is the likely cause. Given the large data set and very minor number of non-compliance, we do not see that it would impact the veracity of the data quality in this instance. Where concentrations of either sample was <LOR or <10 times the LOR, then no RPD was calculated. This evaluation is in accordance with section 8 of AS4482.1: 2005.
Rinsate Blanks	N/A	No dedicated sampling equipment was used to collected samples, therefore no rinsate blank samples were collected.
Blanks/Spikes	Yes	Trip blanks and trip spikes were collected and dispatched to the laboratory the two separate sample batches (Table 2 and 3). Trip blanks reported all volatile analytes below the LOR. Trip spikes reported recoveries within acceptable limits (70%-130%).

Quality of Analytical Data

Requirement	Compliance	Comments
Sampling equipment properly decontaminated	Yes	Disposable equipment used. Although no dedicated sampling equipment was used, any sampling tools used were decontaminated between sampling locations with a solution of Decon 90 and rinsed with potable water.
Sample Preservation	Yes	Samples were properly preserved. Samples were compliant with required storage temperature. Refer laboratory SRN.
Samples delivered to laboratory within sample holding times.	Yes	Confirmed from COCs and laboratory reports.
Equipment Calibration	N/A	No field instruments requiring calibration were used.
Analytical procedures	Yes	All NATA accredited. All analyses meet compliance requirements. No laboratory outliers were observed for the primary laboratory. The exception was matrix spike outliers existed for ALS Batch ES2045293 for Lead and Zinc analytes from anonymous samples. The matrix spike recovery was not determined because the background level was greater than or equal to 4x spike level. Given the large data set and very minor number of non-compliance, we do not see that it would impact the veracity of the data quality in this instance.
SOPs and competent field personnel	Yes	Sampling procedures follow industry standards, and field staff (Adam Sullivan – more than 20 years' experience. Sean Guenther – 15 years' experience) are competent in sampling methods and QA/QC protocols.

8 Conclusions and Recommendations

The following conclusions are made based on the findings of this Contamination Assessment and previous reports; subject to the limitations presented in Section 10:

8.1 Residential Estate

The Residential Estate site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). Detailed investigations conducted across the proposed Residential Estate has sufficiently characterised soil and groundwater to assess the land for low-density residential land use. We conclude that:

- Environmental Strategies Phase 2 (ES, 2014b) showed that soils at a localised area of the site at BH17 were impacted by oils (hydrocarbons) posing a potential health risk to future users of the site. It is recommended the localised soils at BH17 be removed, the aboveground storage tanks be decommissioned and removed and soils underneath this area validated. It is also recommended any identified fragments of potential asbestos containing materials (ACMs) should also be collected from the ground surface and removed.
- Site soils exhibiting discolouration, abnormal consistency (wastes, ash and slag fill) present an aesthetic issue requiring remediation and or management as part of the remediation of the Residential Estate site. Soils requiring remediation for aesthetic considerations include:
    - The soils under the golf greens in northeast corner of the site delineated by test pits TP10, TP11, TP12 and previous location BH5B (ES, 2014b) contain buried ash/slag wastes.
    - The soils under the golf greens in the south east corner of the site, delineated by test pits TP41, TP42, TP43 and TP44, contain buried ash/slag wastes.
    - Two additional areas contain minor amounts of ash/slag fill at TP14 (former chemical sheds) and TP49 (entrance road off Prescot Parade).
    - A small fill mound with mixed anthropogenic waste was located at TP27.
- Detections of pesticides near the existing chemical store adjoining the Greenkeepers Shed have been observed. The RAP for the Residential Estate describes delineation testing and potential remediation and validation of the local area.
- Items raised by the Site Auditor in Interim Advice (dated 15 Sept 2019) requiring closeout will be presented in the updated Residential Estate RAP including:
    - Remove and remediate the septic tank system at the greenkeepers/maintenance shed.
- The proposed Residential Estate development land is suitable for future residential dwellings, subject to implementing the existing Residential Estate RAP (1 July 2021) to cover the following items:
    - Remediation of petroleum impacts in surface soils at BH17 (ES, 2014b).
    - Decommissioning and removing the two ASTs and fuel bowser.
    - Decommissioning and removing the sewerage tank system.
    - Removal of all abandoned buried services.
    - Management of ash/slag wastes buried under the two identified golf greens.
    - Management of anthropogenic waste buried in a localised stockpile at TP27, and other smaller quantities of ash/slag buried at TP14 and TP49.
    - Verification sampling for the presence of pesticides near the existing chemical store.

8.2 Keys Parade

The Keys Parade site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). Detailed investigations conducted across the proposed Keys Parade has sufficiently characterised soil and groundwater to assess the land for open space land use consistent with a public road corridor. We conclude that:

- Ash filling greater than 0.5m is present along the length of the embankment in the Keys Parade area delineated by B15A, B18A, B20A, B22A, B24A and B25A. The ash fill is present as thick, black and grey layers of cinders and some slags. The ash and slag pose an aesthetic risk requiring remediation to be suitable for the future open space land use. These soils require removal offsite or amelioration to improve its appearance if it is to be retained onsite.
- Non-bonded asbestos was recorded within the ash fill associated with B18A. The non-bonded asbestos containing ash fill requires remediation to remove the potential health risk to future occupants of the proposed development. The non-bonded asbestos impacts at B18A should be further assessed to define the vertical and lateral extent of the impacts prior to remediating these soils.
- Anthropogenic wastes, in the form of plastic, bricks, bitumen and timber, was observed within the Keys Parade embankment at locations KP01 and KP03. The presence of anthropogenic wastes at these locations pose an aesthetic issue requiring removal offsite.
- Keys Parade sampling locations KP05, KP06 and KP07 were positioned within an area of multiple small soil stockpiles. A large fragment of cement fibro sheeting containing bonded asbestos was identified at FP05. The stockpiles require characterisation for reuse onsite or for disposal offsite. The presence of bonded and or non-bonded asbestos in this area must be considered for all the mounds during remediation of the Keys Parade Development Lands
- The proposed Keys Parade development land is suitable as a future roadway and footpath construction (under an open space public land use), subject to implementing the existing Keys Parade RAP (1 July 2021) to cover the following items:
    - Remediation of asbestos contaminated ash/slag wastes buried at B18A (Sullivan-ES, 2018)
    - Management of ash/slag/anthropogenic waste filling used to construct the embankment at the south end of the proposed Keys Parade alignment.
    - Soil stockpiles present in the central portion of the proposed Keys Parade could contain fragments of bonded asbestos sheeting in addition to the fragment already identified. Management of the soil stockpiles is required during removal or reuse of these materials.

8.3 Foreshore

The Foreshore site history was adequately described by Environmental Strategies Phase 1 (ES, 2014a). While past and present investigations of the Foreshore provide an adequate level of characterisation to assess contamination risks, there are human and ecological health risks related to wastes used as landfilling along the Foreshore. Due to the presence of the sensitive ecology (e.g. No-Go zones such as mangroves, protected trees, sensitive terrestrial and aquatic organisms, etc) in the Foreshore land, the recommended remediation should target only those accessible areas where there is potential health risk from chemical contamination and or aesthetic issues requiring remediation due to gross anthropogenic materials/wastes. The remediation strategy is to be considerate of removing contamination to the extent

practicable while preserving the sensitive environment within the Foreshore. A number of options will be proposed to satisfy this goal.

Of specific concern are the landfill wastes present at FP10 (and proximal to that location) containing concentrations of PCB and non-bonded forms of asbestos. Other locations including FP05 and FP11 contain similar landfill wastes (and detectable residues of asbestos (FP05) and PCB (FP11)). These areas are considered areas of concern for human and ecological health based on the presence of these wastes alone.

Detectable residues of PCBs were also reported at FP13, FP14 and FP15 in Area 2 of the Foreshore which adds to the level of risk.

While not considered particularly deep, the depth of wastes used as landfilling has not been determined, specifically at areas of high contamination risk at FP05, FP10 and FP11.

Soil materials containing concentrations of PCBs at levels greater than 2mg/kg are subject to regulation under the Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 (PCB CCO 1997). The PCB CCO 1997 sets out the requirements for:

- defining non-scheduled and scheduled PCB materials and wastes (Clauses 4.25 and 4.26)
- defining priority areas (Clause 4.23)
- conveying of PCB material and PCB waste (Clause 6.4) and
- disposing of PCB waste (Clause 6.5).

Based on the concentration of PCB at location FP10 and the expected very shallow depth to groundwater along the Foreshore zone, leaching to the immediate underlying groundwater was considered a plausible risk. We conducted neutral leaching analysis at this location. Results showed the PCB at this location did not leach under a neutral deionised water solution (to emulate rainfall), being less than the laboratory detection (<1.0 µg/L). This indicates there is a low risk of PCBs migrating from the Foreshore waste into the underlying watertable and then discharging into the Georges River aquatic ecosystem.

We conclude that existing data demonstrates that remediation to clean up contamination on the Foreshore is necessary because the presence of landfilling wastes and associated contamination poses a high health risk in localised areas to human and ecological health, although additional work would be required to delineate the extent of remediation required.

- Based on existing information, the proposed Foreshore development land is suitable for future open space public land use, subject to implementing the existing Foreshore RAP (1 July 2021) to cover the following items:
    - To the extent practicable, delineate contaminated wastes in both Areas 1 and 2, as well as other accessible locations along the Foreshore, to ascertain the full extent of landfilling of wastes.
    - In consideration of sensitive ecological receptors, and to the extent practicable so as not to cause irreversible damage to those receptors, remediate contaminated wastes used as landfilling in Area 1 and Area 2. These wastes contain concentrations of asbestos, heavy metals and PCBs at levels that pose a human and ecological health risk.
    - Management of anthropogenic waste strewn across and protruding from ground surfaces to remove the aesthetic impacts to the Foreshore. In particular, wastes and

general refuse that has washed up from Georges River accumulating within low lying swampy areas.

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10 Limitations

Sullivan Environmental Sciences Pty Ltd (Sullivan-ES) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Mirvac Homes (NSW) Pty Ltd and only those third parties who have been authorised in writing by Sullivan-ES to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

Where this Report indicates that information has been provided to Sullivan-ES by third parties, Sullivan-ES has made no independent verification of this information except as expressly stated in the Report. Sullivan-ES assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared between 17 December 2020 and 1 July 2021 and is based on the conditions encountered and information reviewed at the time of preparation. Sullivan-ES disclaims responsibility for any changes that may have occurred after this time.

Investigations undertaken in respect of this Report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and contamination may have been identified in this Report.

Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report.

This Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This Report does not purport to give legal advice.

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It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

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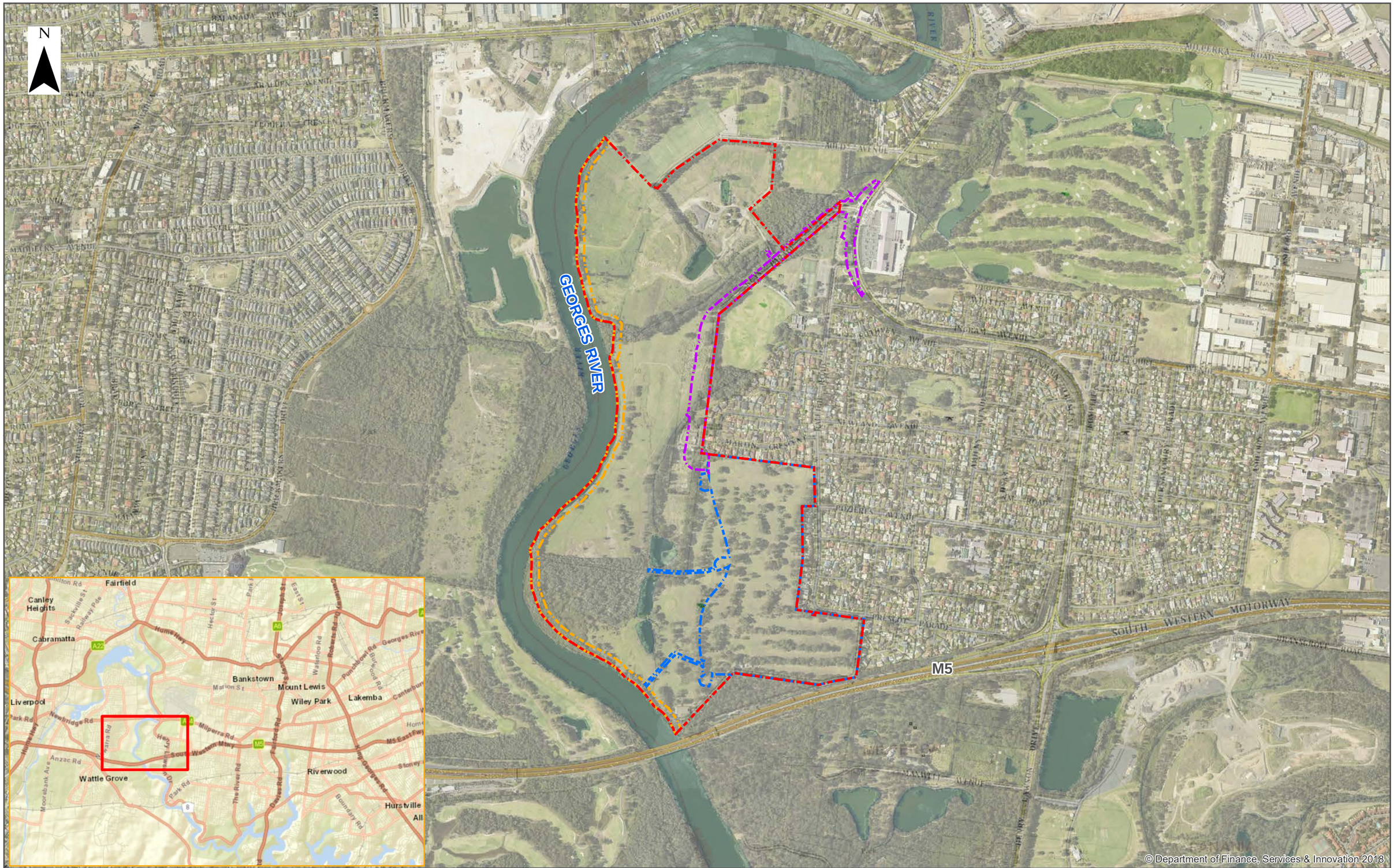
A

Appendix A Figures

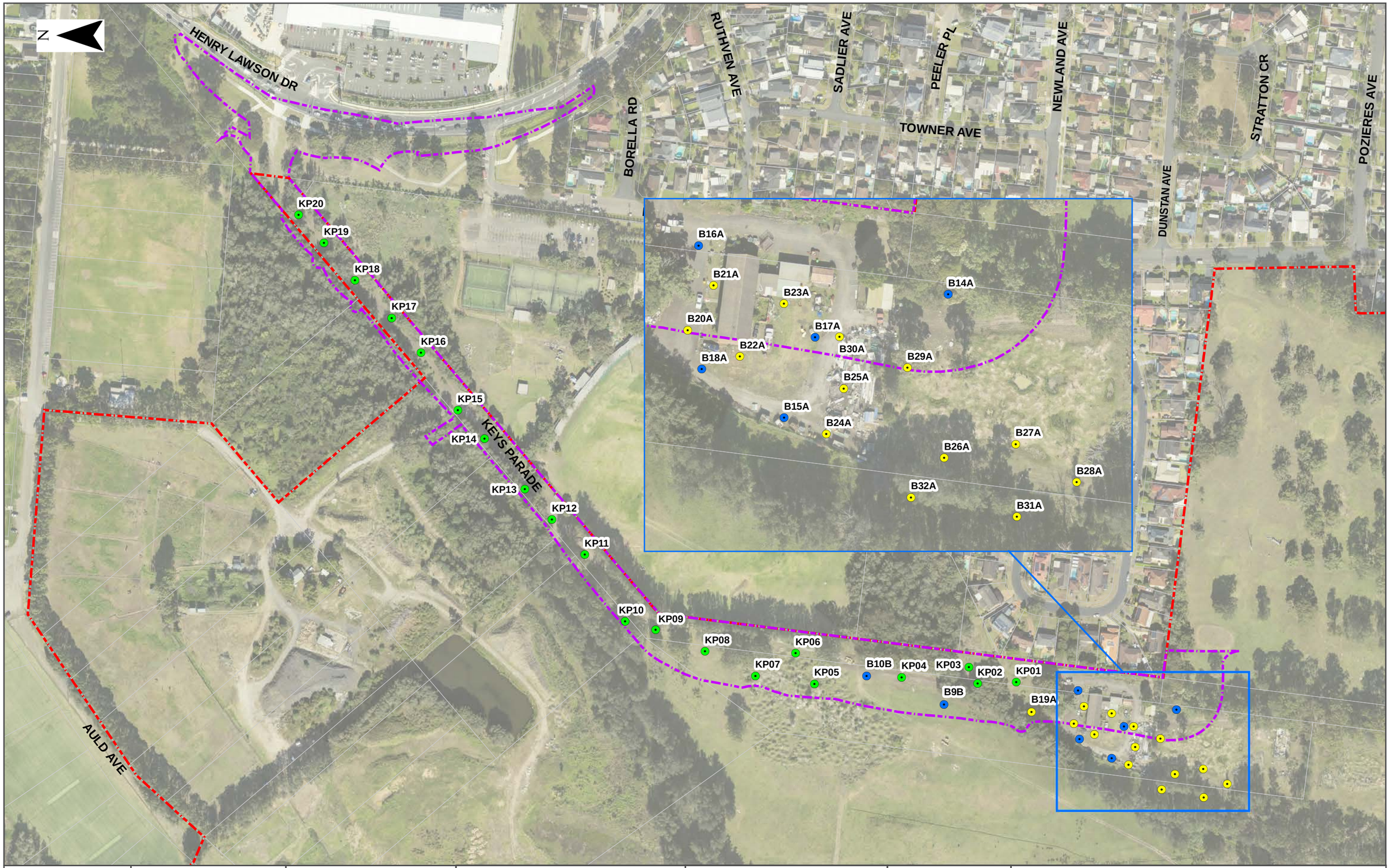


SULLIVAN environmental sciences	**Project No:** SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Keys Parade Area; Residential Area; ForeshoreArea	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 200 400 600 800 Meters
	Figure 1: Site Location			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Base Map © NSW Department Finance, Services & Innovation 2021 Topo Map: © Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
	Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			

	SULLIVAN environmental sciences	**Project No:** SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Residential Area; Property Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
		Figure 2: Residential Area Layout			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021
		Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			

	SULLIVAN environmental sciences	**Project No:** SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Residential Area; Sample Locations (May 2020); Sample Locations (Dec 2020)	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
		Figure 3: Residential Area Sampling Locations			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021
		Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			

	Project No: SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Keys Parade Area; Property Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
	Figure 4: Keys Parade Area Layout			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021
	Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			



	SULLIVAN environmental sciences	**Project No:** SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Keys Parade Area; Sample Locations (2016); Sample Locations (2018); Sample Locations (2020)	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
		Figure 5: Keys Parade Area Sampling Locations			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021
		Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			

	SULLIVAN environmental sciences	**Project No:** SES_539	**Title:** Contamination Assessment of Proposed Development Lands, Riverlands New Residential Project, Milperra NSW	**Legend:** Site Boundary; Foreshore Area; Property Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 100 200 300 400 Meters
		Figure 6: Foreshore Area Layout			Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021
		Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW			

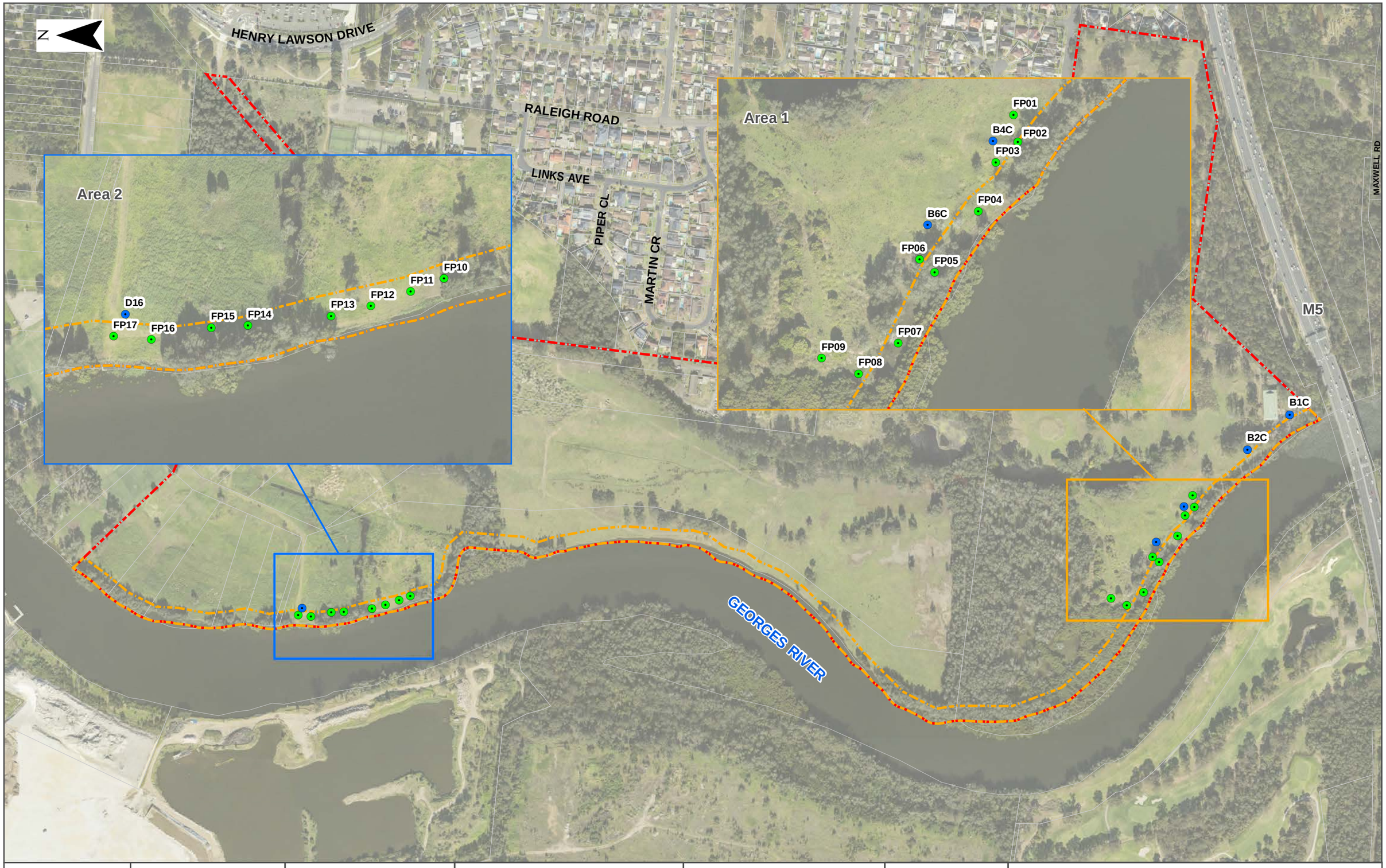


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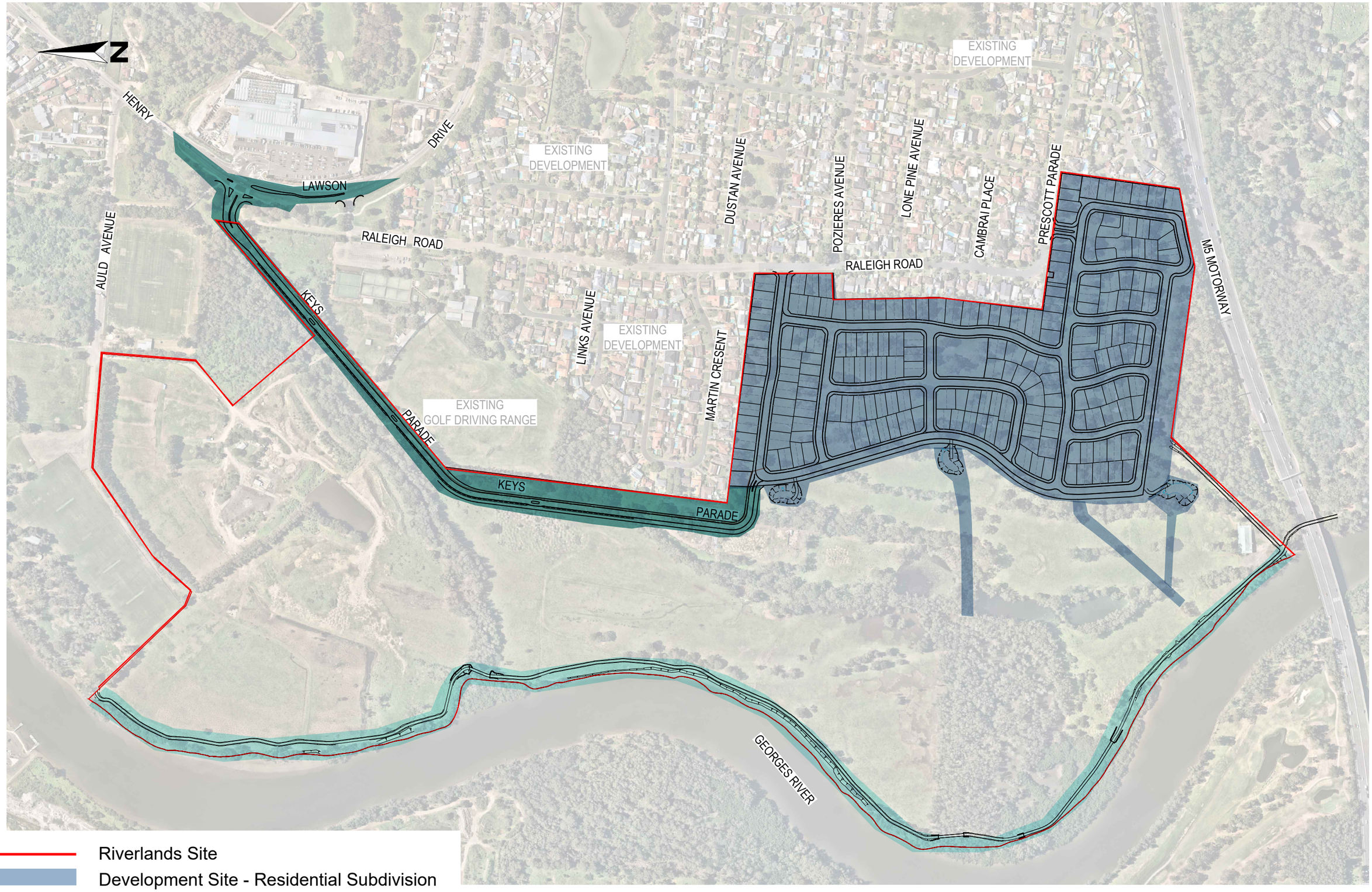
		Figure 7: Foreshore Area Sampling Locations				
		Client: Mirvac Homes (NSW) Pty Ltd	**Address:** Prescot Parade, Milperra, NSW		Date: 08 January 2021	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2021



Riverlands Site

Development Site - Residential Subdivision

Development Site - Keys Pde

Development Site - VPA & Bank Stabilisation

STATUS		Disclaimer and Copyright:		SCALE	TITLE		
FOR INFORMATION		ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.	calibre	0 25 50 75 100 125 150 175 200	RIVERLANDS GOLF COURSE MASTERPLAN		
AUTHORISED FOR ISSUE:		NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY UNLESS NOTED OTHERWISE.	©2021 calibregroup.com	SCALE 1:2500 (A1) SCALE 1:5000 (A3)	DRAWING	DATE	REV
BY: BRANA TOMIC Senior Project Manager	SIGN: DATE:				19-00908.05_MASTERPLAN_SK08_REV3	01/07/2021	3

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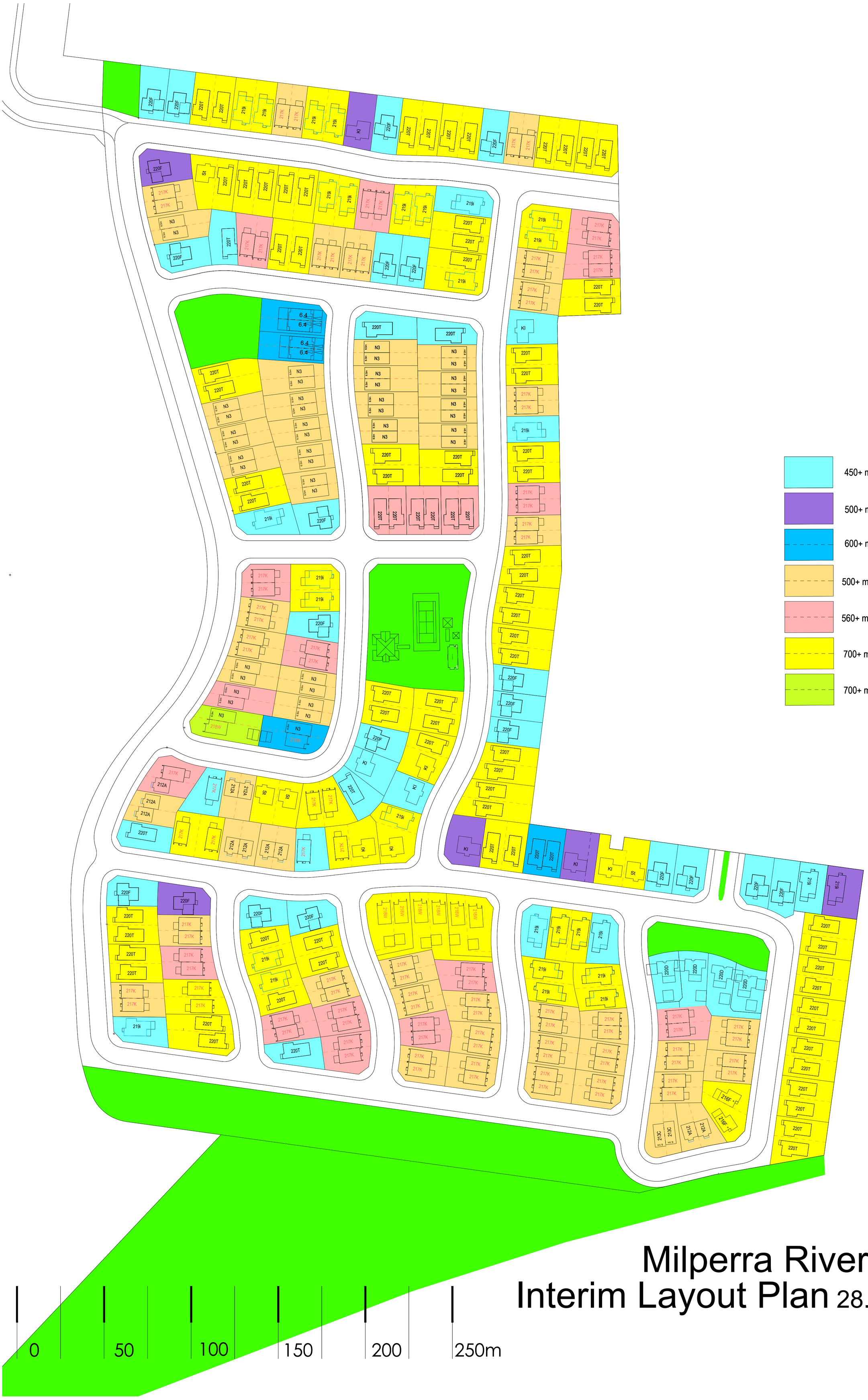

Milperra Riverlands
Interim Layout Plan 28.06.2021

B

Appendix B Results Summary Tables

Table 1
SES_539 - Residential Area Soil Results
Development Lands Contamination Assessment - Milperra

			Moisture Content	Asbestos Identification in Bulk Solids								Asbestos Identification in Soils							
				Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:
			%	Fibres	g/kg	g/kg	-	--	-	g	g/kg	Fibres	g/kg	g/kg	-	Detect	--	-	g
EQL			1	5	0.1	0.1				0.01		5	0.1	0.1					0.01
NEPM 2013 Table 1A(1) HILs Res A Soil			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide Delineation Samples - 2020																			
Field ID	**Date**	**Depth**																	
D01_0.1-0.2	23/12/2020	0.1 - 0.2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D01_0.4-0.5	23/12/2020	0.4 - 0.5	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D02_0.1-0.2	23/12/2020	0.1 - 0.2	5.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D02_0.4-0.5	23/12/2020	0.4 - 0.5	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D03_0.1-0.2	23/12/2020	0.1 - 0.2	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D04_0.2-0.3	23/12/2020	0.2 - 0.3	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QZ02	23/12/2020	-	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D04_0.4-0.5	23/12/2020	0.4 - 0.5	5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D05_0.2-0.3	23/12/2020	0.2 - 0.3	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D06_0.2-0.3	23/12/2020	0.2 - 0.3	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D06_0.4-0.5	23/12/2020	0.4 - 0.5	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D07_0.1-0.2	23/12/2020	0.1 - 0.2	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D08_0.1-0.2	23/12/2020	0.1 - 0.2	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Data Gap Investigation Samples - 2020																			
Sample ID	**Depth**	**Date**																	
TP01_0.4-0.5	0.4-0.5	4/02/2020	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q01	-	4/02/2020	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02_0.1-0.2	0.1-0.2	4/02/2020	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03_0.2-0.3	0.2-0.3	4/02/2020	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04_0.2-0.3	0.2-0.3	4/02/2020	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05_0.4-0.5	0.4-0.5	4/02/2020	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06_0.5-0.6	0.5-0.6	4/02/2020	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07_0-0.1	0.0-0.1	4/02/2020	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.2-0.3	0.2-0.3	4/02/2020	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q03	-	4/02/2020	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10_0.4-0.6	0.4-0.6	4/02/2020	6.8	-	-	-	-	-	-	-	-	No	No		No	No	28.2	Black soil.	A.SMYLIE
TP10_1.1-1.2	1.1-1.2	4/02/2020	6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11_0.5-0.6	0.5-0.6	4/02/2020	8.5	-	-	-	-	-	-	-	-	No	No	-	No	No	31.7	Black soil.	A.SMYLIE
TP12_0.6-0.7	0.6-0.7	4/02/2020	4.5	-	-	-	-	-	-	-	-	No	No	-	No	No	24.9	Black soil.	A.SMYLIE
TP12_0.9-1.0	0.9-1.0	4/02/2020	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13_0.1-0.2	0.1-0.2	4/02/2020	3.5	-	-	-	-	-	-	-	-	No	No	-	No	No	360	Mid brown soil.	A.SMYLIE
TP14_0.1-0.2	0.1-0.2	4/02/2020	5.4	-	-	-	-	-	-	-	-	No	No	-	No	No	282	Mid brown soil.	A.SMYLIE
Q04	-	4/02/2020	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15_0.1-0.2	0.1-0.2	4/02/2020	1.8	-	-	-	-	-	-	-	-	No	No	-	No	No	410	Mid brown soil.	A.SMYLIE
TP17_0.1-0.2	0.1-0.2	4/02/2020	2.2	-	-	-	-	-	-	-	-	No	No	-	No	No	443	Mid brown soil.	A.SMYLIE
TP18_0.2-0.4	0.2-0.4	4/02/2020	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19_0.1-0.2	0.1-0.2	4/02/2020	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21_0.3-0.4	0.3-0.4	5/02/2020	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22_0.4-0.5	0.4-0.5	5/02/2020	19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q05	-	5/02/2020	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23_0.1-0.2	0.1-0.2	5/02/2020	6.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26_0-0.1	0.0-0.1	5/02/2020	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27_0.4-0.5	0.4-0.5	5/02/2020	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP28_0.6-0.8	0.6-0.8	5/02/2020	13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP29_0-0.1	0.0-0.1	5/02/2020	3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30_0-0.1	0_0-0.1	5/02/2020	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32_0.5-0.6	0.5-0.6	5/02/2020	15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33_0.5-0.7	0.5-0.7	5/02/2020	12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP34_0-0.1	0.0-0.1	5/02/2020	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35_0-0.1	0.0-0.1	5/02/2020	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36_0.1-0.2	0.1-0.2	5/02/2020	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP37_0-0.1	0.0-0.1	5/02/2020	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP38_0.1-0.2	0.1-0.2	5/02/2020	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP39_0.2-0.3	0.2-0.3	5/02/2020	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q06	-	5/02/2020	5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40_0.4-0.6	0.4-0.6	5/02/2020	9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP41_0.3-0.4	0.3-0.4	5/02/2020	6.1	-	-	-	-	-	-	-	-	No	No	-	No	No	481	Mid brown soil.	A.SMYLIE
TP41_1.3-1.4	1.3-1.4	5/02/2020	6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP41_1.5-1.6	1.5-1.6	5/02/2020	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP45_0.1-0.2	0.1-0.2	5/02/2020	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP46_0.2-0.3	0.2-0.3	5/02/2020	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP47_0.1-0.2	0.1-0.2	5/02/2020	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q07	-	5/02/2020	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP48_0.2-0.3	0.2-0.3	5/02/2020	5.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP49_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	622	Mid brown soil.	A. SMYLIE
TP50_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	611	Mid brown soil.	A. SMYLIE
TP51_0.05-0.15	0.05-0.15	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	549	Mid brown soil.	A. SMYLIE
TP52_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	713	Mid brown soil.	A. SMYLIE
TP53_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	632	Mid brown soil.	A. SMYLIE
TP54_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	533	Mid brown soil.	A. SMYLIE
TP55_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	629	Mid brown soil.	A. SMYLIE
TP56_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	413	Mid brown soil.	A. SMYLIE
TP57_0.15-0.3	0.15-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	536	Mid brown soil.	A. SMYLIE

	Total Metals by ICP-AES							Hg by FIMS	TRH - Semivolatile Fraction								
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	5	1	2	5	5	2	5	0.1	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(1) HILs Res A Soil	100[#5]	20	100	6,000	300[#6]	400	7,400	40[#4]	-	-	-	-	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)	-	-	-	-	-	-	-	-	-	3,300	4,500	6,300	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m	-	-	-	-	-	-	-	-	-	110[#8]	-	-	-	-	-	-	-
1-2m	-	-	-	-	-	-	-	-	-	240[#8]	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space	100[#10]	-	510	230	1100	270	770	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil	-	-	-	-	-	-	-	-	120[#11]	[#12]	300	2,800	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil	-	-	-	-	-	-	-	-	1,000[#13]	-	2,500	10,000	-	-	-	-	-
Pesticide Delineation Samples - 2020																	
D01_0.1-0.2	<5	1	3	5	15	<2	49	0.6	-	-	-	-	-	-	-	-	-
D01_0.4-0.5	10	<1	5	5	5	<2	28	0.5	-	-	-	-	-	-	-	-	-
D02_0.1-0.2	6	<1	<2	<5	<5	<2	9	0.1	-	-	-	-	-	-	-	-	-
D02_0.4-0.5	<5	<1	2	<5	<5	<2	<5	<0.1	-	-	-	-	-	-	-	-	-
D03_0.1-0.2	<5	7	4	11	68	2	63	0.4	-	-	-	-	-	-	-	-	-
D04_0.2-0.3	9	<1	<2	<5	<5	<2	77	0.2	-	-	-	-	-	-	-	-	-
QZ02	41	1	6	19	64	4	242	4.1	-	-	-	-	-	-	-	-	-
RPD%	-	-	-	-	-	-	***103***	-	-	-	-	-	-	-	-	-	-
D04_0.4-0.5	6	<1	<2	<5	<5	<2	18	<0.1	-	-	-	-	-	-	-	-	-
D05_0.2-0.3	<5	<1	2	<5	<5	<2	82	<0.1	-	-	-	-	-	-	-	-	-
D06_0.2-0.3	<5	4	2	<5	22	<2	207	0.1	-	-	-	-	-	-	-	-	-
D06_0.4-0.5	<5	3	<2	<5	<5	<2	15	<0.1	-	-	-	-	-	-	-	-	-
D07_0.1-0.2	<5	<1	2	5	6	<2	14	0.1	-	-	-	-	-	-	-	-	-
D08_0.1-0.2	<5	7	4	8	12	2	54	2.6	-	-	-	-	-	-	-	-	-
Data Gap Investigation Samples - 2020																	
TP01_0.4-0.5	<5	<1	4	<5	<5	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
Q01	<5	<1	6	<5	<5	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP02_0.1-0.2	<5	<1	5	<5	18	<2	18	0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP03_0.2-0.3	<5	<1	3	<5	<5	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP04_0.2-0.3	<5	<1	8	<5	7	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP05_0.4-0.5	<5	<1	7	7	22	5	24	0.6	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP06_0.5-0.6	<5	<1	2	<5	<5	<2	7	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP07_0-0.1	<5	<1	4	5	9	<2	14	0.3	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP08_0.2-0.3	<5	<1	5	8	5	<2	11	0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
Q03	<4	<0.4	5	7	6	4	14	<0.1	<25	<50	<100	<100	<50	<50	<100	<100	<50
TP10_0.4-0.6	<5	<1	8	16	<5	12	7	0.7	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP10_1.1-1.2	<5	<1	6	<5	<5	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP11_0.5-0.6	<5	<1	6	21	7	22	10	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP12_0.6-0.7	<5	<1	6	22	13	16	15	0.2	<10	<50	180	<100	180	<50	120	<100	120
TP12_0.9-1.0	<5	<1	4	<5	<5	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP13_0.1-0.2	<5	<1	4	7	37	<2	87	3.4	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP14_0.1-0.2	16	<1	3	14	38	4	382	25.9	<10	<50	110	110	220	<50	<100	110	110
Q04	15	<1	3	12	33	3	388	17.5	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP15_0.1-0.2	16	3	4	11	52	4	158	0.7	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP17_0.1-0.2	35	1	3	14	26	<2	112	4.9	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP18_0.2-0.4	<5	<1	5	<5	7	<2	7	0.1	-	-	-	-	-	-	-	-	-
TP19_0.1-0.2	<5	<1	7	<5	8	<2	16	0.1	-	-	-	-	-	-	-	-	-
TP21_0.3-0.4	<5	<1	<2	<5	<5	<2	10	0.4	-	-	-	-	-	-	-	-	-
TP22_0.4-0.5	5	<1	11	14	11	4	29	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
Q05	11	<0.4	13	15	13	4	14	<0.1	-	-	-	-	-	-	-	-	-
TP23_0.1-0.2	<5	2	7	8	8	<2	20	3.7	-	-	-	-	-	-	-	-	-
TP26_0-0.1	<5	<1	3	6	12	<2	20	0.2	-	-	-	-	-	-	-	-	-
TP27_0.4-0.5	<5	<1	6	<5	31	<2	18	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP28_0.6-0.8	<5	<1	15	13	14	<2	6	<0.1	-	-	-	-	-	-	-	-	-
TP29_0-0.1	<5	1	8	8	9	<2	20	4.4	-	-	-	-	-	-	-	-	-
TP30_0-0.1	<5	<1	9	6	8	<2	12	6.1	-	-	-	-	-	-	-	-	-
TP32_0.5-0.6	<5	<1	7	<5	9	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP33_0.5-0.7	<5	<1	8	30	54	7	118	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP34_0-0.1	<5	<1	13	11	10	<2	16	4.1	-	-	-	-	-	-	-	-	-
TP35_0-0.1	<5	<1	2	<5	6	<2	7	0.2	-	-	-	-	-	-	-	-	-
TP36_0.1-0.2	<5	<1	2	<5	6	<2	7	<0.1	-	-	-	-	-	-	-	-	-
TP37_0-0.1	<5	<1	2	<5	9	<2	12	<0.1	-	-	-	-	-	-	-	-	-
TP38_0.1-0.2	<5	<1	<2	<5	<5	<2	5	0.5	-	-	-	-	-	-	-	-	-
TP39_0.2-0.3	<5	1	2	<5	5	<2	11	17.8	-	-	-	-	-	-	-	-	-
Q06	<5	<1	4	5	5	<2	9	9.2	-	-	-	-	-	-	-	-	-
TP40_0.4-0.6	6	<1	4	11	25	<2	22	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP41_0.3-0.4	<5	<1	4	<5	8	2	7	4.2	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP41_1.3-1.4	<5	<1	6	26	13	20	15	0.6	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP41_1.5-1.6	<5	<1	7	<5	6	<2	<5	<0.1	<10	<50	<100	<100	<50	<50	<100	<100	<50
TP45_0.1-0.2	<5	<1	6	<5	14	2	27	1.3	-	-	-	-	-	-	-	-	-
TP46_0.2-0.3	<5	<1	3	<5	5	<2	6	<0.1	-	-	-	-	-	-	-	-	-
TP47_0.1-0.2	<5	<1	<2	<5	<5	<2	<5	0.3	-	-	-	-	-	-	-	-	-
Q07	<4	<0.4	2	2	3	1	9	0.3	-	-	-	-	-	-	-	-	-
TP48_0.2-0.3	<5	2	4	9	8	<2	20	6.6	-	-	-	-	-	-	-	-	-
TP49_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP50_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP51_0.05-0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP52_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP53_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP54_0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP55_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP56_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP57_0.15-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	TRH Volatiles/BTEX											PCB	PAH/Phenols (SIM										
	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil	-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)	-	4,400	-	1400	100	14,000	4,500	-	-	12,000	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m	-	45[#9]	-	3	0.5	160	55	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m	-	70[#9]	-	NL (9)	0.5	220	NL (64)	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil	-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	-	0.7	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil	700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide Delineation Samples - 2020																							
D01_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D01_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D02_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D02_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D03_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D04_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
QZ02	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
RPD%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D04_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D05_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D06_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D06_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D07_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
D08_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-
Data Gap Investigation Samples - 2020																							
TP01_0.4-0.5	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Q01	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP02_0.1-0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP03_0.2-0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP04_0.2-0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP05_0.4-0.5	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP06_0.5-0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP07_0-0.1	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP08_0.2-0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Q03	<25	<25	<25	<3	<0.2	<0.5	<1	<2	<1	<3	<1	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
TP10_0.4-0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP10_1.1-1.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP11_0.5-0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP12_0.6-0.7	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
TP12_0.9-1.0	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP13_0.1-0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP14_0.1-0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Q04	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP15_0.1-0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP17_0.1-0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP18_0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21_0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22_0.4-0.5	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Q05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27_0.4-0.5	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP28_0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP29_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32_0.5-0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP33_0.5-0.7	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP34_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP37_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP38_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP39_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40_0.4-0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP41_0.3-0.4	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP41_1.3-1.4	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP41_1.5-1.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP45_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP46_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP47_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP48_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP49_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP50_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP51_0.05-0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP52_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP53_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP54_0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP55_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP56_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP57_0.15-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
SES_539 - Residential Area Soil Results
Development Lands Contamination Assessment - Milperra

				Asbestos Identification in Bulk Solids								Asbestos Identification in Soils								Total Metals by ICP-AES							Hg by FIMS	TRH - Semivolatile Fraction									TRH Volatiles/BTEX										PCB	PAH/Phenols (SIM										
			Moisture Content	Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
			%	Fibres	g/kg	g/kg	-	--	-	g	g/kg	Fibres	g/kg	g/kg	-	Detect	--	-	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	5	0.1	0.1				0.01		5	0.1	0.1					0.01	5	1	2	5	5	2	5	0.1	50	50	100	100	50	50	100	100	50	10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-	100[#5]	20	100	6,000	300[#6]	400	7,400	40[#4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,300	4,500	6,300	-	-	-	-	-	-	4,400	-	1400	100	14,000	4,500	-	-	12,000	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110[#8]	-	-	-	-	-	-	-	-	45[#9]	-	3	0.5	160	55	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240[#8]	-	-	-	-	-	-	-	-	70[#9]	-	NL (9)	0.5	220	NL (64)	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100[#10]	-	510	230	1100	270	770	-	-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120[#11]	[#12]	300	2,800	-	-	-	-	-	-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	0.7	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000[#11]	-	2,500	10,000	-	-	-	-	-	700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP58_0.15-0.3	0.15-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	555	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP59_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	652	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP60_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	508	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP57_0.3-0.4	0.3-0.4	18/02/2020	8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	4	9	6	7	14	0.1	<10	<50	150	120	270	<50	<100	120	120	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.5	<0.5	0.6
TP61_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	524	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP63_0.05-0.15	0.05-0.15	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	601	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP64_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	468	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP65_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	451	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP66_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	426	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP67_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	478	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP68_0.0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	567	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP70_0.0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	429	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP71_0.0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	422	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP73_0.0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	448	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP74_0.0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	336	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP75_0.0-0.1	0.0-0.1	18/02/2020	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	<2	<5	<5	<2	<5	0.4	<10	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP76_0.0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	457	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP77_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	532	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP78_0.2-0.4	0.2-0.4	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	469	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP79_0.4-0.5	0.4-0.5	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	439	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP80_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	374	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP81_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	394	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP83_0.2-0.4	0.2-0.4	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	410	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP84_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	394	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP85_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	297	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP86_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	444	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP87_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	No	No	-	No	No	350	Mid brown soil.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2

Table 1
SES_539 - Residential Area Soil Results
Development Lands Contamination Assessment - Milperra

			M)									Pesticides by GCMS																																										
			Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil			-	-		-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-	6	-	-	-	-	50	-	-	-	160	-	-	-		240	-	-	-	-	-	270	-	-	-	10	-	-	-	-	-	-	6	-	10	-	300	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)			-	-	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	NL(9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	170	-	-	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	180	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pesticide Delineation Samples - 2020																																																							
Field ID	**Date**	**Depth**																																																					
D01_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D01_0.4-0.5	23/12/2020	0.4 - 0.5	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D02_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D02_0.4-0.5	23/12/2020	0.4 - 0.5	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D03_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D04_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
QZ02	23/12/2020	-	-	-	-	-	-	-	-	-	-	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
	RPD%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D04_0.4-0.5	23/12/2020	0.4 - 0.5	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D05_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D06_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D06_0.4-0.5	23/12/2020	0.4 - 0.5	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D07_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
D08_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Data Gap Investigation Samples - 2020																																																							
Sample ID	**Depth**	**Date**																																																					
TP01_0.4-0.5	0.4-0.5	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q01	-	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02_0.1-0.2	0.1-0.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP03_0.2-0.3	0.2-0.3	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP04_0.2-0.3	0.2-0.3	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP05_0.4-0.5	0.4-0.5	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	1.44	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	1.25	0.67	0.58	<0.05	<0.05	<0.05	<0.05	0.1	0.4	1.94	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP06_0.5-0.6	0.5-0.6	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP07_0-0.1	0.0-0.1	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.06	0.06	<0.05	<0.05	<0.05	<0.05	0.05	<0.2	0.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP08_0.2-0.3	0.2-0.3	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q03	-	4/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10_0.4-0.6	0.4-0.6	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP10_1.1-1.2	1.1-1.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP11_0.5-0.6	0.5-0.6	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP12_0.6-0.7	0.6-0.7	4/02/2020	<0.5	<0.5	<0.5	0.6	0.9	<0.5	0.6	1.2	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP12_0.9-1.0	0.9-1.0	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP13_0.1-0.2	0.1-0.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP14_0.1-0.2	0.1-0.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.08	<0.05	<0.05	0.56	<0.05	<0.05	<0.05	<0.05	6.36	2.65	3.71	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.08	<0.05	<0.05	<0.05	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q04	-	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15_0.1-0.2	0.1-0.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.6	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	0.33	0.16	0.17	<0.05	<0.05	<0.05	<0.05	0.13	1.4	2.13	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP17_0.1-0.2	0.1-0.2	4/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.07	<0.05	<0.05	2.16	<0.05	<0.05	<0.05	<0.05	**57.4**	23.6	33.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.07	<0.05	<0.05	<0.05	2.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP18_0.2-0.4	0.2-0.4	4/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP19_0.1-0.2	0.1-0.2	4/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP21_0.3-0.4	0.3-0.4	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	0.08	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP22_0.4-0.5	0.4-0.5	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q05	-	5/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23_0.1-0.2	0.1-0.2	5/02/2020	-	-	-	-	-	-	-	-	-	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.46	0.24	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP26_0-0.1	0.0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP27_0.4-0.5	0.4-0.5	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP28_0.6-0.8	0.6-0.8	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP29_0-0.1	0.0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	0.19	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	2.17	1.09	1.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.19	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP30_0-0.1	0_0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	0.15	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	2.19	1.07	1.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.15	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP32_0.5-0.6	0.5-0.6	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP33_0.5-0.7	0.5-0.7	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP34_0-0.1	0.0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	0.27	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	0.97	0.48	0.49	<0.05	<0.05	<0.05	<0.05	0.06	0.3	0.63	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP35_0-0.1	0.0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP36_0.1-0.2	0.1-0.2	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP37_0-0.1	0.0-0.1	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP38_0.1-0.2	0.1-0.2	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.65	0.32	0.33	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP39_0.2-0.3	0.2-0.3	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	1.77	0.81	0.96	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q06	-	5/02/2020	-	-	-	-	-	-	-	-	-	0.07	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	2.66	1.26	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.07	<0.05	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP40_0.4-0.6	0.4-0.6	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP41_0.3-0.4	0.3-0.4	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	<0.05	<0.05	0.31	0.17	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP41_1.3-1.4	1.3-1.4	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP41_1.5-1.6	1.5-1.6	5/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP45_0.1-0.2	0.1-0.2	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP46_0.2-0.3	0.2-0.3	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP47_0.1-0.2	0.1-0.2	5/02/2020	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
Q07	-	5/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP48_0.2-0.3	0.2-0.3	5/02/2020	-	-	-	-	-	-	-	-	-	0.1	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	2.64	1.16	1.48	<0.05	<0.05	<0.05	<0.05	0.08	0.2	0.38	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP49_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP50_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP51_0.05-0.15	0.05-0.15	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP52_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP53_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP54_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP55_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP56_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP57_0.15-0.3	0.15-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
SES_539 - Residential Area Soil Results
Development Lands Contamination Assessment - Milperra

			A)									Pesticides by GCMS																																													
			Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil			-	-		-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-	6	-	-	-	-	50	-	-	-	160	-	-	-		240	-	-	-	-	270	-	-	-	10	-	-	-	-	-	-	6	-	10	-	300	-	-	-	-	-
CRC Care HSL-A Residential (Low Density)			-	-	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	NL(9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	170	-	-	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	180	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP58_0.15-0.3	0.15-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP59_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP60_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP57_0.3-0.4	0.3-0.4	18/02/2020	<0.5	<0.5	<0.5	1.2	0.8	<0.5	0.6	1.2	3.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP61_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP63_0.05-0.15	0.05-0.15	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP64_0.05-0.2	0.05-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP65_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP66_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP67_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP68_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP70_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP71_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP73_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP74_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP75_0-0.1	0.0-0.1	18/02/2020	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
TP76_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP77_0.1-0.2	0.1-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP78_0.2-0.4	0.2-0.4	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP79_0.4-0.5	0.4-0.5	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP80_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP81_0.1-0.3	0.1-0.3	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP83_0.2-0.4	0.2-0.4	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP84_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP85_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP86_0-0.2	0.0-0.2	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP87_0-0.1	0.0-0.1	18/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Comments
#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Scl
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fra
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available her

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			Moisture Content	Asbestos Identification in Bulk Solids								Asbestos Identification in Soils								Total Metals by ICP-AES							Hg by FIMS	TRH - Semivolatile Fraction								
			Moisture Content	Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
			%	Fibres	g/kg	g/kg	-	--	-	g	g/kg	Fibres	g/kg	g/kg	-	Detect	--	-	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	5	0.1	0.1				0.01		5	0.1	0.1					0.01	5	1	2	5	5	2	5	0.1	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(1) HILs C - Open Space			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-	300[#5]	90	300	17,000	600[#6]	1,200	30,000	80[#4]	-	-	-	-	-	-	-	-	-
CRC Care HSL-C Open Space, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3800	5300	7400	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (560)	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (560)	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100[#10]	-	510	230	1100	270	770	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120[#11]	[#12]	300	2,800	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000[#13]	-	2,500	10,000	-	-	-	-
Keys Parade Samples																																				
Field ID	**Date**	**Depth**																																		
KP01_0.5-0.6	17/12/2020	0.5 - 0.6	6.8	-	-	-	-	-	-	-	-	No	No	NA	No	No	48.9	Mid brown soil.	A. SMYLIE	6	<1	13	23	36	12	122	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
DUPA	17/12/2020		6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<1	14	17	34	12	117	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***4.2***	-	-	-	-	-	-	-	-	-	-
KP02_0.2-0.3	17/12/2020	0.2 - 0.3	5.9	-	-	-	-	-	-	-	-	No	No	NA	No	No	63.4	Mid brown soil.	A. SMYLIE	<5	<1	16	9	11	19	27	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP03_0.7-0.8	17/12/2020	0.7 - 0.8	6.6	-	-	-	-	-	-	-	-	No	No	NA	No	No	69.9	Mid brown soil.	A. SMYLIE	<5	<1	10	17	11	15	23	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP04_0.4-035	17/12/2020	0.4 - 35	16.5	-	-	-	-	-	-	-	-	No	No	NA	No	No	30.4	Mid brown soil.	A. SMYLIE	<5	<1	8	11	6	10	13	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP05_0.5-0.6	17/12/2020	0.5 - 0.6	3.2	-	-	-	-	-	-	-	-	No	No	NA	No	No	52.3	Mid brown soil.	A. SMYLIE	<5	<1	5	10	25	3	83	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
FOA	17/12/2020			Yes	Ch + Am	N/A	No	No	4.5	One piece of asbestos cement sheeting approximately 50x20x10mm.	A. SMYLIE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP06_0.3-0.4	17/12/2020	0.3 - 0.4	1.1	-	-	-	-	-	-	-	-	No	No	NA	No	No	52.6	Mid brown soil.	A. SMYLIE	<5	<1	<2	<5	<5	<2	20	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP06_0.9-1.0	17/12/2020	0.9 - 1	14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	<1	46	34	87	34	130	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP07_0.5-0.6	17/12/2020	0.5 - 0.6	3.1	-	-	-	-	-	-	-	-	No	No	NA	No	No	55.6	Mid brown soil.	A. SMYLIE	<5	<1	4	6	15	2	36	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP08_0.2-0.3	17/12/2020	0.2 - 0.3	6.9	-	-	-	-	-	-	-	-	No	No	NA	No	No	32.8	Mid brown soil.	A. SMYLIE	<5	<1	10	12	37	8	38	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP09_0.3-0.4	17/12/2020	0.3 - 0.4	4.7	-	-	-	-	-	-	-	-	No	No	NA	No	No	72.6	Mid brown soil.	A. SMYLIE	13	<1	10	17	34	6	61	0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP10_0.2-0.3	17/12/2020	0.2 - 0.3	4.8	-	-	-	-	-	-	-	-	No	No	NA	No	No	76.6	Mid brown soil.	A. SMYLIE	<5	<1	12	18	32	9	68	0.2	<50	<50	<100	<100	<50	<50	<100	<100	<50
DUPB	17/12/2020		5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	14	17	28	10	64	7.4	<50	<50	100	<100	100	<50	<100	<100	<50
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***6.1***	-	-	-	-	-	-	-	-	-	-
KP11_0.1-0.2	17/12/2020	0.1 - 0.2	7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<1	10	6	14	6	17	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP12_0.1-0.2	17/12/2020	0.1 - 0.2	7.1	-	-	-	-	-	-	-	-	No	No	NA	No	No	54.2	Mid brown soil.	A. SMYLIE	7	<1	26	21	23	25	51	<0.1	<50	<50	260	170	430	<50	110	210	320
KP14_0.1-0.2	17/12/2020	0.1 - 0.2	11.8	-	-	-	-	-	-	-	-	No	No	NA	No	No	40.3	Mid brown soil.	A. SMYLIE	7	<1	17	8	16	6	18	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP15_0.1-0.2	17/12/2020	0.1 - 0.2	10.9	-	-	-	-	-	-	-	-	No	No	NA	No	Yes	69.3	Mid brown soil.	A. SMYLIE	<5	<1	33	525	117	30	229	<0.1	<50	<50	1,770	470	2,240	<50	1,190	880	2,070
KP16_0.2-0.3	17/12/2020	0.2 - 0.3	14.7	-	-	-	-	-	-	-	-	No	No	NA	No	No	48.8	Mid brown soil.	A. SMYLIE	7	<1	36	22	96	29	70	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP17_0.1-0.2	17/12/2020	0.1 - 0.2	6.3	-	-	-	-	-	-	-	-	No	No	NA	No	No	51.2	Mid brown soil.	A. SMYLIE	5	<1	15	18	49	14	69	<0.1	<50	<50	190	150	340	<50	100	150	250
KP18_0.1-0.2	17/12/2020	0.1 - 0.2	7	-	-	-	-	-	-	-	-	No	No	NA	No	No	67.8	Mid brown soil.	A. SMYLIE	<5	<1	19	18	37	16	43	<0.1	<50	<50	150	<100	150	<50	<100	<100	<50
KP19_0.1-0.2	17/12/2020	0.1 - 0.2	10.2	-	-	-	-	-	-	-	-	No	No	NA	No	No	68.3	Mid brown soil.	A. SMYLIE	6	<1	28	21	33	23	53	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
KP20_0.1-0.2	17/12/2020	0.1 - 0.2	7.8	-	-	-	-	-	-	-	-	No	No	NA	No	No	61.3	Mid brown soil.	A. SMYLIE	6	<1	24	16	28	14	47	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
DUPC	17/12/2020	-	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<1	30	21	29	23	48	<0.1	<50	<50	110	<100	110	<50	<100	<100	<50
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***22.2***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 4	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC 4	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Delineation Assessment 2018																																				
Field ID	**Date**	**Depth**																																		
B19A_0.3-0.5	27/11/2018	0.3 - 0.5	4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	5	7	<5	9	7	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
Q100	27/11/2018		1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	9	7	6	12	10	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B19A_0.9-1.1	27/11/2018	0.9 - 1.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	35	7	6	19	12	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B20A_1.3-1.6	27/11/2018	1.3 - 1.6	12.6	-	-	-	-	-	-	-	-	No	No	NA	No	No	42.6	Dark brown sandy soil.	A. SMYLIE	<5	<1	11	8	8	9	14	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B20A_3.1-3.4	27/11/2018	3.1 - 3.4	24.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	3	9	13	6	25	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B21A_0.1-0.2	27/11/2018	0.1 - 0.2	5.2	-	-	-	-	-	-	-	-	No	No	NA	No	No	40.5	Dark brown sandy soil.	A. SMYLIE	<5	<1	8	24	39	10	38	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B22A_1.4-1.5	27/11/2018	1.4 - 1.5	23.3	-	-	-	-	-	-	-	-	No	No	NA	No	No	20.1	Mid brown sandy soil.	A. SMYLIE	<5	<1	<2	<5	<5	4	9	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B22A_3.0-3.5	27/11/2018	3 - 3.5	32.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	<2	<5	<5	3	7	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B23A - No Sample																																				
B24A - No Sample?																																				
B25A_0.9-1.1	27/11/2018	0.9 - 1.1	22	-	-	-	-	-	-	-	-	No	No	NA	No	No	22.4	Grey sandy soil.	A. SMYLIE	<5	<1	<2	<5	<5	3	6	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B26A_0.9-1.1	27/11/2018	0.9 - 1.1	15.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	18	31	8	68	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B27A_1.5-1.7	27/11/2018	1.5 - 1.7	23.6	-	-	-	-	-	-	-	-	No	No	NA	No	No	29.5	Grey sandy soil.	A. SMYLIE	<5	<1	7	53	41	8	47	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B30A_0.3-0.5	27/11/2018	0.3 - 0.5	21.9	-	-	-	-	-	-	-	-	No	No	NA	No	No	28.9	Dark grey sandy soil.	A. SMYLIE	<5	<1	3	9	10	5	20	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
Q101	27/11/2018		20.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	4	14	20	6	27	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B31A_0.2-0.4	27/11/2018	0.2 - 0.4	3.8	-	-	-	-	-	-	-	-	No	No	NA	No	No	39.1	Mid brown sandy soil.	A. SMYLIE	<5	<1	5	11	8	6	24	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			Moisture Content	Asbestos Identification in Bulk Solids								Asbestos Identification in Soils								Total Metals by ICP-AES							Hg by FIMS	TRH - Semivolatile Fraction								
			Moisture Content	Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
			%	Fibres	g/kg	g/kg	-	--	-	g	g/kg	Fibres	g/kg	g/kg	-	Detect	--	-	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	5	0.1	0.1				0.01		5	0.1	0.1					0.01	5	1	2	5	5	2	5	0.1	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(1) HILs C - Open Space			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-	300[#5]	90	300	17,000	600[#6]	1,200	30,000	80[#4]	-	-	-	-	-	-	-	-	-
CRC Care HSL-C Open Space, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3800	5300	7400	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (560)	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (560)	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100[#10]	-	510	230	1100	270	770	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120[#11]	[#12]	300	2,800	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000[#13]	-	2,500	10,000	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																																				
Sample ID	**Depth**	**Sample date:**																																		
B14A_0.4-0.6	0.4-0.6	26/02/2016	7.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	7	6	8	5	16	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B15A_0.5	0.5	29/02/2016	17.6	-	-	-	-	-	-	-	-	No	-	-	-	-	20.1	Mid grey clay soil with grey rocks and slag debris.	S.SPOONER	<5	<1	10	12	11	17	31	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B15A_2.8-3.0	2.8-3.0	29/02/2016	29.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	3	8	<5	7	12	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B16A_0.1-0.3	0.1-0.3	29/02/2016	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<1	85	30	29	53	73	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B17A_0.2	0.2	29/02/2016	15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	6	13	22	8	35	0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B18A_1.3	1.3	29/02/2016	13.6	-	-	-	-	-	-	-	-	Yes	-	Ch + Am	-	-	38.9	Dark grey soil with slag debris with one loose bundle of friable asbestos fibres approx 3 x 1 x 0.5 mm.	S.SPOONER	<5	<1	14	20	29	14	56	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B18A_3.0	3	29/02/2016	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<1	8	5	8	3	6	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B9B_0.6-0.8	0.6-0.8	26/02/2016	23.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<1	4	<5	6	<2	<5	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50
B10B_0.6-0.9	0.6-0.9	26/02/2016	28.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	<1	16	13	25	9	22	<0.1	<50	<50	110	<100	110	<50	<100	<100	<50
BSP1_1	Stockpile	29/02/2016	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	<1	6	126	321	4	266	1.3	<50	<50	<100	<100	<50	<50	<100	<100	<50
Q3	Stockpile	29/02/2016	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	<1	6	79	384	5	303	1.4	<50	<50	<100	<100	<50	<50	<100	<100	<50
BSP1_4	Stockpile	29/02/2016	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	<1	18	53	155	21	284	0.3	<50	<50	140	<100	140	<50	<100	<100	<50
BSP1_7	Stockpile	29/02/2016	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	4	10	32	5	91	<0.1	<50	<50	140	<100	140	<50	<100	<100	<50
BSP1_8	Stockpile	29/02/2016	6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<1	23	6	15	2	15	<0.1	<50	<50	<100	<100	<50	<50	<100	<100	<50

* A Non Detect Multiplier of 0.5 has been applied.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered.
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			TRH Volatiles/BTEX											PCB	PAH/Phenols (SIM)																							
			C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-
CRC Care HSL-C Open Space, Sand			-	5100	-	2200	140	21000	5900	-	-	17000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
1-2m			-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	-	180	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Keys Parade Samples																																						
Field ID	**Date**	**Depth**																																				
KP01_0.5-0.6	17/12/2020	0.5 - 0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05
DUPA	17/12/2020		<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP02_0.2-0.3	17/12/2020	0.2 - 0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP03_0.7-0.8	17/12/2020	0.7 - 0.8	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05
KP04_0.4-035	17/12/2020	0.4 - 35	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP05_0.5-0.6	17/12/2020	0.5 - 0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05
FOA	17/12/2020		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP06_0.3-0.4	17/12/2020	0.3 - 0.4	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP06_0.9-1.0	17/12/2020	0.9 - 1	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP07_0.5-0.6	17/12/2020	0.5 - 0.6	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05
KP08_0.2-0.3	17/12/2020	0.2 - 0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.8	0.6	1.2	<0.5	2.1	-	-	-
KP09_0.3-0.4	17/12/2020	0.3 - 0.4	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	0.9	1	1.1	0.7	<0.5	0.8	<0.5	2.2	<0.5	0.5	<0.5	1.3	2.1	1.5	1.8	1.3	10.6	<0.05	<0.05	<0.05
KP10_0.2-0.3	17/12/2020	0.2 - 0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	0.5	0.6	0.7	<0.5	<0.5	0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	1.1	1	1.3	0.7	4.4	-	-	-
DUPB	17/12/2020		<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.9	0.6	1.2	<0.5	2.3	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP11_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP12_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	0.9	1.6	1.3	1.5	0.6	0.6	1.4	<0.5	3.9	<0.5	0.5	<0.5	3.2	3.3	2	2.2	1.7	18.8	<0.05	<0.05	<0.05
KP14_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
KP15_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05
KP16_0.2-0.3	17/12/2020	0.2 - 0.3	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	1	0.8	1	<0.5	<0.5	0.8	<0.5	2.2	<0.5	<0.5	<0.5	1.6	2.2	1.3	1.6	1	9.6	-	-	-
KP17_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	0.8	1	1.2	0.7	<0.5	0.8	<0.5	1.8	<0.5	0.5	<0.5	0.7	1.8	1.5	1.8	1.3	9.3	-	-	-
KP18_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	0.5	1.8	2	2.2	1.2	0.8	1.6	<0.5	3.6	<0.5	0.9	<0.5	1.2	3.9	2.8	3.1	2.6	19.7	-	-	-
KP19_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.7	0.6	1.2	<0.5	1.4	<0.05	<0.05	<0.05
KP20_0.1-0.2	17/12/2020	0.1 - 0.2	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	0.6	0.6	0.8	<0.5	<0.5	0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	1.3	1	1.4	0.7	5	-	-	-
DUPC	17/12/2020	-	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	1.3	1.4	1.6	0.8	0.6	1.1	<0.5	2.8	<0.5	0.7	<0.5	1.1	2.9	2.1	2.3	1.8	14.3	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***96.4***	-	-	-
TRIP BLANK	15/12/2020	-	-	-	-	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 4	15/12/2020	-	-	-	-	<1	0.3	16.7	2.4	12.5	5.1	17.6	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC 4	15/12/2020	-	-	-	-	<1	0.3	16.6	2.4	12.5	5.1	17.6	36.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	100%	99%	100%	100%	100%	100%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Delineation Assessment 2018																																						
Field ID	**Date**	**Depth**																																				
B19A_0.3-0.5	27/11/2018	0.3 - 0.5	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
Q100	27/11/2018		<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-
B19A_0.9-1.1	27/11/2018	0.9 - 1.1	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B20A_1.3-1.6	27/11/2018	1.3 - 1.6	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B20A_3.1-3.4	27/11/2018	3.1 - 3.4	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B21A_0.1-0.2	27/11/2018	0.1 - 0.2	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	1.1	<0.5	0.6	1.2	<0.5	1.7	<0.2	<0.2	<0.2
B22A_1.4-1.5	27/11/2018	1.4 - 1.5	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B22A_3.0-3.5	27/11/2018	3 - 3.5	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B23A - No Sample																																						
B24A - No Sample?																																						
B25A_0.9-1.1	27/11/2018	0.9 - 1.1	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6	1.2	<0.5	0.5	<0.2	<0.2	<0.2
B26A_0.9-1.1	27/11/2018	0.9 - 1.1	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B27A_1.5-1.7	27/11/2018	1.5 - 1.7	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B30A_0.3-0.5	27/11/2018	0.3 - 0.5	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
Q101	27/11/2018		<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.2	<0.2	<0.2
B31A_0.2-0.4	27/11/2018	0.2 - 0.4	<50	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			TRH Volatiles/BTEX											PCB	PAH/Phenols (SIM)																						
			C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-
CRC Care HSL-C Open Space, Sand			-	5100	-	2200	140	21000	5900	-	-	17000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
1-2m			-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	-	180	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																																					
Sample ID	**Depth**	**Sample date:**																																			
B14A_0.4-0.6	0.4-0.6	26/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
B15A_0.5	0.5	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05
B15A_2.8-3.0	2.8-3.0	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05
B16A_0.1-0.3	0.1-0.3	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
B17A_0.2	0.2	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05
B18A_1.3	1.3	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
B18A_3.0	3	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
B9B_0.6-0.8	0.6-0.8	26/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.05	<0.05	<0.05
B10B_0.6-0.9	0.6-0.9	26/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	1.2	<0.05	<0.05	<0.05
BSP1_1	Stockpile	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	0.9	0.8	1	<0.5	<0.5	0.8	<0.5	1.6	<0.5	<0.5	<0.5	0.8	1.6	1.3	1.6	1.0	7.5	-	-	-
Q3	Stockpile	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	0.6	<0.5	1	<0.5	<0.5	<0.5	<0.5	1.1	0.7	1.2	<0.5	3.9	-	-	-
BSP1_4	Stockpile	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.8	0.6	1.2	<0.5	1.6	-	-	-
BSP1_7	Stockpile	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	0.7	0.6	1.2	<0.5	1.3	-	-	-
BSP1_8	Stockpile	29/02/2016	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref S
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fr
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refe
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available he

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			Pesticides by GCMS																																									
			Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			10	-	-	-	-	70	-	-	-	250	-	-	-		400	-	-	-	-	-	340	-	-	-	20	-	-	-	-	-	-	10	-	10	-	400	-	-	-	-	-
CRC Care HSL-C Open Space, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	180	180	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Keys Parade Samples																																												
Field ID	**Date**	**Depth**																																										
KP01_0.5-0.6	17/12/2020	0.5 - 0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
DUPA	17/12/2020		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP02_0.2-0.3	17/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP03_0.7-0.8	17/12/2020	0.7 - 0.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP04_0.4-035	17/12/2020	0.4 - 35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP05_0.5-0.6	17/12/2020	0.5 - 0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FOA	17/12/2020		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP06_0.3-0.4	17/12/2020	0.3 - 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP06_0.9-1.0	17/12/2020	0.9 - 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP07_0.5-0.6	17/12/2020	0.5 - 0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP08_0.2-0.3	17/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP09_0.3-0.4	17/12/2020	0.3 - 0.4	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	0.1	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP10_0.2-0.3	17/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPB	17/12/2020		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP11_0.1-0.2	17/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP12_0.1-0.2	17/12/2020	0.1 - 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP14_0.1-0.2	17/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP15_0.1-0.2	17/12/2020	0.1 - 0.2	0.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP16_0.2-0.3	17/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP17_0.1-0.2	17/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP18_0.1-0.2	17/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KP19_0.1-0.2	17/12/2020	0.1 - 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
KP20_0.1-0.2	17/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUPC	17/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 4	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC 4	15/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Delineation Assessment 2018																																												
Field ID	**Date**	**Depth**																																										
B19A_0.3-0.5	27/11/2018	0.3 - 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q100	27/11/2018		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B19A_0.9-1.1	27/11/2018	0.9 - 1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B20A_1.3-1.6	27/11/2018	1.3 - 1.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B20A_3.1-3.4	27/11/2018	3.1 - 3.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B21A_0.1-0.2	27/11/2018	0.1 - 0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B22A_1.4-1.5	27/11/2018	1.4 - 1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B22A_3.0-3.5	27/11/2018	3 - 3.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B23A - No Sample																																												
B24A - No Sample?																																												
B25A_0.9-1.1	27/11/2018	0.9 - 1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B26A_0.9-1.1	27/11/2018	0.9 - 1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B27A_1.5-1.7	27/11/2018	1.5 - 1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B30A_0.3-0.5	27/11/2018	0.3 - 0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Q101	27/11/2018		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B31A_0.2-0.4	27/11/2018	0.2 - 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2
SES_539 - Keys Parade Area Soil Results
Development Lands Contamination Assessment - Milperra

			Pesticides by GCMS																																								
			Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			10	-	-	-	-	70	-	-	-	250	-	-	-		400	-	-	-	-	-	340	-	-	-	20	-	-	-	-	-	-	10	-	10	-	400	-	-	-	-	-
CRC Care HSL-C Open Space, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	180	180	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																																											
Sample ID	**Depth**	**Sample date:**																																									
B14A_0.4-0.6	0.4-0.6	26/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B15A_0.5	0.5	29/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
B15A_2.8-3.0	2.8-3.0	29/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
B16A_0.1-0.3	0.1-0.3	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B17A_0.2	0.2	29/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
B18A_1.3	1.3	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B18A_3.0	3	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B9B_0.6-0.8	0.6-0.8	26/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
B10B_0.6-0.9	0.6-0.9	26/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
BSP1_1	Stockpile	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q3	Stockpile	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BSP1_4	Stockpile	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BSP1_7	Stockpile	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BSP1_8	Stockpile	29/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Comments
#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref S
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fr
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refe
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available he

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			Moisture Content	Asbestos Identification in Bulk Solids								Asbestos Identification in Soils								Total Metals by ICP-AES							Hg by FIMS
			Moisture Content	Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury
			%	g/kg	-	Fibres	g/kg	g/kg	g	-	-	g/kg	Fibres	-	g/kg	g/kg	g	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1		5	0.1	0.1	0.01	-	-	0.1	5		0.1	0.1	0.01	-	-	5	1	2	5	5	2	5	0.1
NEPM 2013 Table 1A(1) HILs C - Open Space			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-	300[#5]	90	300	17,000	600[#6]	1,200	30,000	80[#4]
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100[#10]	-	510	230	1100	270	770	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Foreshore Area Samples																											
Field ID	**Date**	**Depth**																									
FP01_0.2-0.3	23/12/2020	0.2 - 0.3	15.4	-	-	-	-	-	-	-	-	No	No	-	No	No	59.8	Mid brown soil.	A. SMYLIE	12	<1	8	36	19	19	100	<0.1
QZ01	23/12/2020	-	16.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	<1	19	28	24	14	65	<0.1
RPD% (for data >10 times EQL)			***6.3***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***42.4***	-
FP01_1.5	23/12/2020	1.5	27.6	-	-	-	-	-	-	-	-	No	No	-	No	No	56.3	Mid brown soil.	A. SMYLIE	22	<1	13	56	45	9	143	0.4
FP02_0.3-0.4	23/12/2020	0.3 - 0.4	12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	8	16	6	35	<0.1
FP03_0.3-04	23/12/2020	0.3 - 4	5.9	-	-	-	-	-	-	-	-	No	No	-	No	No	71.9	Mid brown soil.	A. SMYLIE	<5	<1	5	11	11	5	45	0.2
FP04_0.2-0.3	23/12/2020	0.2 - 0.3	15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	<1	30	<5	12	2	9	<0.1
FP05_0.5-0.6	23/12/2020	0.5 - 0.6	61.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	436	2	367	1330	98	990	232	<0.1
FP05_F01	23/12/2020	-		Yes	Ch	N/A	No	No	16.3	One piece of asbestos cement sheeting approximately 55x35x5mm.	B.SCHRADER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP06_0.3-0.4	23/12/2020	0.3 - 0.4	16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<1	15	13	19	4	56	<0.1
FP06_F02	23/12/2020	-		Yes	Ch	N/A	No	No	66.4	One piece of asbestos cement sheeting approximately 85x40x5mm.	B.SCHRADER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_0.2-0.3	23/12/2020	0.2 - 0.3	42.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	<1	18	103	85	22	857	0.1
FP07_F03	23/12/2020	-		Yes	Ch	N/A	No	No	66	One piece of asbestos cement sheeting approximately 155x85x5mm.	B.SCHRADER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP08_0.1-0.2	23/12/2020	0.1 - 0.2	23.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	<1	33	18	312	5	467	<0.1
FP09_0.1-0.2	23/12/2020	0.1 - 0.2	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	<1	16	36	17	15	71	<0.1
FP09_0.8-0.9	23/12/2020	0.8 - 0.9	9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	7	11	9	3	30	<0.1
FP10_0.3-0.4	23/12/2020	0.3 - 0.4	14	-	-	-	-	-	-	-	-	No*	No	Am	No	No	48.2	Mid brown soil containing two pieces of asbestos fibre board approximately 5x3x1mm.	A. SMYLIE	31	5	396	2330	775	244	1430	1.3
FP11_0.3-0.4	23/12/2020	0.3 - 0.4	9.2	-	-	-	-	-	-	-	-	No	No	-	No	No	73.3	Mid brown soil.	A. SMYLIE	30	21	111	545	1,460	62	8810	3.9
FP12_0.3-0.4	23/12/2020	0.3 - 0.4	37.2	-	-	-	-	-	-	-	-	No	No	-	No	No	29.6	Mid brown soil.	A. SMYLIE	<5	<1	5	400	48	2	358	0.1
FP13_0.3-0.4	23/12/2020	0.3 - 0.4	16.5	-	-	-	-	-	-	-	-	No	No	-	No	No	38.4	Mid brown soil.	A. SMYLIE	<5	<1	19	67	37	17	207	0.2
QZ03	23/12/2020	-	18.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	24	78	45	16	149	0.1

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			Moisture Content	Asbestos Identification in Bulk Solids								Asbestos Identification in Soils								Total Metals by ICP-AES							Hg by FIMS
			Moisture Content	Asbestos Detected	Asbestos Type	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Asbestos Detected	Asbestos (Trace)	Asbestos Type	Synthetic Mineral Fibre	Organic Fibre	Sample weight (dry)	Description	APPROVED IDENTIFIER:	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc	Mercury
			%	g/kg	-	Fibres	g/kg	g/kg	g	-	-	g/kg	Fibres	-	g/kg	g/kg	g	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1		5	0.1	0.1	0.01	-	-	0.1	5		0.1	0.1	0.01	-	-	5	1	2	5	5	2	5	0.1
NEPM 2013 Table 1A(1) HILs C - Open Space			-	Y	-	Y	-	-	-	-	-	Y	Y	-	-	-	-	-	-	300[#5]	90	300	17,000	600[#6]	1,200	30,000	80[#4]
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100[#10]	-	510	230	1100	270	770	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			***9.8***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***15.2***	-	-	***32.6***	-
FP14_0.2-0.3	23/12/2020	0.2 - 0.3	18.8	-	-	-	-	-	-	-	-	No	No	-	No	No	30.7	Mid brown soil.	A. SMYLIE	<5	<1	7	31	42	14	117	<0.1
FP15_0.2-0.3	23/12/2020	0.2 - 0.3	14.7	-	-	-	-	-	-	-	-	No	No	-	No	No	26.3	Mid brown soil.	A. SMYLIE	7	<1	12	134	401	13	477	0.5
FP16_0.1-0.2	23/12/2020	0.1 - 0.2	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	<1	20	37	56	8	74	<0.1
QZ04	23/12/2020	-	15.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<1	16	28	45	7	67	<0.1
RPD% (for data >10 times EQL)			***12.4***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***9.9***	-
FP17_0.4-0.5	23/12/2020	0.4 - 0.5	15.3	-	-	-	-	-	-	-	-	No	No	-	No	No	29.4	Mid brown soil.	A. SMYLIE	<5	<1	5	25	5	24	43	<0.1
TRIP BLANK	17/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																											
Sample ID	**Depth**	**Sample date:**																									
B1C_0.3-0.5	0.3-0.5	26/02/2016	13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	<1	18	6	12	2	6	<0.1
B2C_0.4-0.7	0.4-0.7	26/02/2016	23.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	<1	20	10	10	4	13	<0.1
Q5		26/02/2016	21.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	<1	18	12	12	4	20	<0.1
B4C_0.2-0.5	0.2-0.5	26/02/2016	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<1	12	15	17	4	32	<0.1

* Asbestos identified but below LOR of 0.1g/kg.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered.
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			TRH - Semivolatile Fraction									TRH Volatiles/BTEX											PCB								
			>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	PCBs (DI water leach)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			50	50	100	100	50	50	100	100	50	10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-
CRC Care HSL-C Open Space (Direct Contact)			-	3800	5300	7400	-	-	-	-	-	-	5100	-	2200	140	21000	5900	-	-	17000	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	NL (560)	-	-	-	-	-	-	-	-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-
1-2m			-	NL (560)	-	-	-	-	-	-	-	-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			120[#11]	[#12]	300	2,800	-	-	-	-	-	-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	-	-	0.7	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			1,000[#13]	-	2,500	10,000	-	-	-	-	-	700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Foreshore Area Samples																															
Field ID	**Date**	**Depth**																													
FP01_0.2-0.3	23/12/2020	0.2 - 0.3	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QZ01	23/12/2020	-	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP01_1.5	23/12/2020	1.5	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP02_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP03_0.3-04	23/12/2020	0.3 - 4	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP04_0.2-0.3	23/12/2020	0.2 - 0.3	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP05_0.5-0.6	23/12/2020	0.5 - 0.6	<50	<50	150	<100	150	<50	<100	100	100	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
FP05_F01	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP06_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP06_F02	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_0.2-0.3	23/12/2020	0.2 - 0.3	<50	<50	210	<100	210	<50	140	120	260	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP07_F03	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP08_0.1-0.2	23/12/2020	0.1 - 0.2	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP09_0.1-0.2	23/12/2020	0.1 - 0.2	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP09_0.8-0.9	23/12/2020	0.8 - 0.9	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP10_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	260	<100	260	<50	220	<100	220	30	16	24	<1	<0.2	<0.5	3.4	7.6	3.4	11	14.4	125	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP11_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	180	150	330	<50	<100	150	150	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.4	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP12_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP13_0.3-0.4	23/12/2020	0.3 - 0.4	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QZ03	23/12/2020	-	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			TRH - Semivolatile Fraction									TRH Volatiles/BTEX											PCB									
			>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C6-C9 Fraction	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	PCBs (Sum of total)	PCBs (DI water leach)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			50	50	100	100	50	50	100	100	50	10	10	10	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	0.1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1[#3]	-	-	-	-	-	-	-	-
CRC Care HSL-C Open Space (Direct Contact)			-	3800	5300	7400	-	-	-	-	-	-	5100	-	2200	140	21000	5900	-	-	17000	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	NL (560)	-	-	-	-	-	-	-	-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-
1-2m			-	NL (560)	-	-	-	-	-	-	-	-	NL (950)	-	NL (9)	NL (360)	NL (560)	NL (64)	-	-	NL (300)	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			120[#11]	[#12]	300	2,800	-	-	-	-	-	-	180[#9]	-	-	50	85	70	-	-	105	-	-	-	-	-	-	-	0.7	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			1,000[#13]	-	2,500	10,000	-	-	-	-	-	700[#13]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP14_0.2-0.3	23/12/2020	0.2 - 0.3	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.4	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
FP15_0.2-0.3	23/12/2020	0.2 - 0.3	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	-	<0.5	<0.5	<0.5	<0.5	0.5	0.6	<0.5
FP16_0.1-0.2	23/12/2020	0.1 - 0.2	<50	<50	120	<100	120	<50	<100	110	110	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QZ04	23/12/2020	-	<50	<50	130	130	260	<50	<100	110	110	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP17_0.4-0.5	23/12/2020	0.4 - 0.5	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRIP BLANK	17/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	-	-	-	-	-	-	-	-
TRIP SPIKE 5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.2	10.5	1.7	10.7	3.4	14.1	26.3	-	-	-	-	-	-	-	-	-
TSC5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	0.2	14.1	2	11.5	3.7	15.2	31.5	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	74%	85%	93%	92%	93%	83%	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																															
Sample ID	**Depth**	**Sample date:**																													
B1C_0.3-0.5	0.3-0.5	26/02/2016	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
B2C_0.4-0.7	0.4-0.7	26/02/2016	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Q5		26/02/2016	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
B4C_0.2-0.5	0.2-0.5	26/02/2016	<50	<50	<100	<100	<50	<50	<100	<100	<50	<10	<10	<10	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

* Asbestos identified but below LOR of 0.1g/kg.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Scl
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead m
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fra
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available her

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			PAH/Phenols (SIM)																													
			Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-		-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-	6	-	-	-	-	50	-	-	-	160	-	-	-	
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	2200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	170	-	-	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	180
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Foreshore Area Samples																																
Field ID	**Date**	**Depth**																														
FP01_0.2-0.3	23/12/2020	0.2 - 0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
QZ01	23/12/2020	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP01_1.5	23/12/2020	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP02_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP03_0.3-04	23/12/2020	0.3 - 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
FP04_0.2-0.3	23/12/2020	0.2 - 0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP05_0.5-0.6	23/12/2020	0.5 - 0.6	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1	1.9	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP05_F01	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP06_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
FP06_F02	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_0.2-0.3	23/12/2020	0.2 - 0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_F03	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP08_0.1-0.2	23/12/2020	0.1 - 0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP09_0.1-0.2	23/12/2020	0.1 - 0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
FP09_0.8-0.9	23/12/2020	0.8 - 0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
FP10_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	<0.2
FP11_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP12_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP13_0.3-0.4	23/12/2020	0.3 - 0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
QZ03	23/12/2020	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			PAH/Phenols (SIM)																														
			Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
NEPM 2013 Table 1A(1) HILs C - Open Space			-	-	-	-	-	-		-	-	3[#1]	3[#1]	3[#1]	300[#2]	-	-	-	6	-	-	-	-	50	-	-	-	160	-	-	-	
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	2200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	NL (9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			-	-	-	-	-	-	170	-	-	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	180
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP14_0.2-0.3	23/12/2020	0.2 - 0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP15_0.2-0.3	23/12/2020	0.2 - 0.3	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.8	0.9	1.2	0.6	2.7	0.06	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
FP16_0.1-0.2	23/12/2020	0.1 - 0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QZ04	23/12/2020	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP17_0.4-0.5	23/12/2020	0.4 - 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	17/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																																
Sample ID	**Depth**	**Sample date:**																														
B1C_0.3-0.5	0.3-0.5	26/02/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
B2C_0.4-0.7	0.4-0.7	26/02/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q5		26/02/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4C_0.2-0.5	0.2-0.5	26/02/2016	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2

* Asbestos identified but below LOR of 0.1g/kg.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Scl
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead m
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fra
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available her

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			Pesticides by GCMS																									
			DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			240	-	-	-	-	-	270	-	-	-	10	-	-	-	-	-	-	6	-	10	-	300	-	-	-	-	-
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Foreshore Area Samples																													
Field ID	**Date**	**Depth**																											
FP01_0.2-0.3	23/12/2020	0.2 - 0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
QZ01	23/12/2020	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP01_1.5	23/12/2020	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP02_0.3-0.4	23/12/2020	0.3 - 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP03_0.3-04	23/12/2020	0.3 - 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP04_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP05_0.5-0.6	23/12/2020	0.5 - 0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP05_F01	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP06_0.3-0.4	23/12/2020	0.3 - 0.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP06_F02	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP07_F03	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP08_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP09_0.1-0.2	23/12/2020	0.1 - 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP09_0.8-0.9	23/12/2020	0.8 - 0.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP10_0.3-0.4	23/12/2020	0.3 - 0.4	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP11_0.3-0.4	23/12/2020	0.3 - 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP12_0.3-0.4	23/12/2020	0.3 - 0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP13_0.3-0.4	23/12/2020	0.3 - 0.4	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
QZ03	23/12/2020	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05

Table 3
SES_539 -Foreshore Area Soil Results
Development Lands Contamination Assessment - Milperra

			Pesticides by GCMS																										
			DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs C - Open Space			240	-	-	-	-	-	270	-	-	-	10	-	-	-	-	-	-	6	-	10	-	300	-	-	-	-	-
CRC Care HSL-C Open Space (Direct Contact)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1A(3) Open Space for Vapour Intrusion, Sand			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-1m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-2m			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP14_0.2-0.3	23/12/2020	0.2 - 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP15_0.2-0.3	23/12/2020	0.2 - 0.3	0.06	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
FP16_0.1-0.2	23/12/2020	0.1 - 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QZ04	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RPD% (for data >10 times EQL)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP17_0.4-0.5	23/12/2020	0.4 - 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	17/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE 5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSC5	23/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Recovery			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Assessment 2016 (revised to 2019)																													
Sample ID	**Depth**	**Sample date:**																											
B1C_0.3-0.5	0.3-0.5	26/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05
B2C_0.4-0.7	0.4-0.7	26/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q5		26/02/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B4C_0.2-0.5	0.2-0.5	26/02/2016	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05

* Asbestos identified but below LOR of 0.1g/kg.

Comments

#1 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Scl
#2 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#3 PCBs: HIL refers to non-dioxin like PCBs only.
#4 Elemental mercury: HIL does not address elemental mercury.
#5 Arsenic: HIL assumes 70% oral bioavailability.
#6 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead m
#7 Derived soil HSL exceeds soil saturation concentraiton
#8 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#9 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fra
#10 Aged values apply to arsenic contamination present in soil > 2 years. Refer
#11 ERRATA Updated 30 April 2014 . Naphthalene should not be subtracted.
#12 Errata 30 April 2014. Naphthalene should not be subtracted from >C
#13 Separate management limits for BTEX & naphthalene are not available her

C

Appendix C Test Pit Logs

TEST PIT DESCRIPTION LOG D01

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf Metal pipe observed	
		D01_0.1-0.2					
						Sand	No suspected asbestos containing materials or odours observed
		D01_0.4-0.5					
0.5						End of Testpit at 0.5m	

Disclaimer This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 04 Jan 2021

TEST PIT DESCRIPTION LOG D02

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf	
		D02_0.1-0.2					
						Sand	No suspected asbestos containing materials or odours observed
		D02_0.4-0.5					
0.5						End of Testpit at 0.5m	

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TEST PIT DESCRIPTION LOG D03

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf Metal pipe observed	
		D03_0.1-0.2					
						Sand	No suspected asbestos containing materials or odours observed
0.5						End of Testpit at 0.5m	

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TEST PIT DESCRIPTION LOG D04

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf	
						Concrete slab	
		D04_0.2-0.3 (QZ02)				Sandy soil	No suspected asbestos containing materials or odours observed
		D04_0.4-0.5					
0.5						End of Testpit at 0.5m	

Disclaimer This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 04 Jan 2021

TEST PIT DESCRIPTION LOG D05

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf	
						Concrete slab	
		D05_0.2-0.3				Sandy soil	No suspected asbestos containing materials or odours observed
0.5						End of Testpit at 0.5m	

TEST PIT DESCRIPTION LOG D06

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf	
						Concrete slab	
		D06_0.2-0.3				Thin layer of ash under slab then Sandy soil	No suspected asbestos containing materials or odours observed
		D06_0.4-0.5					
0.5						End of Testpit at 0.5m	

Disclaimer This log is intended for environmental not geotechnical purposes.

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TEST PIT DESCRIPTION LOG D07

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Topsoil and Turf	
		D07_0.1-0.2					
						Sand	No suspected asbestos containing materials or odours observed
0.5						End of Testpit at 0.5m	

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TEST PIT DESCRIPTION LOG D08

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Pesticide Delineation Area - Riverlands Residential Area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		D08_0.1-0.2				Topsoil and Turf	
						Sand	No suspected asbestos containing materials or odours observed
0.5						End of Testpit at 0.5m	

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TEST PIT DESCRIPTION LOG KP01

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 1.0m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Grass and sandy topsoil FILL: Soil and concrete chunks, dry. Some foreign materials observed	Anthroprogenic items observed include Hose and wire pieces, soft plastics, timber and rocks. No suspected Asbestos Containing materials observed
0.5		KP01_0.5-0.6 (DUPA)				FILL: Ash and soil mixture, with some slag materials, grey to dark grey	
						NATURAL: Clay; medium plasticity, brown and grey, stiff, moist.	
1						End of Testpit at 1.0m	

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produced by ESlog.ESdat.net on 21 Dec 2020

TEST PIT DESCRIPTION LOG KP02

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.7m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Sandy soil and ash mixture, grey to dark grey, dry some slag materials. Trace foreign materials observed	Anthroprogenic items observed include 1x piece of scrap metal No suspected Asbestos Containing materials observed
		KP02_0.2_0.3					
0.5						NATURAL: Sandy Clay; high sand content, orange, low plasticity, stiff to firm.	
1						End of Testpit at 0.7m	

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TEST PIT DESCRIPTION LOG KP03

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 1.1m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Grass FILL: Sandy topsoil, dry, brown, medium dense	
0.5		KP03_0.7-0.8				FILL: Ashy soil mixture, some slag, grey to white, some brick and bitumen pieces	Anthroprogenic items observed include Brick and bitumen pieces No suspected Asbestos Containing materials observed
1						NATURAL: Clay; medium plasticity, brown and grey, stiff, moist.	
						End of Testpit at 1.1m	

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TEST PIT DESCRIPTION LOG KP04

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.8m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Sandy topsoil, dry, brown, firm	
		KP04_0.4-0.5				FILL: Ashy soil mixture, some slag and other gravels, grey to white, brick and iron bar	Anthroprogenic items observed include Brick and iron bar pieces No suspected Asbestos Containing materials observed
0.5						NATURAL: Sandy Clay; low plasticity, orange, stiff to firm	
1						End of Testpit at 0.8m	

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TEST PIT DESCRIPTION LOG KP05

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 1.2m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Sand fill; grey, some concrete chunks and minor gravels and rocks. Large chunk of fibro (FOA) observed, no other foreign materials observed	
0.5		KP05_0.5-0.6					Testpit into small stockpile
1							
						End of Testpit at 1.2m	

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TEST PIT DESCRIPTION LOG KP06

PROJECT NUMBER SES_539	**DRILLING DATE** 17/12/2020	**TRENCH SIZE** 0.6m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Oliveri Civil & Demo P/L	**TOTAL DEPTH** 1.0m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development lands		**CHECKED BY** S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Sand, brown, loose, uniform, dry. Some gravel pieces	
		KP06_0.3-0.4					Small soil pile off track, sampled into pile
0.5							
		KP06_0.9-1.0				NATURAL: Clay, very dry, hard, unknown plasticity, dark grey to brown	
1						End of Testpit at 1.0m	

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produced by ESlog.ESdat.net on 21 Dec 2020

TEST PIT DESCRIPTION LOG KP07

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 1.6m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Sand fill; grey, some concrete chunks and minor gravels and rocks. No foreign materials or suspected asbestos containing materials observed	
0.5		KP07_0.5-0.6					Testpit into small soil pile
1							
1.5						NATURAL: Clay; very dry, hard, unknown plasticity, dark grey to brown	
						End of Testpit at 1.6m	

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produced by ESlog.ESdat.net on 21 Dec 2020

TEST PIT DESCRIPTION LOG KP08

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.8m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Soil mixture, some clay, brick and rocks, very dry. No suspected asbestos containing materials observed	
		KP08_0.2-0.3					
0.5						NATURAL: Sandy Clay; low plasticity, brown, dry	
						End of Testpit at 0.8m	
1							
1.5							

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produced by ESlog.ESdat.net on 21 Dec 2020

TEST PIT DESCRIPTION LOG KP09

PROJECT NUMBER SES_539	**DRILLING DATE** 17/12/2020	**TRENCH SIZE** 0.6m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Oliveri Civil & Demo P/L	**TOTAL DEPTH** 0.8m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development lands		**CHECKED BY** S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Thin soil layer then: FILL: Crushed sandstone, rocks, ashy fill, scrap metal, ballast, brick and pipe, glass mixture No suspected asbestos containing materials observed	
		KP09_0.3-0.4					
0.5						NATURAL: Sandy Clay; low plasticity, brown, dry	
						End of Testpit at 0.8m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP10

PROJECT NUMBER SES_539	**DRILLING DATE** 17/12/2020	**TRENCH SIZE** 0.6m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Oliveri Civil & Demo P/L	**TOTAL DEPTH** 0.6m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development lands		**CHECKED BY** S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP10_0.2-0.3 (DUPB)				Thin soil layer then: FILL: Crushed sandstone, rocks, ashy fill, scrap metal, ballast, brick and pipe, glass mixture No suspected asbestos containing materials observed	
0.5						NATURAL: Sandy Clay; low plasticity, brown, dry	
1						End of Testpit at 0.6m	
1.5							

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TEST PIT DESCRIPTION LOG KP11

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.3m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Two coat bitumen seal	
		KP11_0.1-0.2				NATURAL: Silty Clay, brown, unknown plasticity, very dry, hard and brittle/friable	
0.5						End of Testpit at 0.3m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP12

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.35m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Two coat bitumen seal	
		KP12_0.1-0.2				FILL: Sandy soil mixture, some bitumen pieces and charcoal. No foreign materials or suspected asbestos containing materials observed	
						NATURAL: Silty Clay, brown, unknown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.35m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP13

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.3m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Two coat bitumen seal	No sample collected
						FILL: Sandy gravelly mixture, some sandstone rocks	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.3m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP14

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.2m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Two coat bitumen seal	
		KP14_0.1-0.2				NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.2m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP15

PROJECT NUMBER SES_539	**DRILLING DATE** 17/12/2020	**TRENCH SIZE** 0.6m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Oliveri Civil & Demo P/L	**TOTAL DEPTH** 0.3m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development lands		**CHECKED BY** S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Two coat bitumen seal	
		KP15_0.1-0.2				Ash layer and some slag	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
						End of Testpit at 0.3m	
0.5							
1							
1.5							

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TEST PIT DESCRIPTION LOG KP16

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.5m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP16_0.2-0.3				FILL: Sandy gravels, some ashy materials in thin lenses with crushed sandstone rock	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.5m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP17

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.3m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP17_0.1-0.2				FILL: Crushed sandstone rock and sands	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.3m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP18

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.45m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP18_0.1-0.2				FILL: Crushed sandstone rock and sands	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.45m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP19

PROJECT NUMBER SES_539	**DRILLING DATE** 17/12/2020	**TRENCH SIZE** 0.6m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Oliveri Civil & Demo P/L	**TOTAL DEPTH** 0.35m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development lands		**CHECKED BY** S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP19_0.1-0.2				FILL: Crushed sandstone rock and sands	
						Ash layer	
						NATURAL: Silty Clay, brown, unkown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.35m	
1							
1.5							

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TEST PIT DESCRIPTION LOG KP20

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development lands

DRILLING DATE 17/12/2020
DRILLING COMPANY Oliveri Civil & Demo P/L
DRILLING METHOD Excavator

TRENCH SIZE 0.6m wide
TOTAL DEPTH 0.35m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits along Keys Parade alignment

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		KP20_0.1-0.2 (DUPC)				FILL: Crushed sandstone rock and sands	
						NATURAL: Silty Clay, brown, unknown plasticity, very dry, hard, brittle/friable	
0.5						End of Testpit at 0.35m	
1							
1.5							

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TEST PIT DESCRIPTION LOG FP01

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 1.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		FP01_0.2-0.3 (QZ01)				Turf layer then; FILL: Gravelly Clay, low plasticity, brown, moist, firm. Significant foreign materials observed including scrap metal, plastic (golf balls), concrete chunks, bricks, tile pieces and timber	Tespit located in raised tee off pad, 10m x 15m No asbestos containing materials or odours observed
0.5						FILL: Sand fill material with some clays; grey. significant foreign materials observed including; large concrete chunks, plastic wrap, bricks, irrigation pipe, metal pipes and timber.	
1						Becoming wet	
1.5						End of Testpit at 1.5m	
2							

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TEST PIT DESCRIPTION LOG FP02

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 2.2m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Sandy gravelly Clay; low plasticity, moist, browns and reds, sandstone rocks. No foreign material observed.	Tespit located west end of stockpile ~2.5m high No asbestos containing materials or odours observed
		FP02_0.3-0.4					
0.5							
1						FILL: as above with foreign materials observed including; agg pipe and hose off-cuts, some soft plastics	
1.5							
2						FILL: as above with foreign materials observed including; bricks and large wooden tree trunk or pier/pylon.	
						End of Testpit at 2.2m	

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TEST PIT DESCRIPTION LOG FP03

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 1.3m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Sand; loose, dry, brown, charcoal pieces throughout. No foreign material observed.	Tespit located within small mound amongst a dozen or so similar mounds. No asbestos containing materials or odours observed
		FP03_0.3-0.4					
0.5						FILL: Gravelly Clay, moist, low plasticity, brown	
1						Suspected wire cable observed	
						(Natural?) Silty Sandy Clay	
						End of Testpit at 1.3m	
1.5							
2							

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TEST PIT DESCRIPTION LOG FP04

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.8m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Turf and Silty topsoil - tree roots	Concrete and bricks protruding from surface
						FILL: Gravelly Clay, moist, low plasticity, yellow/brown, stiff. Brick and a star picket observed	
		FP04_0.2-0.3					No asbestos containing materials or odours observed
0.5						Wet, timber and wood waste and one piece of steel observed	
						End of Testpit at 0.8m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP05

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.9m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Clay fill; medium plasticity, wet, dark brown, roots	Testpit located in swamp area
						FILL: Waste fill, brick, plastic, timber, rotting anoxic smell	Suspected asbestos containing material - Fibro piece observed
0.5		FP05_0.5-0.6 FP05_F01					
						FILL: Waste as above and Clays/sands mixture below water	Saturated at 0.6m
						End of Testpit at 0.9m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP06

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.7m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
0.5		FP06_0.3-0.4 FP06_F02				FILL: Gravelly Clay fill with some brick and tile waste, fibro observed	Testpit located in higher ground near FP05 Suspected asbestos containing material - Fibro piece observed
1 1.5 2						End of Testpit at 0.7m	

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TEST PIT DESCRIPTION LOG FP07

PROJECT NUMBER SES_539
CLIENT Mirvac Developments
LOCATION Prescot Parade, Milperra NSW
PROJECT NAME Contamination Assessment of Proposed Development Lands

DRILLING DATE 23/12/2020
DRILLING COMPANY Arax Civil
DRILLING METHOD Backhoe Excavator

TRENCH SIZE 0.4m wide
TOTAL DEPTH 0.6m
LOGGED BY A.S.
CHECKED BY S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Clay fill with brick on surface, wet and rotting matter, timber, plastic, glass, old tyre and 1x large piece of fibro observed	Testpit located in higher ground near FP05
		FP07_0.2-0.3 FP07_F03					Suspected asbestos containing material - Fibro piece observed
0.5						∇	Water seepage at 0.5m
						End of Testpit at 0.6m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP08

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		FP08_0.1-0.2				FILL: Silty Sandy Clay mixture with brick rubble, concrete, tree roots and logs. Minor pieces of soft plastics	No suspected asbestos containing material observed
0.5						End of Testpit at 0.5m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP09

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 1.3m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Gravelly Clay, low plasticity, brown, most, firm	
		FP09_0.1-0.2					No suspected asbestos containing material observed
0.5							
		FP09_0.8-0.9				FILL: Sand; orange yellow, strange odour, large green slag gravels present within sand matrix	
1							
						End of Testpit at 1.3m	
1.5							
2							

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TEST PIT DESCRIPTION LOG FP10

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Gravelly Clay and waste mixture. Glass, plastic and ashy materials observed with scrap metal	No suspected asbestos containing material observed
		FP10_0.3-0.4				FILL: Strange coloured sands; burnt odour, ashy, large green slag gravels present within sand matrix, glass and metal observed.	
0.5						End of Testpit at 0.5m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP11

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.7m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						Sandy Topsoil	
						FILL: Brick and rubble waste in sandy matrix. Scrap metal and glass, some ashy appearance material	No suspected asbestos containing material observed
		FP11_0.3-0.4					
0.5						FILL: Shaley Clay and gravels with some plastic waste	
						End of Testpit at 0.7m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP12

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.7m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Clay topsoil. Some brick, tile, ceramics and metals. Ashy materials observed	No suspected asbestos containing material observed
		FP12_0.3-0.4				FILL: White Clayey substance observed	
0.5						(Natural?) Clay material	
						End of Testpit at 0.7m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP13

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.8m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Clay topsoil. Some brick and metal waste.	
						FILL: Ashy clay mixture	No suspected asbestos containing material observed
		FP13_0.3-0.4 (QZ03)					
0.5						Brick and ashy waste	
						End of Testpit at 0.8m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP14

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.5m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
		FP14_0.2-0.3				FILL: Silty Clay topsoil then brick and ashy slag mixture	No suspected asbestos containing material observed
						NATURAL: Silty Clay, brown, stiff, moist	
0.5						End of Testpit at 0.5m	
1							
1.5							
2							

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TEST PIT DESCRIPTION LOG FP15

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.8m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Clay topsoil then brick and ashy wastes mixture	No suspected asbestos containing material observed
		FP15_0.2-0.3					
0.5						NATURAL: Silty Clay, brown, stiff, moist	
						End of Testpit at 0.8m	
1							
1.5							
2							

Disclaimer This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 04 Jan 2021

TEST PIT DESCRIPTION LOG FP16

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 0.7m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
0.5		FP16_0.1-0.2 (QZ04)				FILL: Silty Clay, low plasticity, tan brown, dry and soft	No suspected asbestos containing material observed
1 1.5 2						End of Testpit at 0.7m	

Disclaimer This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 04 Jan 2021

TEST PIT DESCRIPTION LOG FP17

PROJECT NUMBER SES_539	**DRILLING DATE** 23/12/2020	**TRENCH SIZE** 0.4m wide
CLIENT Mirvac Developments	**DRILLING COMPANY** Arax Civil	**TOTAL DEPTH** 1.1m
LOCATION Prescot Parade, Milperra NSW	**DRILLING METHOD** Backhoe Excavator	**LOGGED BY** A.S.
PROJECT NAME Contamination Assessment of Proposed Development Lands		**CHECKED BY** S.G.

COMMENTS Testpits within Foreshore area

Depth (m)	PID	Testpit Samples	Is Analysed?	Graphic Log	USCS	General Material Description	Other Observations
						FILL: Silty Clay and sand fill mixture	No suspected asbestos containing material observed
		FP17_0.4-0.5				FILL: Ash, slag and cinders with bricks	
0.5						FILL: Clays dry brown	
1						NATURAL: Silty Sand, dry, brown colours, dense	
						End of Testpit at 1.1m	
1.5							
2							

Disclaimer This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 04 Jan 2021

D

Appendix D Historical Sampling Location Figures

Phase 1 – Environmental Strategies (ES, 2014a) - Figures

EnvironmentalStrategies

Site Location Plan | Figure 1

Riverlands Development, Milperra, NSW, 2214

KEY

Phase 1 Site boundary

Source:
Aerial Photography - Nearmap.com

Project: 14050 Riverlands GC

0 400 800 1200 1600 2000m

Approximate Scale

Site Layout Plan | Figure 2

Riverlands Development, Milperra, NSW, 2214

KEY

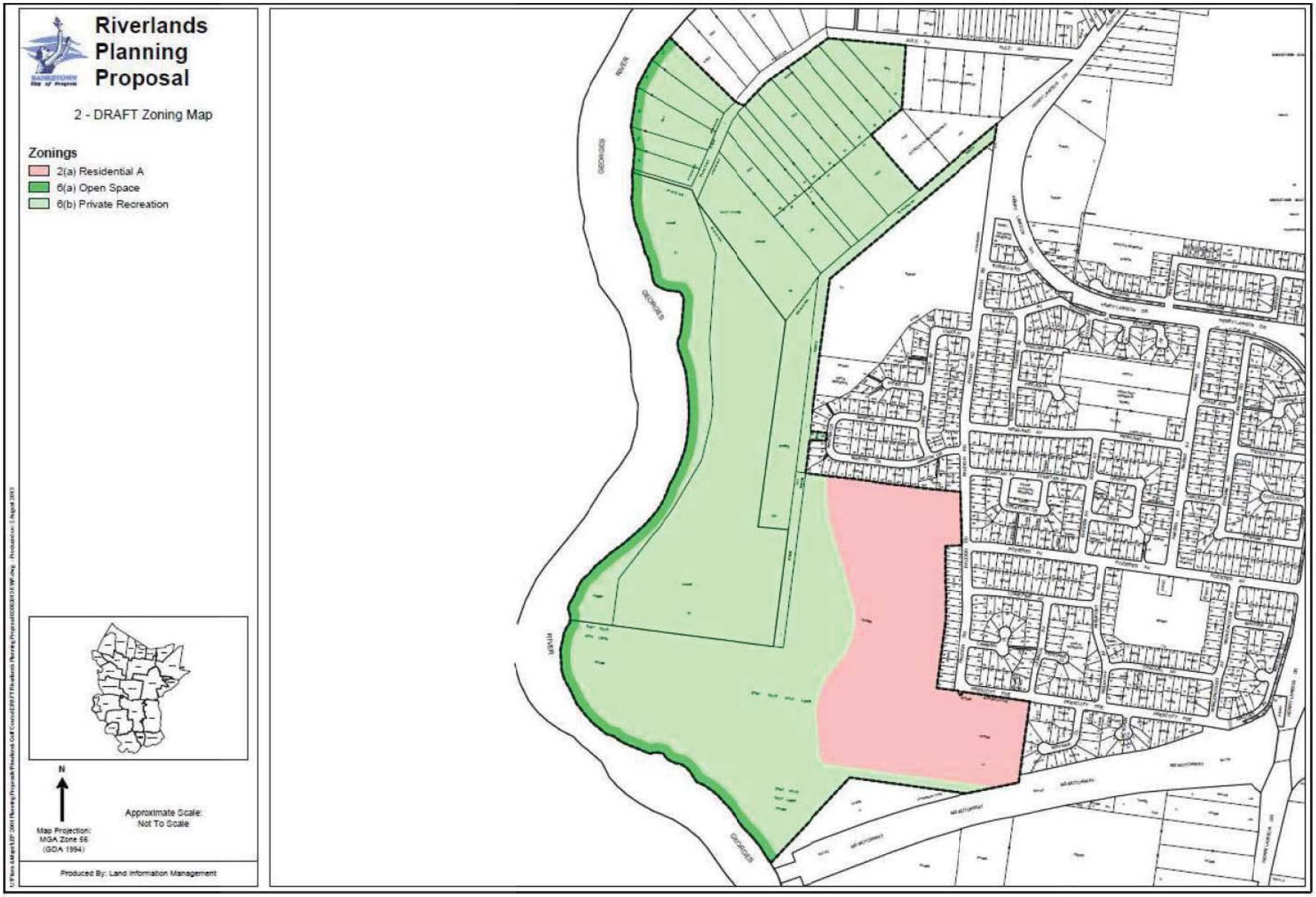
Phase 1 Site boundary

Source:
Aerial Photography - Nearmap.com

Project: 14050 Riverlands GC

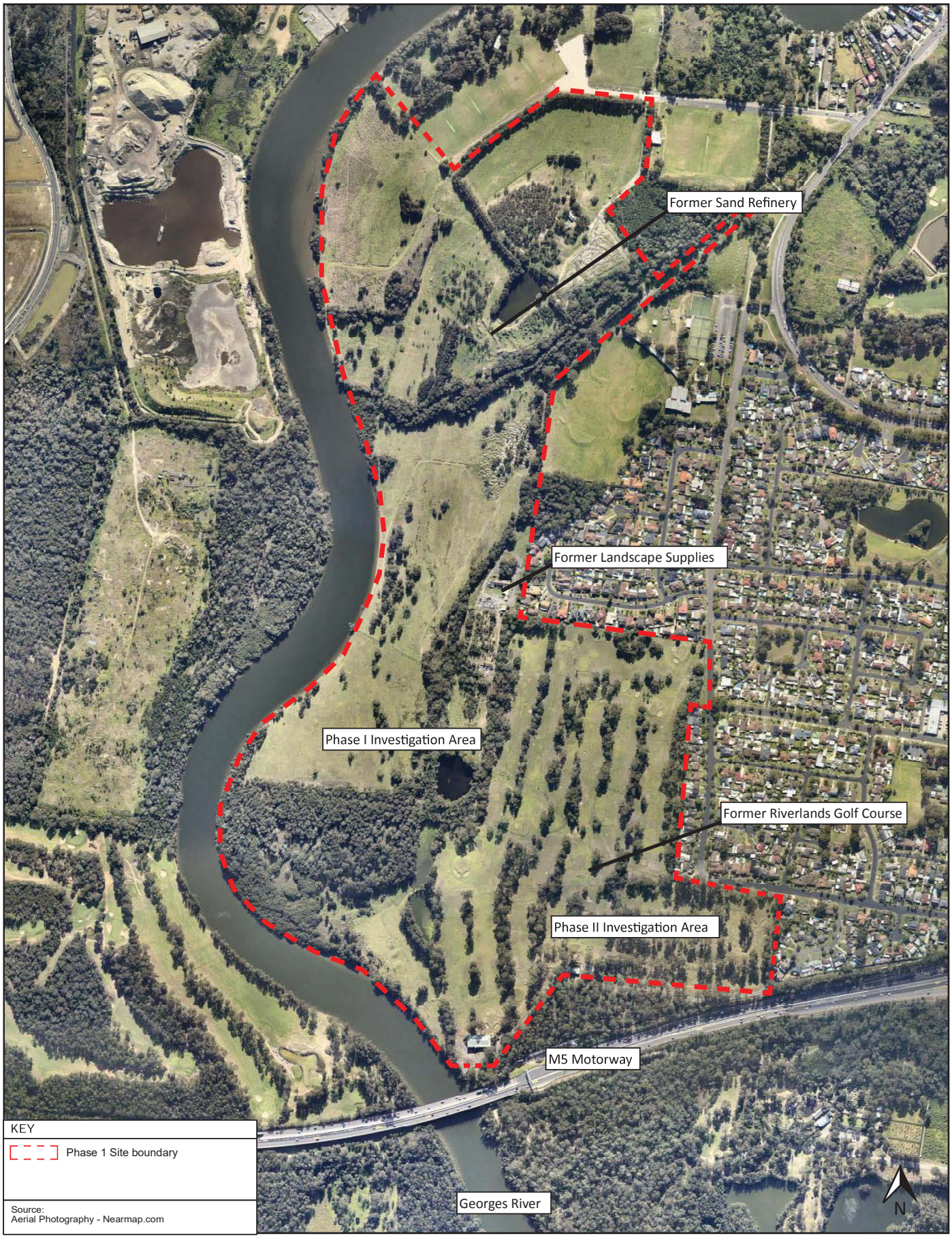
0 150 300 450 600 750m

Approximate Scale



Basemap Source: Bankstown City Council

Project: 14050 Riverlands GC



Project: 14050 Riverlands GC

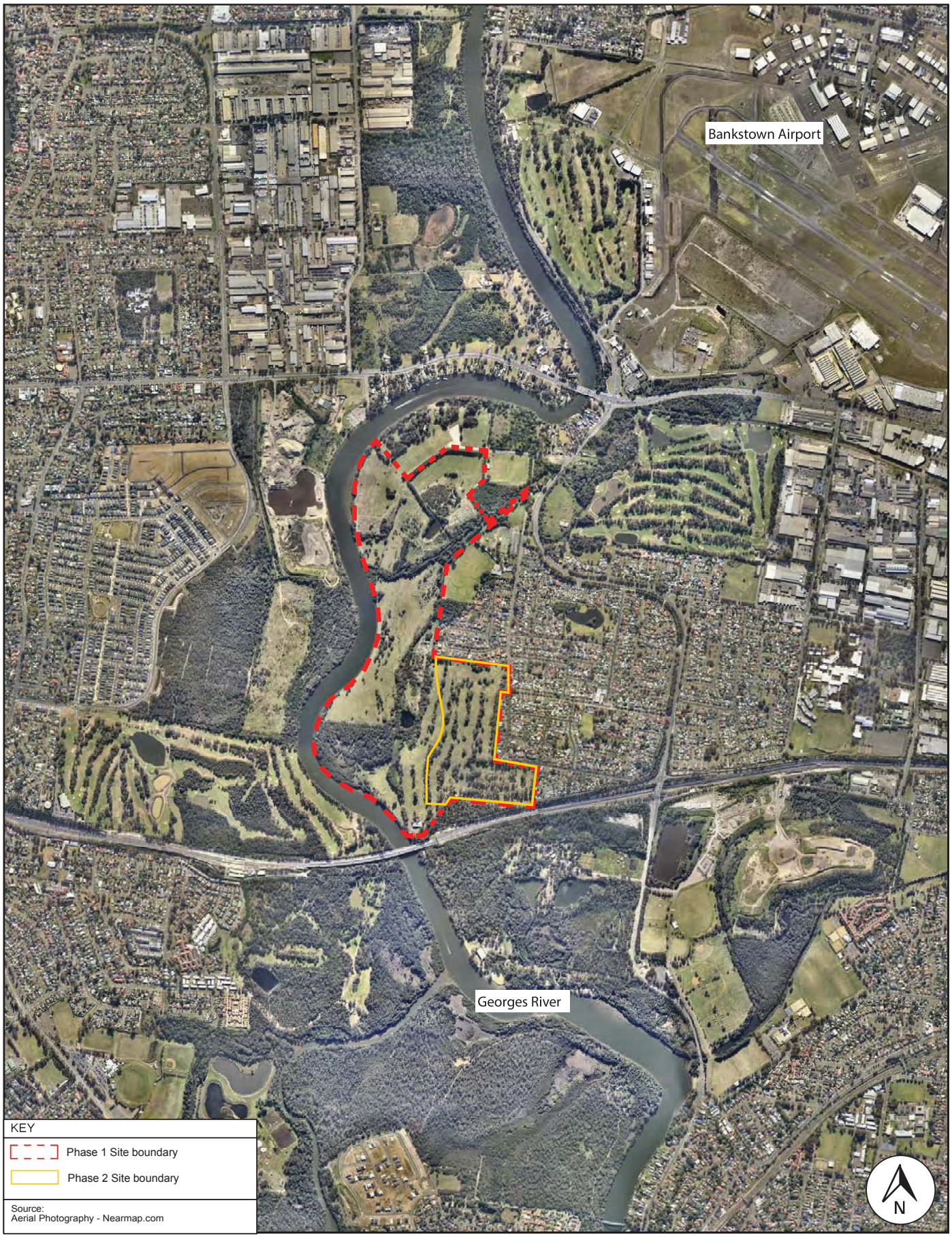
0 150 300 450 600 750m
Approximate Scale

Phase 2 – Residential estate land only (ES 2014b) - Figures

EnvironmentalStrategies

Site Location Plan | Figure 1

Riverlands Development, Milperra, NSW, 2214



Project: 14050 Riverlands GC

0 400 800 1200 1600 2000m

Approximate Scale

Site Layout Plan | Figure 2

Riverlands Development, Milperra, NSW, 2214

Project: 14050 Riverlands GC

0 150 300 450 600 750m

Approximate Scale

EnvironmentalStrategies

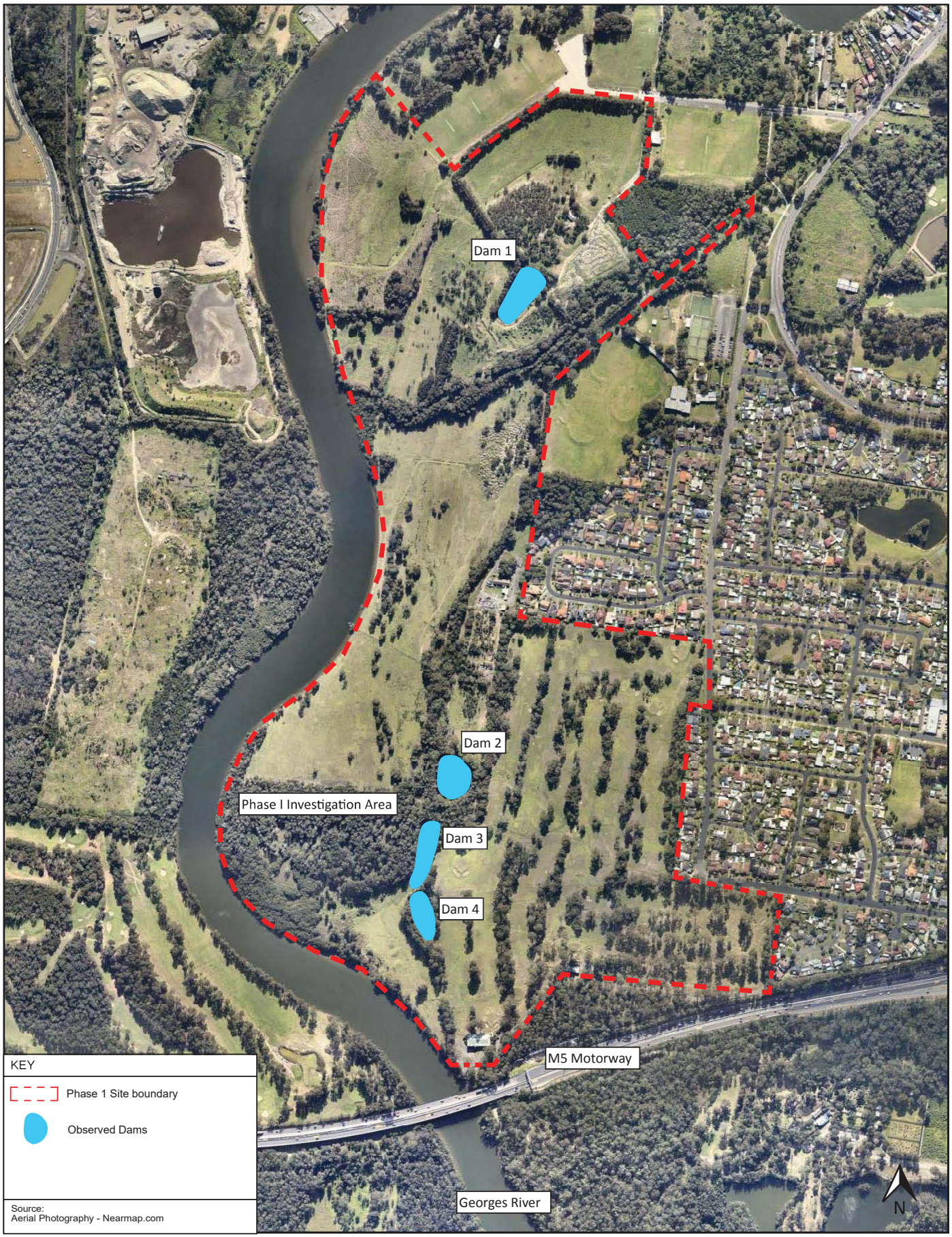
Site Cadastral Boundaries | Figure 3

Riverlands Development, Milperra, NSW, 2214

Project: 14050 Riverlands GC

Observed Dams | Figure 4

Riverlands Development, Milperra, NSW, 2214



Project: 14050 Riverlands GC

0 150 300 450 600 750m

Approximate Scale

0 100 200 300 400 500 m

Approximate Scale

N

EnvironmentalStrategies

Sample Location Plan | Figure 6

Riverlands Development, Milperra, NSW, 2214

0 50 100 150 200 250m

Approximate Scale

Project: 14050 Riverlands GC

EnvironmentalStrategies

Exceedances of the Site Assessment Criteria in Soil | Figure 7

Riverlands Development, Milperra, NSW, 2214

Location	Depth	Analyte	Units	Result	Criteria	Limit
BH17	0.1	TPH >C16-C34	mg/kg	2000	ESL	300

Project: 14050 Riverlands GC

EnvironmentalStrategies

Exceedances of the Site Assessment Criteria in Water | Figure 8

Riverlands Development, Milperra, NSW, 2214

Location	Analyte	Units	Result	Criteria	Limit
MW1	Cadmium	mg/L	0.0014	Drinking; Marine	0.0007; 0.002
MW1	Nickel	mg/L	0.31	Marine	0.007
MW1	Zinc	mg/L	1.1	Marine	0.015

Location	Analyte	Units	Result	Criteria	Limit
MW2	Copper	mg/L	0.005	Marine	0.0013
MW2	Zinc	mg/L	0.033	Marine	0.015

Location	Analyte	Units	Result	Criteria	Limit
MW4	Cadmium	mg/L	0.0028	Drinking; Marine	0.0007; 0.002
MW4	Copper	mg/L	0.018	Marine	0.0013
MW4	Nickel	mg/L	0.18	Drinking; Marine	0.02; 0.007
MW4	Zinc	mg/L	0.52	Marine	0.015

Location	Analyte	Units	Result	Criteria	Limit
MW6	Zinc	mg/L	0.037	Marine	0.015

Location	Analyte	Units	Result	Criteria	Limit
MW3	Copper	mg/L	0.003	Marine	0.0013
MW3	Nickel	mg/L	0.019	Drinking; Marine	0.02; 0.007
MW3	Zinc	mg/L	0.15	Marine	0.015

Location	Analyte	Units	Result	Criteria	Limit
MW7	Cadmium	mg/L	0.0019	Marine	0.002
MW7	Copper	mg/L	0.007	Marine	0.0013
MW7	Nickel	mg/L	0.086	Drinking; Marine	0.02; 0.007
MW7	Zinc	mg/L	0.24	Marine	0.015

KEY

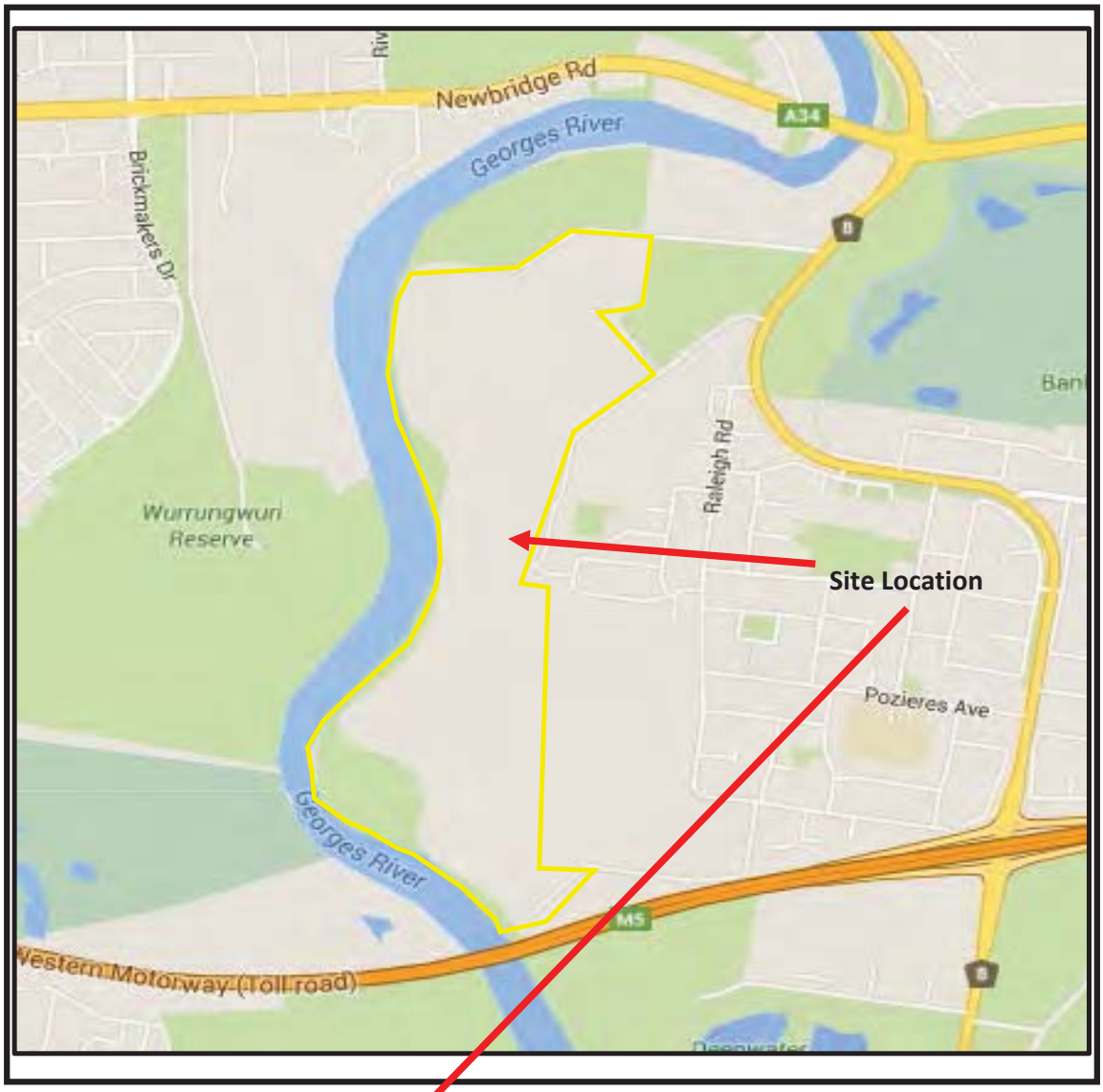
- Site Boundary
- Extended Phase 2 Investigation Boundary
- Residential Area 2(a) Residential A Investigation Boundary
- Groundwater Well
- Soil Bore

Source:
Aerial Photograpghy - Nearmap.com

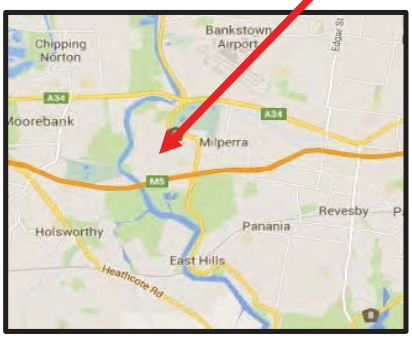
0 50 100 150 200 250m
Approximate Scale

Project: 14050 Riverlands GC

Phase 2 (Revision A) – remainder of property only (Sullivan-ES, May 2016) - Figures



Imagery: Google Maps 2016



N

Not to scale

SULLIVAN environmental sciences	**Client:** Statewide Planning Pty Ltd	**Figure 1:** Site Location
	Project: Phase 2 Contamination Investigation	
Project # SES_439	**Location:** Prescot Parade, Milperra NSW	**Date:** 18/5/2016

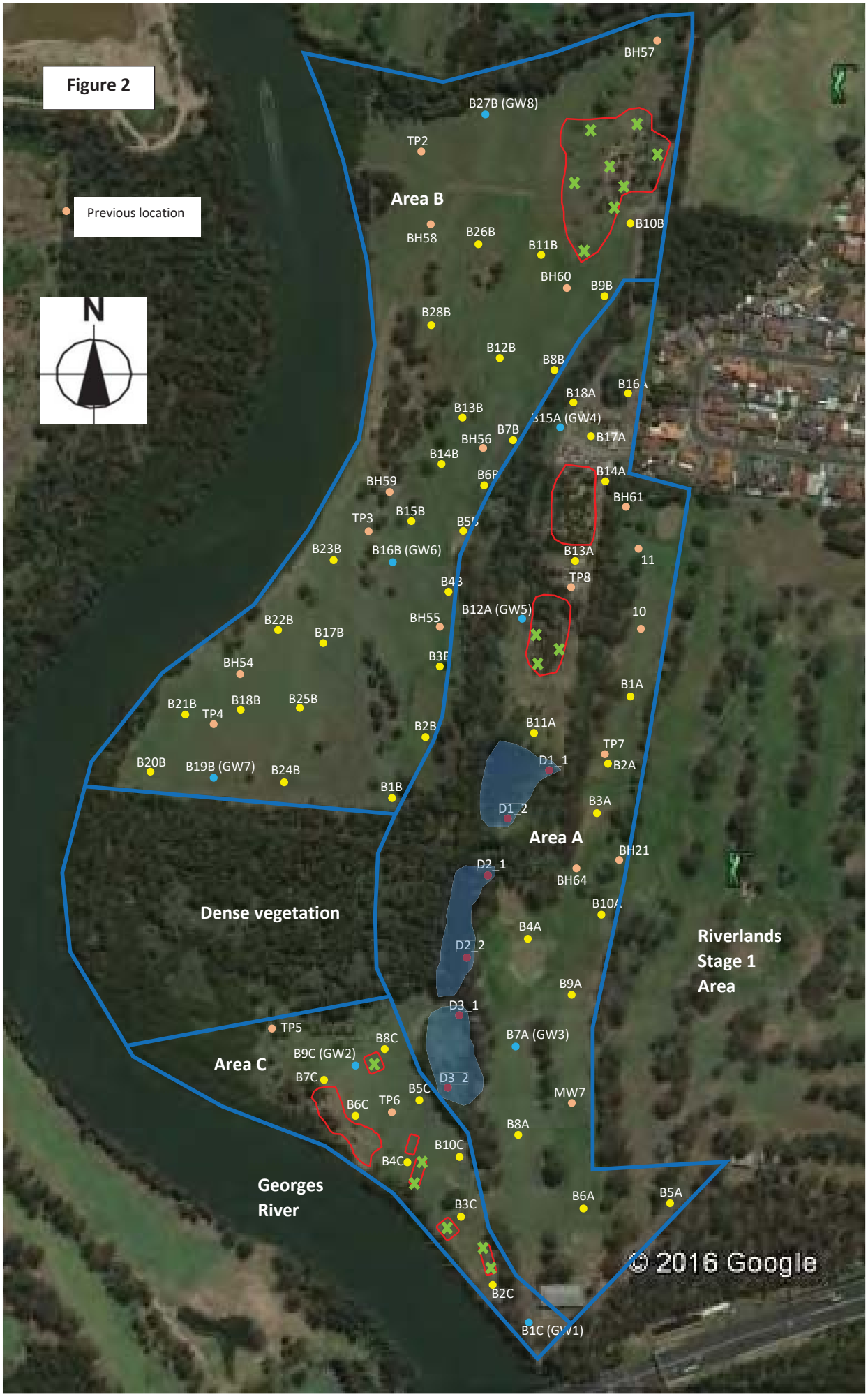


Figure 2
Previous location
N
Area B
Area A
Area C
Dense vegetation
Georges River
Riverlands Stage 1 Area
BH57
B27B (GW8)
TP2
BH58
B26B
B11B
B10B
BH60
B9B
B28B
B12B
B8B
B18A
B13B
B15A (GW4)
B7B
BH56
B17A
B14B
B6P
B14A
BH59
BH61
TP3
B15B
B23B
B16B (GW6)
B13A
11
TP8
B12A (GW5)
10
BH55
B22B
B17B
BH54
B1A
B21B
TP4
B18B
B25B
B2B
B11A
TP7
B2A
B20B
B19B (GW7)
B24B
B1B
D1_1
D1_2
B3A
BH21
D2_1
BH64
B4A
D2_2
B9A
D3_1
TP5
B8C
B7A (GW3)
B9C (GW2)
B7C
D3_2
B5C
MW7
B6C
TP6
B8A
B10C
B4C
B6A
B5A
B3C
© 2016 Google
B2C
B1C (GW1)

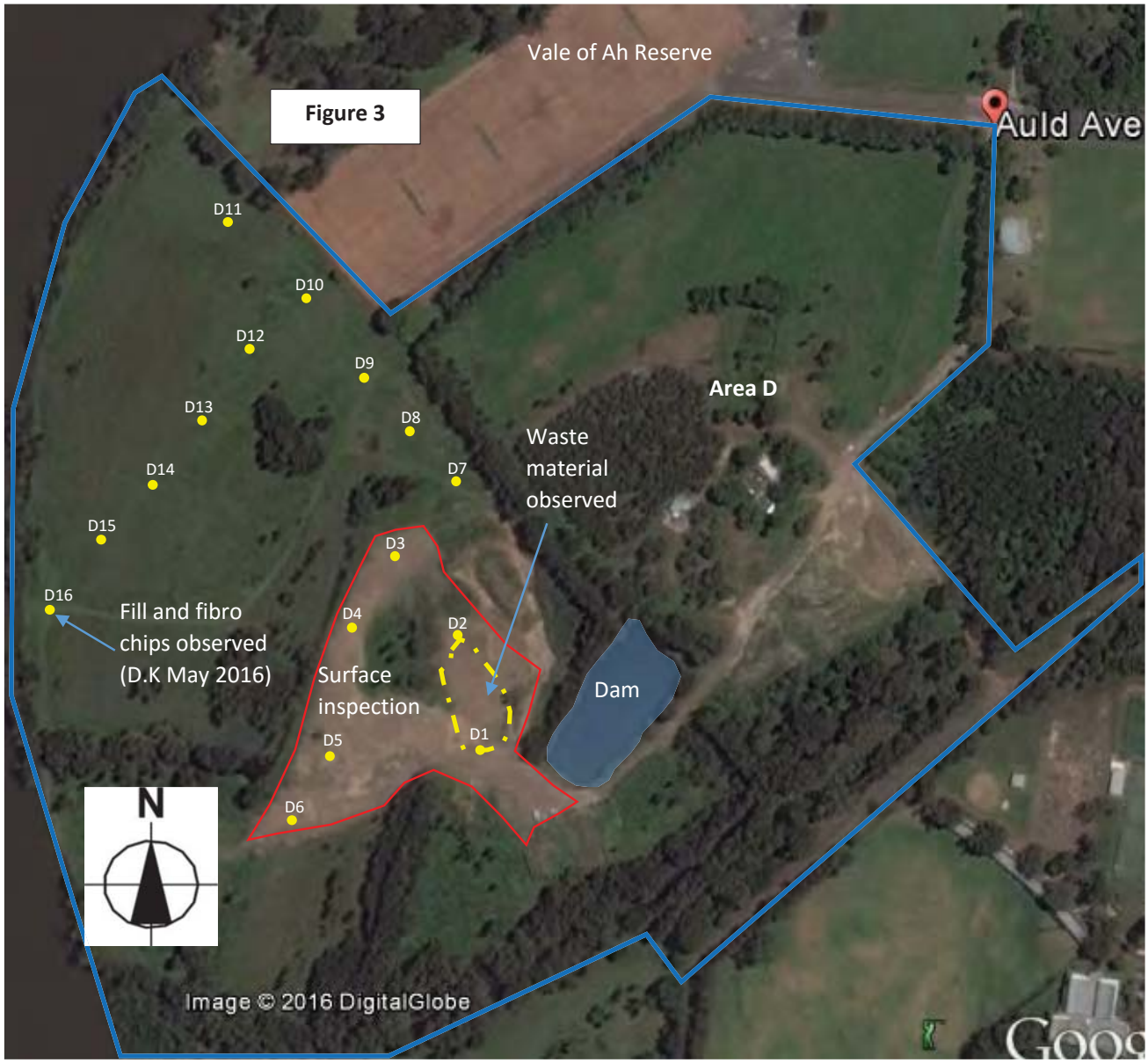
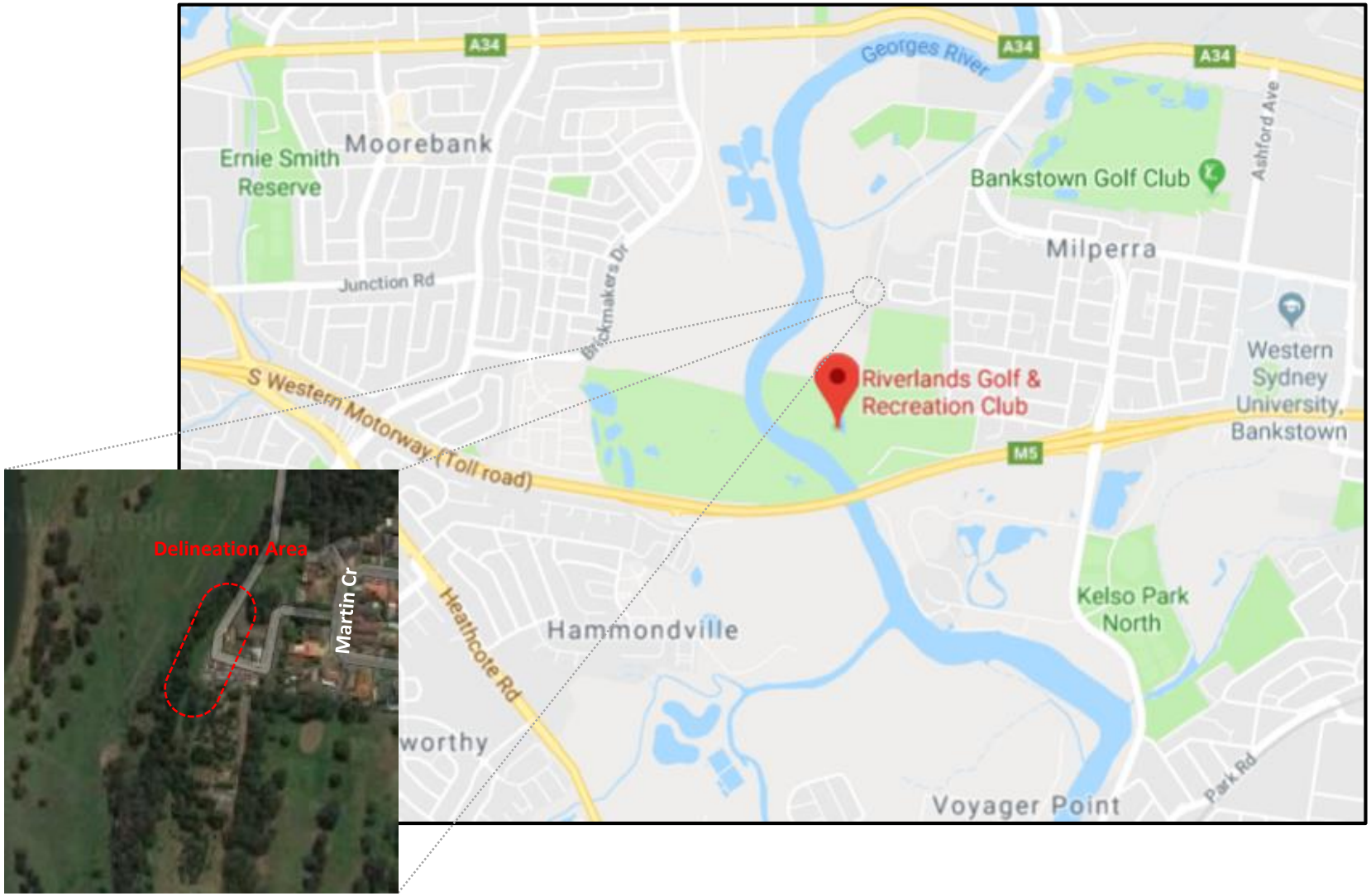


Figure 3
Vale of Ah Reserve
Auld Ave
D11
D10
D12
D9
D13
D8
D14
D7
D15
D3
D16
D4
D2
D5
D1
D6
Area D
Waste material observed
Fill and fibro chips observed (D.K May 2016)
Surface inspection
Dam
N
Image © 2016 DigitalGlobe

Delineation – Ash-filled embankment land (Sullivan-ES, Dec 2018) - Figures

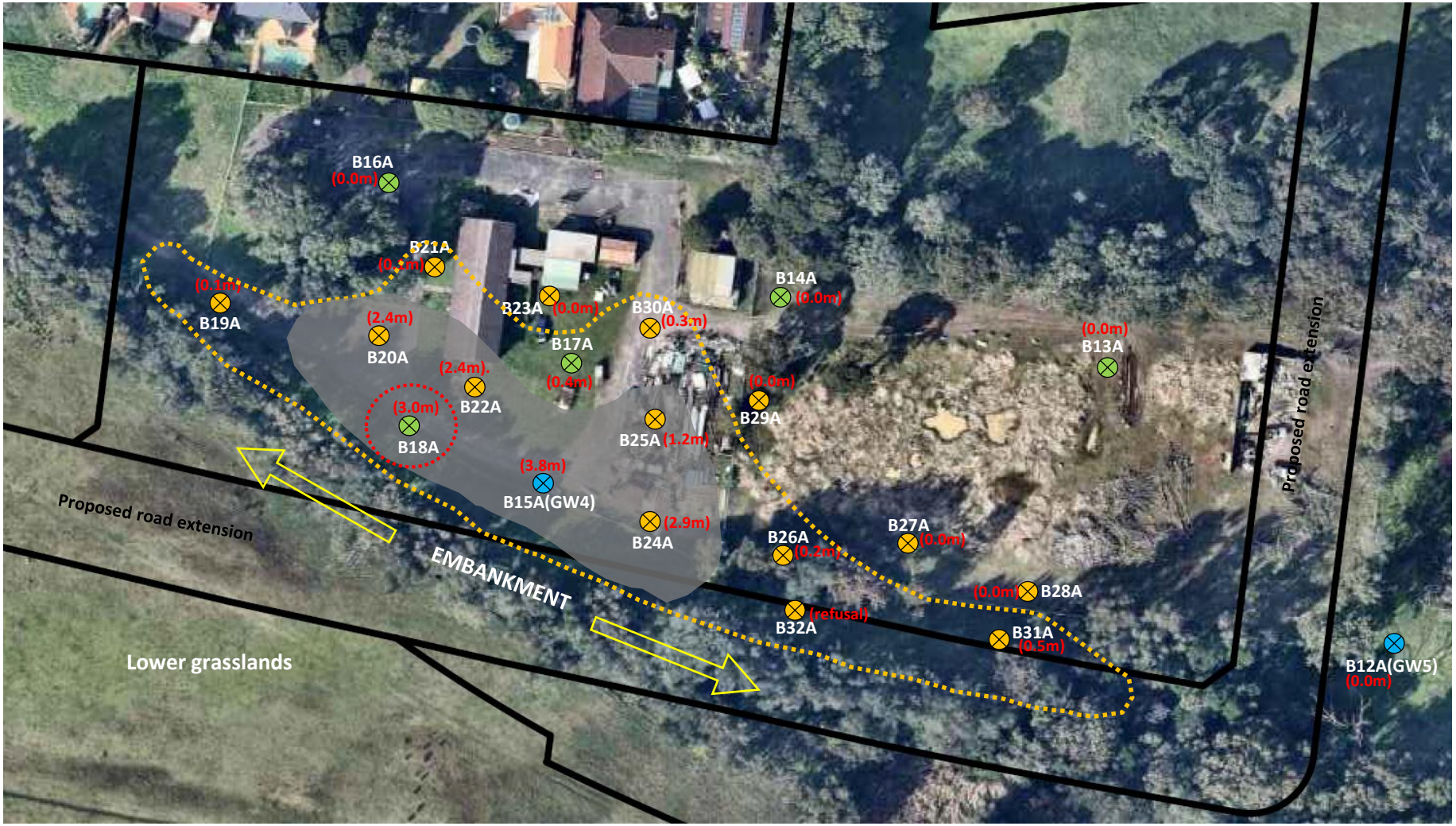


N

Not to scale Date: 14/12/18

Source: Google Maps 2018

SULLIVAN environmental sciences	Project #: **SES_439**	Title: **Delineation Investigation**
	Figure 1: **Site Location**	Address: **Riverlands Development Project, Milperra NSW**



Not to scale

Date: 18/12/2018

Source: PCB Pty Ltd (09/01/2018)

Soil bore location (2018)

Soil bore location (2016)

Soil and groundwater bore location (2016)

All added locations shown are approximate

Approx. extent of ash fill

Approx. extent of asbestos impacts (not defined)

Approx. extent of thick ash fill (>0.5m thick)

(2.4m) Ash fill thickness (not depth)

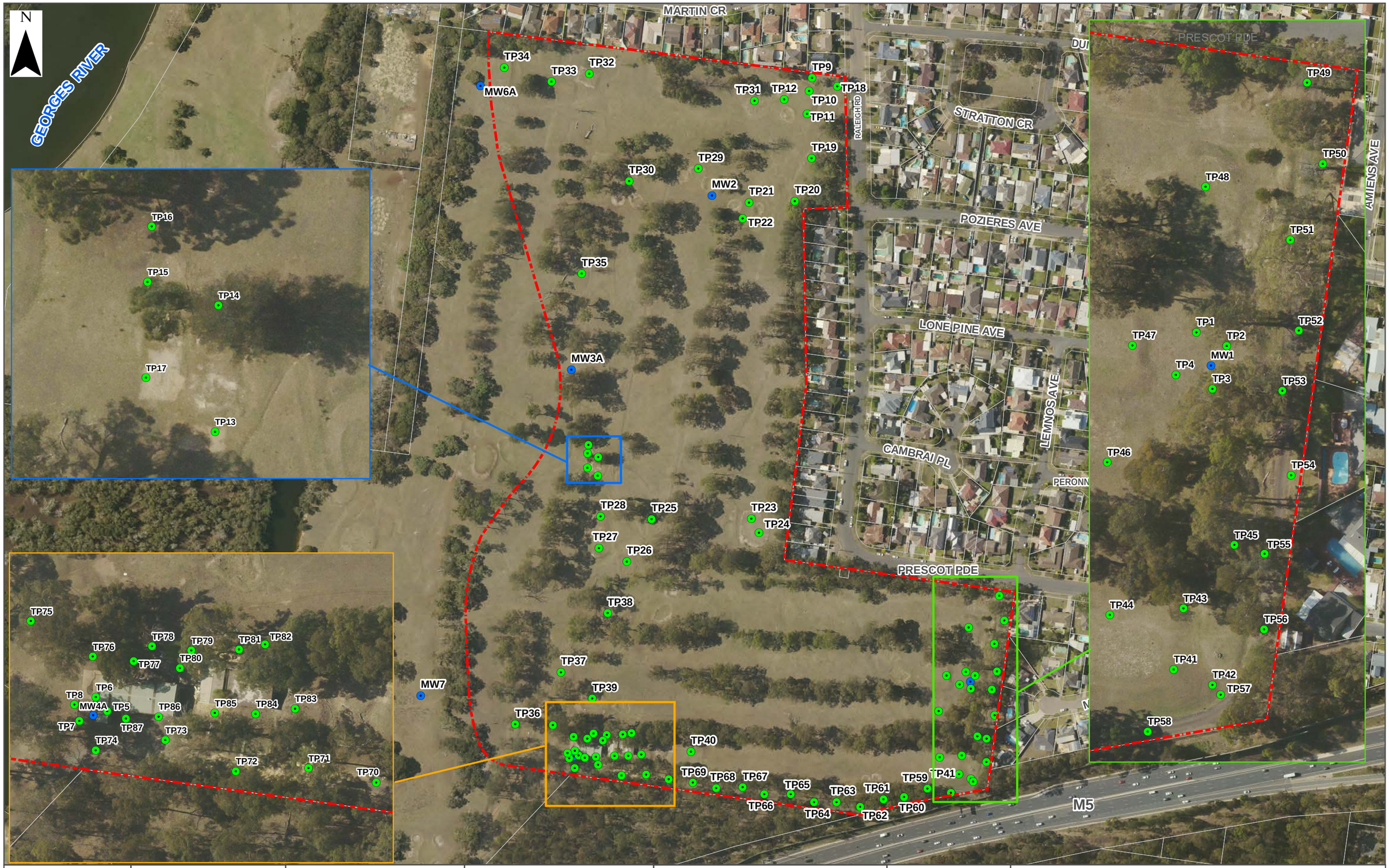
N

SULLIVAN environmental sciences

Project #: **SES_439**	Title: **Delineation Investigation**
Figure 2: **Site Layout and Sampling Locations**	Address: **Riverlands Development Project, Milperra NSW**

Data Gap Investigation, (Sullivan-ES, May 2020) - Figures

	SULLIVAN environmental sciences	**Project:** SES_539 - Data Gap Investigation	**Title:** Riverlands Residential Development	**Legend:** Site Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 150 300 450 600 Meters
		Figure: Site Location	**Address:** 53 Prescot Parade, Milperra NSW		Date: 25 March 2020	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Base Map © NSW Department Finance, Services & Innovation 2020 Topo Map: © Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



SULLIVAN environmental sciences	**Project:** SES_539 - Data Gap Investigation	**Title:** Riverlands Residential Development	**Legend:** Monitoring Well; Test Pit; Site Boundary; Property Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
	Figure: Sampling Locations	**Address:** 53 Prescot Parade, Milperra NSW		Date: 25 March 2020	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2020

	SULLIVAN environmental sciences	**Project:** SES_539 - Data Gap Investigation	**Title:** Riverlands Residential Development	**Legend:** Monitoring Well; Inferred GW Flow Direction; Site Boundary; Property Boundary	Coordinate System: GDA 1994 MGA Zone 56	Scale: 0 50 100 150 200 Meters
		Figure: Inferred Groundwater Flow Direction	**Address:** 53 Prescot Parade, Milperra NSW		Date: 25 March 2020	Data Sources: Aerial Imagery: Aerometrex Pty Ltd. Property Boundaries © NSW Department Finance, Services & Innovation 2020

E

Appendix E ProUCL 95% UCL Output Sheet - Chlordane

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Uncensored Full Data Sets**											
2												
3	User Selected Options											
4	Date/Time of Computation			5/01/2021 4:17:59 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**C0**											
12												
13	**General Statistics**											
14	Total Number of Observations					17	Number of Distinct Observations					4
15							Number of Missing Observations					0
16	Minimum					0.025	Mean					3.791
17	Maximum					57.4	Median					0.025
18	SD					13.9	Std. Error of Mean					3.371
19	Coefficient of Variation					3.667	Skewness					4.044
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.304	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.892	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.481	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.215	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					9.676	95% Adjusted-CLT UCL (Chen-1995)					12.87
31							95% Modified-t UCL (Johnson-1978)					10.23
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					4.859	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.902	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.506	**Kolmogrov-Smirnoff Gamma GOF Test**					
37	5% K-S Critical Value					0.233	Data Not Gamma Distributed at 5% Significance Level					
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					0.183	k star (bias corrected MLE)					0.19
42	Theta hat (MLE)					20.76	Theta star (bias corrected MLE)					20
43	nu hat (MLE)					6.207	nu star (bias corrected)					6.445
44	MLE Mean (bias corrected)					3.791	MLE Sd (bias corrected)					8.706
45							Approximate Chi Square Value (0.05)					1.871
46	Adjusted Level of Significance					0.0346	Adjusted Chi Square Value					1.625
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					13.06	95% Adjusted Gamma UCL (use when n<50)					15.03
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.483	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.892	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.483	**Lilliefors Lognormal GOF Test**					

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.215	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	-3.689				Mean of logged Data		-2.756
60					Maximum of Logged Data	4.05				SD of logged Data		2.27
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	13.4				90% Chebyshev (MVUE) UCL		1.646
64					95% Chebyshev (MVUE) UCL	2.139				97.5% Chebyshev (MVUE) UCL		2.824
65					99% Chebyshev (MVUE) UCL	4.167						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	9.336				95% Jackknife UCL		9.676
72					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL		N/A
73					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL		N/A
74					95% BCA Bootstrap UCL	N/A						
75					90% Chebyshev(Mean, Sd) UCL	13.9				95% Chebyshev(Mean, Sd) UCL		18.48
76					97.5% Chebyshev(Mean, Sd) UCL	24.84				99% Chebyshev(Mean, Sd) UCL		37.33
77												
78	**Suggested UCL to Use**											
79					99% Chebyshev (Mean, Sd) UCL	37.33						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												

F

Appendix F Laboratory Analytical Reports

CERTIFICATE OF ANALYSIS

Work Order	: **ES2100374**	Page	: 1 of 6
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020 11:30
Order number	: ----	Date Analysis Commenced	: 08-Jan-2021
C-O-C number	: ----	Issue Date	: 13-Jan-2021 09:40
Sampler	: Adam Sullivan		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP066: Positive PCB results have been confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)			Sample ID	**FP10_0.3-0.4**	----	----	----	----
			Sampling date / time	23-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	**ES2100374-001**	--------	--------	--------	--------
				Result	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	1	%	**86.9**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP10_0.3-0.4	FP05_0.5-0.6	FP07_0.2-0.3	FP11_0.3-0.4	FP12_0.3-0.4
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2100374-001	ES2100374-002	ES2100374-003	ES2100374-004	ES2100374-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	63.7	51.9	6.0	35.2
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)								
Final pH	----	0.1	pH Unit	7.3	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	0.4	<0.1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	63.3	81.7	74.9	77.9

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP14_0.2-0.3	----	----	----	----
			Sampling date / time	23-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2100374-006	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**17.9**	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	**0.4**	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**69.0**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **DI WATER LEACHATE**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149

QUALITY CONTROL REPORT

Work Order	: **ES2100374**	Page	: 1 of 3
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020
Order number	: ----	Date Analysis Commenced	: 08-Jan-2021
C-O-C number	: ----	Issue Date	: 13-Jan-2021
Sampler	: Adam Sullivan		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3452874)									
ES2100374-002	FP05_0.5-0.6	EA055: Moisture Content	----	0.1	%	63.7	74.4	15.5	0% - 20%
ES2100438-024	Anonymous	EA055: Moisture Content	----	0.1	%	8.6	8.6	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3452512)									
ES2100374-002	FP05_0.5-0.6	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3452512)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	107	62.0	126

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3456759)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	94.7	68.9	113

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3452512)							
ES2100374-002	FP05_0.5-0.6	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	103	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2100374**	Page	: 1 of 5
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020
Site	: ----	Issue Date	: 13-Jan-2021
Sampler	: Adam Sullivan	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
Soil Glass Jar - Unpreserved						
FP05_0.5-0.6, FP07_0.2-0.3, FP11_0.3-0.4, FP12_0.3-0.4, FP14_0.2-0.3	----	----	----	08-Jan-2021	06-Jan-2021	**2**
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)						
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
FP10_0.3-0.4	11-Jan-2021	06-Jan-2021	**5**	----	----	----
EP066: Polychlorinated Biphenyls (PCB)						
Soil Glass Jar - Unpreserved						
FP05_0.5-0.6, FP07_0.2-0.3, FP11_0.3-0.4, FP12_0.3-0.4, FP14_0.2-0.3	08-Jan-2021	06-Jan-2021	**2**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
FP05_0.5-0.6, FP07_0.2-0.3, FP11_0.3-0.4, FP12_0.3-0.4, FP14_0.2-0.3	**23-Dec-2020**	**----**	----	----	**08-Jan-2021**	06-Jan-2021	×

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN60-DIa-G)							
FP10_0.3-0.4	**23-Dec-2020**	**11-Jan-2021**	06-Jan-2021	×	**----**	----	----
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
FP05_0.5-0.6, FP07_0.2-0.3, FP11_0.3-0.4, FP12_0.3-0.4, FP14_0.2-0.3	**23-Dec-2020**	**08-Jan-2021**	06-Jan-2021	×	**08-Jan-2021**	17-Feb-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
FP10_0.3-0.4	**11-Jan-2021**	**12-Jan-2021**	18-Jan-2021	✓	**12-Jan-2021**	21-Feb-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Deionised Water Leach - Glass Leaching Vessel	EN60-Dla-G	SOIL	In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates
Separatory Funnel Extraction of Liquids	ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2100374**

Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	: Loren.Schiavon@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_539	Page	: 1 of 2
Order number	: ----	Quote number	: ES2015SULENV0034 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Adam Sullivan		

Dates

Date Samples Received	: 24-Dec-2020 11:30	Issue Date	: 08-Jan-2021
Client Requested Due Date	: 11-Jan-2021	Scheduled Reporting Date	: **11-Jan-2021**

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 6 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **(08/01/2021) This is an updated SRN with corrections to sales items**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EN60-Dla-G Deionised Water Leach - Glass Leaching Vessel	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP066-PCB-WA Polychlorinated Biphenyls (PCB)
ES2100374-001	23-Dec-2020 00:00	FP10_0.3-0.4		✓		✓
ES2100374-002	23-Dec-2020 00:00	FP05_0.5-0.6	✓		✓	
ES2100374-003	23-Dec-2020 00:00	FP07_0.2-0.3	✓		✓	
ES2100374-004	23-Dec-2020 00:00	FP11_0.3-0.4	✓		✓	
ES2100374-005	23-Dec-2020 00:00	FP12_0.3-0.4	✓		✓	
ES2100374-006	23-Dec-2020 00:00	FP14_0.2-0.3	✓		✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ADAM SULLIVAN

- *AU Certificate of Analysis - NATA (COA)	Email	adam@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	adam@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	adam@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	adam@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	adam@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	adam@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	adam@sullivan-es.com.au
- EDI Format - ESDAT (ESDAT)	Email	adam@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	adam@sullivan-es.com.au

SEAN

- *AU Certificate of Analysis - NATA (COA)	Email	sean@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sean@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sean@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sean@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	sean@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	sean@sullivan-es.com.au
- EDI Format - ESDAT (ESDAT)	Email	sean@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	sean@sullivan-es.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2045931**	Page	: 1 of 30
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020 11:24
Order number	: ----	Date Analysis Commenced	: 24-Dec-2020
C-O-C number	: ----	Issue Date	: 04-Jan-2021 16:51
Sampler	: ADAM SULLIVAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 41		
No. of samples analysed	: 41		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP066 : Positive PCB results are confirmed by re-extraction and re-analysis.
- EP080: Result for FP10_0.3-0.4 has been confirmed by re-analysis.
- EG035: Positive Hg results for ES2045931 #13,32,38 have been confirmed by reanalysis.
- EP075(SIM): LOR raised due to the high amount of moisture present.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP01_0.2-0.3	QZ01	FP01_1.5	FP02_0.3-0.4	FP03_0.3-04
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-001	ES2045931-002	ES2045931-003	ES2045931-004	ES2045931-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.4	16.4	27.6	12.8	5.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	----	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	----	No
Asbestos Type	1332-21-4	-	--	-	----	-	----	-
Sample weight (dry)	----	0.01	g	59.8	----	56.3	----	71.9
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	----	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	No	----	No
Organic Fibre	----	0.1	g/kg	No	----	No	----	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	11	22	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	8	19	13	8	5
Copper	7440-50-8	5	mg/kg	36	28	56	8	11
Lead	7439-92-1	5	mg/kg	19	24	45	16	11
Nickel	7440-02-0	2	mg/kg	19	14	9	6	5
Zinc	7440-66-6	5	mg/kg	100	65	143	35	45
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.4	<0.1	0.2
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP01_0.2-0.3	QZ01	FP01_1.5	FP02_0.3-0.4	FP03_0.3-04
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-001	ES2045931-002	ES2045931-003	ES2045931-004	ES2045931-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP01_0.2-0.3	QZ01	FP01_1.5	FP02_0.3-0.4	FP03_0.3-04
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-001	ES2045931-002	ES2045931-003	ES2045931-004	ES2045931-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP01_0.2-0.3	QZ01	FP01_1.5	FP02_0.3-0.4	FP03_0.3-04
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-001	ES2045931-002	ES2045931-003	ES2045931-004	ES2045931-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	111	101	----	----	97.3
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	86.0	79.4	----	----	78.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	75.5	70.1	----	----	71.0
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	79.0	79.9	86.5	86.5	84.7
2-Chlorophenol-D4	93951-73-6	0.5	%	80.5	81.6	86.2	86.3	84.8
2.4.6-Tribromophenol	118-79-6	0.5	%	69.1	69.9	73.4	72.2	70.2
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	92.9	92.6	97.8	98.2	96.3
Anthracene-d10	1719-06-8	0.5	%	91.6	92.5	97.4	96.8	96.6
4-Terphenyl-d14	1718-51-0	0.5	%	84.7	85.0	90.1	90.4	88.6
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	78.4	88.5	85.5	91.1	93.6
Toluene-D8	2037-26-5	0.2	%	77.4	88.2	85.6	89.3	93.9
4-Bromofluorobenzene	460-00-4	0.2	%	86.8	89.5	89.2	88.0	94.6

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP04_0.2-0.3	FP05_0.5-0.6	FP06_0.3-0.4	FP07_0.2-0.3	FP08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-006	ES2045931-007	ES2045931-008	ES2045931-009	ES2045931-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.6	61.1	16.8	42.2	23.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	436	7	12	21
Cadmium	7440-43-9	1	mg/kg	<1	2	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	30	367	15	18	33
Copper	7440-50-8	5	mg/kg	<5	1330	13	103	18
Lead	7439-92-1	5	mg/kg	12	98	19	85	312
Nickel	7440-02-0	2	mg/kg	2	990	4	22	5
Zinc	7440-66-6	5	mg/kg	9	232	56	857	467
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP04_0.2-0.3	FP05_0.5-0.6	FP06_0.3-0.4	FP07_0.2-0.3	FP08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-006	ES2045931-007	ES2045931-008	ES2045931-009	ES2045931-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP04_0.2-0.3	FP05_0.5-0.6	FP06_0.3-0.4	FP07_0.2-0.3	FP08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-006	ES2045931-007	ES2045931-008	ES2045931-009	ES2045931-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.8	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**1.0**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.9**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	**140**	<100
C29 - C36 Fraction	----	100	mg/kg	<100	**100**	<100	**120**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	**100**	<50	**260**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	**150**	<100	**210**	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	**150**	<50	**210**	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP04_0.2-0.3	FP05_0.5-0.6	FP06_0.3-0.4	FP07_0.2-0.3	FP08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-006	ES2045931-007	ES2045931-008	ES2045931-009	ES2045931-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	99.8	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	81.4	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	71.3	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	83.8	79.8	85.5	84.0	86.3
2-Chlorophenol-D4	93951-73-6	0.5	%	85.0	76.9	83.8	82.6	85.8
2.4.6-Tribromophenol	118-79-6	0.5	%	69.0	76.1	71.8	77.9	74.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	95.4	88.1	94.6	93.2	95.0
Anthracene-d10	1719-06-8	0.5	%	95.0	92.0	96.2	95.7	97.1
4-Terphenyl-d14	1718-51-0	0.5	%	87.8	83.4	88.0	86.2	87.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	92.0	84.4	100	98.7	98.0
Toluene-D8	2037-26-5	0.2	%	95.4	74.8	101	95.2	94.0
4-Bromofluorobenzene	460-00-4	0.2	%	92.5	85.5	110	98.4	96.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP09_0.1-0.2	FP09_0.8-0.9	FP10_0.3-0.4	FP11_0.3-0.4	FP12_0.3-0.4
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-011	ES2045931-012	ES2045931-013	ES2045931-014	ES2045931-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.0	9.1	14.0	9.2	37.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No*	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	No	No	No
Asbestos Type	1332-21-4	-	--	----	----	Am	-	-
Sample weight (dry)	----	0.01	g	----	----	48.2	73.3	29.6
APPROVED IDENTIFIER:	----	-	--	----	----	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	----	----	No	No	No
Organic Fibre	----	0.1	g/kg	----	----	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	<5	31	30	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	5	21	<1
Chromium	7440-47-3	2	mg/kg	16	7	396	111	5
Copper	7440-50-8	5	mg/kg	36	11	2330	545	400
Lead	7439-92-1	5	mg/kg	17	9	775	1460	48
Nickel	7440-02-0	2	mg/kg	15	3	244	62	2
Zinc	7440-66-6	5	mg/kg	71	30	1430	8810	358
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	1.3	3.9	0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	125	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.11	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP09_0.1-0.2	FP09_0.8-0.9	FP10_0.3-0.4	FP11_0.3-0.4	FP12_0.3-0.4
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-011	ES2045931-012	ES2045931-013	ES2045931-014	ES2045931-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	**0.12**	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	**0.18**	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	**0.30**	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP09_0.1-0.2	FP09_0.8-0.9	FP10_0.3-0.4	FP11_0.3-0.4	FP12_0.3-0.4
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-011	ES2045931-012	ES2045931-013	ES2045931-014	ES2045931-015
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	**24**	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	**220**	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	**150**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	**220**	**150**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	**30**	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	**16**	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	**260**	**180**	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	**150**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	**260**	**330**	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP09_0.1-0.2	FP09_0.8-0.9	FP10_0.3-0.4	FP11_0.3-0.4	FP12_0.3-0.4
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-011	ES2045931-012	ES2045931-013	ES2045931-014	ES2045931-015
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	**3.4**	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	**7.6**	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	**3.4**	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	**14.4**	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	**11.0**	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**97.2**	**99.2**	**96.0**	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**77.6**	**77.5**	**82.2**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**70.2**	**63.2**	**87.0**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**86.1**	**86.4**	**86.1**	**87.4**	**87.4**
2-Chlorophenol-D4	93951-73-6	0.5	%	**85.4**	**85.2**	**85.7**	**86.2**	**86.3**
2.4.6-Tribromophenol	118-79-6	0.5	%	**71.4**	**69.8**	**70.2**	**74.6**	**73.2**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**95.8**	**95.4**	**98.7**	**96.2**	**95.6**
Anthracene-d10	1719-06-8	0.5	%	**97.6**	**95.8**	**99.2**	**96.8**	**98.3**
4-Terphenyl-d14	1718-51-0	0.5	%	**88.6**	**87.8**	**92.2**	**88.0**	**88.8**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**91.3**	**92.3**	**94.2**	**88.7**	**84.6**
Toluene-D8	2037-26-5	0.2	%	**90.8**	**92.1**	**93.5**	**87.3**	**86.0**
4-Bromofluorobenzene	460-00-4	0.2	%	**91.8**	**91.7**	**89.4**	**84.0**	**85.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP13_0.3-0.4	QZ03	FP14_0.2-0.3	FP15_0.2-0.3	FP16_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-016	ES2045931-017	ES2045931-018	ES2045931-019	ES2045931-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	16.5	18.2	18.8	14.7	18.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	No	----
Asbestos Type	1332-21-4	-	--	-	----	-	-	----
Sample weight (dry)	----	0.01	g	38.4	----	30.7	26.3	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	A. SMYLIE	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	No	No	----
Organic Fibre	----	0.1	g/kg	No	----	No	No	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	7	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	24	7	12	20
Copper	7440-50-8	5	mg/kg	67	78	31	134	37
Lead	7439-92-1	5	mg/kg	37	45	42	401	56
Nickel	7440-02-0	2	mg/kg	17	16	14	13	8
Zinc	7440-66-6	5	mg/kg	207	149	117	477	74
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.2	0.1	<0.1	0.5	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	0.2	<0.1	----	0.6	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP13_0.3-0.4	QZ03	FP14_0.2-0.3	FP15_0.2-0.3	FP16_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-016	ES2045931-017	ES2045931-018	ES2045931-019	ES2045931-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	**0.08**	<0.05	----	**0.11**	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	**0.06**	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	**0.08**	<0.05	----	**0.11**	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	**0.06**	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP13_0.3-0.4	QZ03	FP14_0.2-0.3	FP15_0.2-0.3	FP16_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-016	ES2045931-017	ES2045931-018	ES2045931-019	ES2045931-020
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	**0.8**	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	**0.8**	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	**0.6**	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	**0.5**	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	**2.7**	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	**0.6**	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.9**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	**110**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	**110**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	**120**
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	**120**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	FP13_0.3-0.4	QZ03	FP14_0.2-0.3	FP15_0.2-0.3	FP16_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-016	ES2045931-017	ES2045931-018	ES2045931-019	ES2045931-020
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	82.0	96.6	----	104	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	82.0	79.0	----	84.0	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	79.5	75.0	----	79.0	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	83.9	83.0	84.8	86.4	86.0
2-Chlorophenol-D4	93951-73-6	0.5	%	84.7	82.0	83.4	85.4	85.8
2.4.6-Tribromophenol	118-79-6	0.5	%	73.4	72.6	69.5	72.8	78.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	95.1	94.9	95.9	96.5	94.9
Anthracene-d10	1719-06-8	0.5	%	94.7	92.9	96.0	97.1	96.8
4-Terphenyl-d14	1718-51-0	0.5	%	87.8	86.5	87.9	89.3	87.5
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	92.6	88.1	87.3	86.7	88.9
Toluene-D8	2037-26-5	0.2	%	89.5	85.4	87.1	85.1	89.4
4-Bromofluorobenzene	460-00-4	0.2	%	87.9	78.1	83.2	82.2	88.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QZ04	FP17_0.4-0.5	D01_0.1-0.2	D01_0.4-0.5	D02_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-021	ES2045931-022	ES2045931-026	ES2045931-027	ES2045931-028
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.9	15.3	7.0	4.9	5.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Sample weight (dry)	----	0.01	g	----	29.4	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	----	----	----
Organic Fibre	----	0.1	g/kg	----	No	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	<5	<5	10	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	5	3	5	<2
Copper	7440-50-8	5	mg/kg	28	25	5	5	<5
Lead	7439-92-1	5	mg/kg	45	5	15	5	<5
Nickel	7440-02-0	2	mg/kg	7	24	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	67	43	49	28	9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.6	0.5	0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QZ04	FP17_0.4-0.5	D01_0.1-0.2	D01_0.4-0.5	D02_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-021	ES2045931-022	ES2045931-026	ES2045931-027	ES2045931-028
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QZ04	FP17_0.4-0.5	D01_0.1-0.2	D01_0.4-0.5	D02_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-021	ES2045931-022	ES2045931-026	ES2045931-027	ES2045931-028
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	**110**	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**110**	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	**130**	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	**130**	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**260**	<50	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QZ04	FP17_0.4-0.5	D01_0.1-0.2	D01_0.4-0.5	D02_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-021	ES2045931-022	ES2045931-026	ES2045931-027	ES2045931-028
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	107	121	114
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	96.1	89.3	86.9
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	104	106	102
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	89.9	83.4	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	88.3	83.4	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	82.2	73.0	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	99.5	96.2	----	----	----
Anthracene-d10	1719-06-8	0.5	%	102	95.6	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	90.9	88.9	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	96.1	100	----	----	----
Toluene-D8	2037-26-5	0.2	%	90.8	98.4	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	104	100	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	D02_0.4-0.5	D03_0.1-0.2	D04_0.2-0.3	QZ02	D04_0.4-0.5
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-029	ES2045931-030	ES2045931-031	ES2045931-032	ES2045931-033
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	3.2	5.5	8.7	21.9	5.8
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	9	41	6
Cadmium	7440-43-9	1	mg/kg	<1	7	<1	1	<1
Chromium	7440-47-3	2	mg/kg	2	4	<2	6	<2
Copper	7440-50-8	5	mg/kg	<5	11	<5	19	<5
Lead	7439-92-1	5	mg/kg	<5	68	<5	64	<5
Nickel	7440-02-0	2	mg/kg	<2	2	<2	4	<2
Zinc	7440-66-6	5	mg/kg	<5	63	77	242	18
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.4	0.2	4.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	0.08	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	D02_0.4-0.5	D03_0.1-0.2	D04_0.2-0.3	QZ02	D04_0.4-0.5
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-029	ES2045931-030	ES2045931-031	ES2045931-032	ES2045931-033
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	**0.08**	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**120**	**109**	**111**	**122**	**119**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**89.2**	**78.4**	**90.2**	**91.1**	**89.3**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**92.3**	**105**	**106**	**102**	**73.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	D05_0.2-0.3	D06_0.2-0.3	D06_0.4-0.5	D07_0.1-0.2	D08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-034	ES2045931-035	ES2045931-036	ES2045931-037	ES2045931-038
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	8.7	8.7	5.2	8.1	7.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	4	3	<1	7
Chromium	7440-47-3	2	mg/kg	2	2	<2	2	4
Copper	7440-50-8	5	mg/kg	<5	<5	<5	5	8
Lead	7439-92-1	5	mg/kg	<5	22	<5	6	12
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	2
Zinc	7440-66-6	5	mg/kg	82	207	15	14	54
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	<0.1	0.1	2.6
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	D05_0.2-0.3	D06_0.2-0.3	D06_0.4-0.5	D07_0.1-0.2	D08_0.1-0.2
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045931-034	ES2045931-035	ES2045931-036	ES2045931-037	ES2045931-038
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	**0.05**
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**101**	**110**	**107**	**126**	**117**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**75.0**	**85.2**	**82.5**	**97.7**	**103**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**71.7**	**77.8**	**80.4**	**92.2**	**122**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TRIP BLANK	TRIP SPIKE 5	TSC5	----	----
			Sampling date / time	15-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2045931-039	ES2045931-040	ES2045931-041	--------	--------
				Result	Result	Result	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	**0.2**	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	**10.5**	**14.1**	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	**1.7**	**2.0**	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	**10.7**	**11.5**	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	**3.4**	**3.7**	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	**26.3**	**31.5**	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	**14.1**	**15.2**	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**87.4**	**86.8**	**80.4**	----	----
Toluene-D8	2037-26-5	0.2	%	**91.4**	**78.5**	**94.6**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**92.3**	**99.9**	**82.7**	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)			Sample ID	FP05_F01	FP06_F02	FP07_F03	----	----
			Sampling date / time	23-Dec-2020 00:00	23-Dec-2020 00:00	23-Dec-2020 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2045931-023	ES2045931-024	ES2045931-025	--------	--------
				Result	Result	Result	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**Yes**	**Yes**	**Yes**	**----**	**----**
Asbestos Type	1332-21-4	-	--	**Ch**	**Ch**	**Ch**	**----**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres	**N/A**	**N/A**	**N/A**	**----**	**----**
Sample weight (dry)	----	0.01	g	**16.3**	**66.4**	**66.0**	**----**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**----**	**----**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**----**	**----**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	FP01_0.2-0.3 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP01_1.5 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP03_0.3-04 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP10_0.3-0.4 - 23-Dec-2020 00:00	Mid brown soil containing two pieces of asbestos fibre board approximately 5x3x1mm.
EA200: Description	FP11_0.3-0.4 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP12_0.3-0.4 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP13_0.3-0.4 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP14_0.2-0.3 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP15_0.2-0.3 - 23-Dec-2020 00:00	Mid brown soil.
EA200: Description	FP17_0.4-0.5 - 23-Dec-2020 00:00	Mid brown soil.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	FP05_F01 - 23-Dec-2020 00:00	One piece of asbestos cement sheeting approximately 55x35x5mm.
EA200: Description	FP06_F02 - 23-Dec-2020 00:00	One piece of asbestos cement sheeting approximately 85x40x5mm.
EA200: Description	FP07_F03 - 23-Dec-2020 00:00	One piece of asbestos cement sheeting approximately 155x85x5mm.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: **ES2045931**	Page	: 1 of 19
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020
Order number	: ----	Date Analysis Commenced	: 24-Dec-2020
C-O-C number	: ----	Issue Date	: 04-Jan-2021
Sampler	: ADAM SULLIVAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 41		
No. of samples analysed	: 41		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3441007)									
ES2045767-010	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	123	102	18.4	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	30	30	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	198	199	0.566	0% - 20%
ES2045931-029	D02_0.4-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3441296)									
ES2045858-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	35	40	12.4	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	30	32	6.93	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	13	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	15	12.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	24	26	6.74	No Limit
ES2045931-009	FP07_0.2-0.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	15	19.5	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	14	48.6	0% - 50%

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3441296) - continued									
ES2045931-009	FP07_0.2-0.3	EG005T: Arsenic	7440-38-2	5	mg/kg	12	15	21.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	103	94	9.42	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	85	104	19.9	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	857	750	13.3	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3441298)									
ES2045931-019	FP15_0.2-0.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	17	36.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	19	36.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	20.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	134	125	7.12	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	401	419	4.48	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	477	564	16.6	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3442163)									
ES2045373-022	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	31	31	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	5	5	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	6	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	11	11	0.00	No Limit
ES2045373-035	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	20	19.7	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	5	4	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	6	5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	5	<5	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3441010)									
ES2045910-002	Anonymous	EA055: Moisture Content	----	0.1	%	10.5	10.6	1.28	0% - 50%
ES2045931-032	QZ02	EA055: Moisture Content	----	0.1	%	21.9	20.6	5.89	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3441302)									
ES2045824-001	Anonymous	EA055: Moisture Content	----	0.1	%	17.0	18.2	6.34	0% - 20%
ES2045931-006	FP04_0.2-0.3	EA055: Moisture Content	----	0.1	%	15.6	16.2	3.99	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3441303)									
ES2045931-015	FP12_0.3-0.4	EA055: Moisture Content	----	0.1	%	37.2	36.1	3.02	0% - 20%
ES2045962-006	Anonymous	EA055: Moisture Content	----	0.1	%	30.4	32.6	6.93	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3442168)									
ES2045373-024	Anonymous	EA055: Moisture Content	----	0.1	%	4.3	4.6	8.13	No Limit
ES2045373-039	Anonymous	EA055: Moisture Content	----	0.1	%	8.2	8.3	1.27	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3441008)									
ES2045767-010	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2045931-029	D02_0.4-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3441297)									
ES2045858-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2045931-009	FP07_0.2-0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3441299)									
ES2045931-019	FP15_0.2-0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.5	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3442162)									
ES2045373-022	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2045373-035	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3440886)									
ES2045931-026	D01_0.1-0.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2045931-036	D06_0.4-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3440891)									
ES2045931-001	FP01_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3440885)									
ES2045931-026	D01_0.1-0.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2045931-036	D06_0.4-0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3440885) - continued									
ES2045931-036	D06_0.4-0.5	EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3440892)									
ES2045931-001	FP01_0.2-0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3440892) - continued									
ES2045931-001	FP01_0.2-0.3	EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3440885)									
ES2045931-026	D01_0.1-0.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2045931-036	D06_0.4-0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3440892)									
ES2045931-001	FP01_0.2-0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3440889)									
ES2045931-011	FP09_0.1-0.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3440889) - continued									
ES2045931-001	FP01_0.2-0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3441930)									
ES2045931-021	QZ04	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3441930) - continued									
ES2045931-021	QZ04	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3440888)									
ES2045931-001	FP01_0.2-0.3	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2045931-011	FP09_0.1-0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3440890)									
ES2045931-011	FP09_0.1-0.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2045931-001	FP01_0.2-0.3	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3441929)									
ES2045931-021	QZ04	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	110	100	9.60	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3441996)									
ES2045373-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2045373-080	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3440888)									
ES2045931-001	FP01_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2045931-011	FP09_0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3440890)									
ES2045931-011	FP09_0.1-0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2045931-001	FP01_0.2-0.3	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3441929)									
ES2045931-021	QZ04	EP071: >C16 - C34 Fraction	----	100	mg/kg	130	140	9.93	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	130	110	10.3	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3441996)									
ES2045373-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2045373-080	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3440888)									
ES2045931-001	FP01_0.2-0.3	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP080: BTEXN (QC Lot: 3440888) - continued									
ES2045931-001	FP01_0.2-0.3	EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2045931-011	FP09_0.1-0.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 3441996)									
ES2045373-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2045373-080	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441007)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	100	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	99.7	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.4	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	95.9	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	92.2	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	77.1	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441296)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	110	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	92.5	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	97.9	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	100	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	97.4	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	91.7	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	75.5	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441298)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.7	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	82.0	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	89.4	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	90.4	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	84.2	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	80.3	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	67.3	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3442163)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.4	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	109	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	113	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	94.8	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	104	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	104	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	81.5	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441008)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	94.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441297)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441297) - continued								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	95.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441299)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	75.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3442162)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	108	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3440886)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	81.8	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3440891)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	84.2	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 3440885)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.8	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.6	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	93.0	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	98.2	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3440892)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	75.3	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.1	67.0	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3440892) - continued								
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	79.5	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	70.6	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	78.6	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.3	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.7	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	75.8	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	76.0	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.3	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	70.3	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.3	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	70.5	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3440885)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	71.5	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	74.7	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	78.7	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	89.5	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	93.1	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3440892)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.7	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	68.9	54.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3440892) - continued								
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	70.0	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.4	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	75.9	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	78.9	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.3	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	78.6	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	84.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	82.1	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	70.2	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	75.4	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3440889)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.4	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	86.4	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	86.7	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	89.1	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.4	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	95.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.2	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	93.8	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	86.3	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	86.2	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	81.9	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	88.5	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	79.1	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	85.2	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	83.7	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	84.3	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3441930)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.6	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	91.4	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	86.5	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	89.8	72.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3441930) - continued								
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.2	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	95.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.2	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	88.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	86.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	85.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	88.3	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	81.6	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	84.9	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	82.8	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	83.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3440888)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	85.3	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3440890)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	95.3	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	91.6	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	88.6	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3441929)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	116	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	94.3	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3441996)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	121	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3440888)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.6	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3440890)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	95.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	89.2	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	80.5	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3441929)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	108	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.1	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	82.1	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3441996)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	121	68.4	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 3440888)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	85.4	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	88.3	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	88.5	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.3	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	92.4	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	89.1	63.0	119
EP080: BTEXN (QCLot: 3441996)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.0	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.0	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.7	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.7	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	111	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441007)							
ES2045767-010	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	90.4	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.7	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	94.1	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	91.1	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	92.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	85.2	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441296)							
ES2045858-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	81.8	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	84.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.2	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	92.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	92.3	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	84.5	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441296) - continued							
ES2045858-001	Anonymous	EG005T: Zinc	7440-66-6	250 mg/kg	90.2	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3441298)							
ES2045931-019	FP15_0.2-0.3	EG005T: Arsenic	7440-38-2	50 mg/kg	98.4	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	81.7	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	86.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	92.7	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	82.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	82.4	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	121	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3442163)							
ES2045373-022	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	85.1	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.3	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	86.2	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	88.4	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	99.3	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.4	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.4	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441008)							
ES2045767-010	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	84.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441297)							
ES2045858-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	82.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3441299)							
ES2045931-019	FP15_0.2-0.3	EG035T: Mercury	7439-97-6	5 mg/kg	82.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3442162)							
ES2045373-022	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	80.6	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3440886)							
ES2045931-026	D01_0.1-0.2	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.4	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3440891)							
ES2045931-001	FP01_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	80.9	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3440885)							
ES2045931-026	D01_0.1-0.2	EP068: gamma-BHC	58-89-9	0.5 mg/kg	107	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	110	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	70.9	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	86.2	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	90.0	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	100	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3440892)							
ES2045931-001	FP01_0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	88.2	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	83.3	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	94.1	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	82.7	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	74.7	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	76.0	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3440885)							
ES2045931-026	D01_0.1-0.2	EP068: Diazinon	333-41-5	0.5 mg/kg	84.8	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	80.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	79.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	70.1	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	85.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3440892)							
ES2045931-001	FP01_0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	106	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	80.4	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	83.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	89.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	97.0	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3440889)							
ES2045931-001	FP01_0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	77.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	84.9	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3441930)							
ES2045931-021	QZ04	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	77.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	87.3	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3440888)							
ES2045931-001	FP01_0.2-0.3	EP080: C6 - C9 Fraction	----	32.5 mg/kg	84.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3440890)							
ES2045931-001	FP01_0.2-0.3	EP071: C10 - C14 Fraction	----	523 mg/kg	104	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	111	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	124	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3441929)							
ES2045931-021	QZ04	EP071: C10 - C14 Fraction	----	523 mg/kg	102	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	125	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3441996)							
ES2045373-011	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	114	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3440888)							
ES2045931-001	FP01_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	83.1	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3440890)							
ES2045931-001	FP01_0.2-0.3	EP071: >C10 - C16 Fraction	----	860 mg/kg	102	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	114	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	129	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3441929)							
ES2045931-021	QZ04	EP071: >C10 - C16 Fraction	----	860 mg/kg	108	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	118	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	120	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3441996)							
ES2045373-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	109	70.0	130
EP080: BTEXN (QCLot: 3440888)							
ES2045931-001	FP01_0.2-0.3	EP080: Benzene	71-43-2	2.5 mg/kg	78.7	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	80.8	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	82.1	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.7	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.5	70.0	130
EP080: BTEXN (QCLot: 3441996)							
ES2045373-011	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	86.3	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	80.0	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	83.3	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.0	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	77.1	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2045931**	Page	: 1 of 11
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 24-Dec-2020
Site	: ----	Issue Date	: 04-Jan-2021
Sampler	: ADAM SULLIVAN	No. of samples received	: 41
Order number	: ----	No. of samples analysed	: 41

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**----**	----	----	**24-Dec-2020**	06-Jan-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EA055)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**----**	----	----	**27-Dec-2020**	06-Jan-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
Soil Glass Jar - Unpreserved (EA055)								
QZ04,	FP17_0.4-0.5	**23-Dec-2020**	**----**	----	----	**29-Dec-2020**	06-Jan-2021	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)								
FP01_0.2-0.3,	FP01_1.5,	**23-Dec-2020**	**----**	----	----	**30-Dec-2020**	21-Jun-2021	✓
FP03_0.3-04,	FP10_0.3-0.4,							
FP11_0.3-0.4,	FP12_0.3-0.4,							
FP13_0.3-0.4,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP17_0.4-0.5							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**24-Dec-2020**	21-Jun-2021	✓	**30-Dec-2020**	21-Jun-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EG005T)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**27-Dec-2020**	21-Jun-2021	✓	**29-Dec-2020**	21-Jun-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
Soil Glass Jar - Unpreserved (EG005T)								
QZ04,	FP17_0.4-0.5	**23-Dec-2020**	**29-Dec-2020**	21-Jun-2021	✓	**29-Dec-2020**	21-Jun-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**24-Dec-2020**	20-Jan-2021	✓	**30-Dec-2020**	20-Jan-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EG035T)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**27-Dec-2020**	20-Jan-2021	✓	**30-Dec-2020**	20-Jan-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
Soil Glass Jar - Unpreserved (EG035T)								
QZ04,	FP17_0.4-0.5	**23-Dec-2020**	**29-Dec-2020**	20-Jan-2021	✓	**30-Dec-2020**	20-Jan-2021	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**24-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	02-Feb-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EP066)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP03_0.3-04,	FP06_0.3-0.4,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP15_0.2-0.3							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**24-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	02-Feb-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EP068)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP03_0.3-04,	FP06_0.3-0.4,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP15_0.2-0.3							
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
D01_0.1-0.2,	D01_0.4-0.5,	**23-Dec-2020**	**24-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	02-Feb-2021	✓
D02_0.1-0.2,	D02_0.4-0.5,							
D03_0.1-0.2,	D04_0.2-0.3,							
QZ02,	D04_0.4-0.5,							
D05_0.2-0.3,	D06_0.2-0.3,							
D06_0.4-0.5,	D07_0.1-0.2,							
D08_0.1-0.2								
Soil Glass Jar - Unpreserved (EP068)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP03_0.3-04,	FP06_0.3-0.4,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP15_0.2-0.3							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	QZ04, FP16_0.1-0.2,							
FP17_0.4-0.5								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
QZ04,	FP17_0.4-0.5	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	06-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
Soil Glass Jar - Unpreserved (EP080)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**31-Dec-2020**	06-Jan-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
QZ04,	FP17_0.4-0.5	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	06-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**30-Dec-2020**	07-Feb-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
Soil Glass Jar - Unpreserved (EP080)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**31-Dec-2020**	06-Jan-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
TRIP BLANK		**15-Dec-2020**	**29-Dec-2020**	29-Dec-2020	✓	**29-Dec-2020**	29-Dec-2020	✓
Soil Glass Jar - Unpreserved (EP080)								
QZ04,	FP17_0.4-0.5,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**29-Dec-2020**	06-Jan-2021	✓
TRIP SPIKE 5,	TSC5							
Soil Glass Jar - Unpreserved (EP080)								
FP01_0.2-0.3,	QZ01,	**23-Dec-2020**	**29-Dec-2020**	06-Jan-2021	✓	**31-Dec-2020**	06-Jan-2021	✓
FP01_1.5,	FP02_0.3-0.4,							
FP03_0.3-04,	FP04_0.2-0.3,							
FP05_0.5-0.6,	FP06_0.3-0.4,							
FP07_0.2-0.3,	FP08_0.1-0.2,							
FP09_0.1-0.2,	FP09_0.8-0.9,							
FP10_0.3-0.4,	FP11_0.3-0.4,							
FP12_0.3-0.4,	FP13_0.3-0.4,							
QZ03,	FP14_0.2-0.3,							
FP15_0.2-0.3,	FP16_0.1-0.2							

Matrix: **SOLID**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **SOLID**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
FP05_F01, FP06_F02, FP07_F03	**23-Dec-2020**	**----**	----	----	**30-Dec-2020**	21-Jun-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	8	77	10.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	7	62	11.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	7	60	11.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	62	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	60	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	62	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	60	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	62	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	60	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2045931**

Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	: Loren.Schiavon@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_539	Page	: 1 of 3
Order number	: ----	Quote number	: ES2015SULENV0034 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ADAM SULLIVAN		

Dates

Date Samples Received	: 24-Dec-2020 11:24	Issue Date	: 24-Dec-2020
Client Requested Due Date	: 04-Jan-2021	Scheduled Reporting Date	: **04-Jan-2021**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.6'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 41 / 41

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200G Asbestos Identification in Soils -	SOIL - EP080 BTEXN	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-13 OC/OP/PCB	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2045931-001	23-Dec-2020 00:00	FP01_0.2-0.3	✓	✓			✓	✓
ES2045931-002	23-Dec-2020 00:00	QZ01	✓				✓	✓
ES2045931-003	23-Dec-2020 00:00	FP01_1.5	✓	✓				✓
ES2045931-004	23-Dec-2020 00:00	FP02_0.3-0.4	✓					✓
ES2045931-005	23-Dec-2020 00:00	FP03_0.3-04	✓	✓			✓	✓
ES2045931-006	23-Dec-2020 00:00	FP04_0.2-0.3	✓					✓
ES2045931-007	23-Dec-2020 00:00	FP05_0.5-0.6	✓					✓
ES2045931-008	23-Dec-2020 00:00	FP06_0.3-0.4	✓				✓	✓
ES2045931-009	23-Dec-2020 00:00	FP07_0.2-0.3	✓					✓
ES2045931-010	23-Dec-2020 00:00	FP08_0.1-0.2	✓					✓
ES2045931-011	23-Dec-2020 00:00	FP09_0.1-0.2	✓				✓	✓
ES2045931-012	23-Dec-2020 00:00	FP09_0.8-0.9	✓				✓	✓
ES2045931-013	23-Dec-2020 00:00	FP10_0.3-0.4	✓	✓			✓	✓
ES2045931-014	23-Dec-2020 00:00	FP11_0.3-0.4	✓	✓				✓
ES2045931-015	23-Dec-2020 00:00	FP12_0.3-0.4	✓	✓				✓
ES2045931-016	23-Dec-2020 00:00	FP13_0.3-0.4	✓	✓			✓	✓
ES2045931-017	23-Dec-2020 00:00	QZ03	✓				✓	✓
ES2045931-018	23-Dec-2020 00:00	FP14_0.2-0.3	✓	✓				✓
ES2045931-019	23-Dec-2020 00:00	FP15_0.2-0.3	✓	✓			✓	✓
ES2045931-020	23-Dec-2020 00:00	FP16_0.1-0.2	✓					✓
ES2045931-021	23-Dec-2020 00:00	QZ04	✓					✓
ES2045931-022	23-Dec-2020 00:00	FP17_0.4-0.5	✓	✓				✓
ES2045931-026	23-Dec-2020 00:00	D01_0.1-0.2	✓			✓	✓	
ES2045931-027	23-Dec-2020 00:00	D01_0.4-0.5	✓			✓	✓	
ES2045931-028	23-Dec-2020 00:00	D02_0.1-0.2	✓			✓	✓	
ES2045931-029	23-Dec-2020 00:00	D02_0.4-0.5	✓			✓	✓	
ES2045931-030	23-Dec-2020 00:00	D03_0.1-0.2	✓			✓	✓	
ES2045931-031	23-Dec-2020 00:00	D04_0.2-0.3	✓			✓	✓	
ES2045931-032	23-Dec-2020 00:00	QZ02	✓			✓	✓	
ES2045931-033	23-Dec-2020 00:00	D04_0.4-0.5	✓			✓	✓	
ES2045931-034	23-Dec-2020 00:00	D05_0.2-0.3	✓			✓	✓	
ES2045931-035	23-Dec-2020 00:00	D06_0.2-0.3	✓			✓	✓	
ES2045931-036	23-Dec-2020 00:00	D06_0.4-0.5	✓			✓	✓	
ES2045931-037	23-Dec-2020 00:00	D07_0.1-0.2	✓			✓	✓	
ES2045931-038	23-Dec-2020 00:00	D08_0.1-0.2	✓			✓	✓	

			SOIL - EA055-103 Moisture Content	SOIL - EA200G Asbestos Identification in Soils -	SOIL - EP080 BTEXN	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-13 OC/OP/PCB	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2045931-039	15-Dec-2020 00:00	TRIP BLANK			✓			
ES2045931-040	23-Dec-2020 00:00	TRIP SPIKE 5			✓			
ES2045931-041	23-Dec-2020 00:00	TSC5			✓			

Matrix: **SOLID**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
ES2045931-023	23-Dec-2020 00:00	FP05_F01	✓
ES2045931-024	23-Dec-2020 00:00	FP06_F02	✓
ES2045931-025	23-Dec-2020 00:00	FP07_F03	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ADAM SULLIVAN

- *AU Certificate of Analysis - NATA (COA)	Email	adam@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	adam@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	adam@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	adam@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	adam@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	adam@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	adam@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	adam@sullivan-es.com.au

SEAN

- *AU Certificate of Analysis - NATA (COA)	Email	sean@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sean@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sean@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sean@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	sean@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	sean@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	sean@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	sean@sullivan-es.com.au

Environmental Division
Sydney
Work Order Reference
ES2045931

Telephone : + 61-2-8784 8555

Sheet 1 of 4

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences
PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264
Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

DATE: 24/12/20

TO: ALS Environmental Smithfield

Project No: SES_539
Project Manager: A.Sullivan
Agreement No: EN/222/19

Sampler(s): Adam Sullivan
Signature(s):
Checked:

Custody seal intact? YES NO
Sample cold? YES NO

Released by: Date: 24/12/20 Time: 12pm

Received by: Date: 24/12/20 Time: 11:30am

Type, Preservative Analysis Identification

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	Asbestos ID	BTEXN	HCLD	S-2
1	23/12/20		Soil	FP01_0.2-0.3	+ Bag	2	X	X	X			
2				QZ01		1	X	X				
3				FP01_1.5	+ Bag	2	X		X			
4				FP02_0.3-0.4		1	X					
5				FP03_0.3-0.4	+ Bag	2	X	X	X			
6				FP04_0.2-0.3		1	X					
7				FP05_0.5-0.6		1	X					
8				FP06_0.3-0.4		1	X	X				
9				FP07_0.2-0.3		1	X					
10				FP08_0.1-0.2		1	X					
11				FP09_0.1-0.2		1	X	X				
12				FP09_0.8-0.9		1	X	X				
					TOTAL	15	12	6	3	0	0	0

Remarks:

Size
Type*
Preservative Code
Analytes

Tick required analytes

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 Day TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

FROM: Sullivan Environmental Sciences
PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264

DATE: 24/12/20

SULLIVAN environmental sciences

TO: ALS Environmental Smithfield

Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

Job Code:

Due Date:

Project No: SES 539
Project Manager: A.Sullivan
Agreement No: EN/222/19

Sampler(s): Adam Sullivan
Signature(s):
Checked:

Custody seal intact? YES / NO

Sample cold? YES / NO

Released by:
Date: 24/12/20 Time: 12pm

Received by:
Date: 24/12/20 Time: 11:30am

Container Size, Type, Preservative and Analysis

Container Identification

Size							
Type*							
Preservative Code							
Analytes	S-26	S-13	Asbestos ID	BTEXN	Hold	S-2	

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	Tick required analytes						
13	23/12/20		SOIL	FP10_0.3-0.4	+ Bag	2	X	X	X				
14				FP11_0.3-0.4	+ Bag	2	X		X				
15				FP12_0.3-0.4	+ Bag	2	X		X				
16				FP13_0.3-0.4	+ Bag	2	X	X	X				
17				QZ03		1	X	X					
18				FP14_0.2-0.3	+ Bag	2	X		X				
19				FP15_0.2-0.3	+ Bag	2	X	X	X				
20				FP16_0.1-0.2		1	X						
21				QZ04		1	X						
22				FP17_0.4-0.5	+ Bag	2	X		X				
23			Bulk	FP05_F01		1			X				
24			"	FP06_F02		1			X				
					TOTAL	19	10	4	9	0	0	0	

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; ~~VS = Sulfuric~~ Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 Day TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences

DATE: 24/12/20

TO: ALS Environmental Smithfield

PO Box 5248
Turramurra NSW 2074

Ph: 0400 500 264

Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

Project No: SES_539

Project Manager: A.Sullivan

Agreement No: EN/222/19

Sampler(s): Adam Sullivan

Signature(s):

Checked:

Custody seal intact? YES / NO

Sample cold? YES / NO

Released by:

Date: 24/12/20 Time: 12pm

Received by:

Date: 24/12/20 Time: 11:30

Container Size, Type, Preservative and Analysis

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	Asbestos ID	BTEXN	HOLD	S-2
Size												
Type*												
Preservative Code												
Analytes												
25	23/12/20		Bulk	FP07_F03		1			X			
26			SOIL	D01_0.1-0.2				X				X
27				D01_0.4-0.5				X				X
28				D02_0.1-0.2				X				X
29				D02_0.4-0.5				X				X
30				D03_0.1-0.2				X				X
31				D04_0.2-0.3				X				X
32				QZ02				X				X
33				D04_0.4-0.5				X				X
34				D05_0.2-0.3				X				X
35				D06_0.2-0.3				X				X
36				D06_0.4-0.5				X				X
					TOTAL	12	0	11	1	0	0	11

Tick required analytes

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 Day TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences

DATE: 24/12/20

TO: ALS Environmental Smithfield

PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264
Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

Project No: SES_539

Project Manager: A.Sullivan

Agreement No: EN/222/19

Sampler(s): Adam Sullivan

Signature(s):

Checked:

Custody seal intact? YES / NO

Sample cold? YES / NO

Released by:

Date: 24/12/20 Time: 12pm

Received by:

Date: 24/12/20 Time: 11:30am

Container Size, Type, Preservative and Analysis

Container Identification

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	Asbestos ID	BTEXN	HCLD	S-2
Size												
Type*												
Preservative Code												
Analytes												
38	23/12/20		soil	DO7-0.1-0.2		1		X				X
38	↓		↓	DO8_0.1-0.2		1		X				X
39				Trip Blank		1				X		
40				Trip Spike-5		1				X		
41				TSC								
TOTAL						4	0	2	0	2	0	2

Tick required analytes

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 Day TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2045293**	Page	: 1 of 25
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 18-Dec-2020 17:49
Order number	: ----	Date Analysis Commenced	: 19-Dec-2020
C-O-C number	: ----	Issue Date	: 22-Dec-2020 21:23
Sampler	: ADAM SULLIVAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 27		
No. of samples analysed	: 27		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP068: Positive results have been confirmed by re-extraction and re-analysis.
- EP071: Results of sample DUPB, DUPC and KP15_0.1-0.2 have been confirmed by re-extraction and re-analysis.
- EG035: Positive Hg result ES2045293 #13 has been confirmed by reanalysis.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP01_0.5-0.6	DUPA	KP02_0.2-0.3	KP03_0.7-0.8	KP04_0.4-035
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-001	ES2045293-002	ES2045293-003	ES2045293-004	ES2045293-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.8	6.7	5.9	6.6	16.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Sample weight (dry)	----	0.01	g	48.9	----	63.4	69.9	30.4
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	No	No	No
Organic Fibre	----	0.1	g/kg	No	----	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	14	16	10	8
Copper	7440-50-8	5	mg/kg	23	17	9	17	11
Lead	7439-92-1	5	mg/kg	36	34	11	11	6
Nickel	7440-02-0	2	mg/kg	12	12	19	15	10
Zinc	7440-66-6	5	mg/kg	122	117	27	23	13
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP01_0.5-0.6	DUPA	KP02_0.2-0.3	KP03_0.7-0.8	KP04_0.4-035
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-001	ES2045293-002	ES2045293-003	ES2045293-004	ES2045293-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP01_0.5-0.6	DUPA	KP02_0.2-0.3	KP03_0.7-0.8	KP04_0.4-035
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-001	ES2045293-002	ES2045293-003	ES2045293-004	ES2045293-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP01_0.5-0.6	DUPA	KP02_0.2-0.3	KP03_0.7-0.8	KP04_0.4-035
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-001	ES2045293-002	ES2045293-003	ES2045293-004	ES2045293-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	93.1	----	----	101	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	105	----	----	86.0	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	106	----	----	84.1	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	83.0	77.2	90.4	85.3	82.5
2-Chlorophenol-D4	93951-73-6	0.5	%	78.2	72.2	86.9	81.5	80.2
2.4.6-Tribromophenol	118-79-6	0.5	%	59.5	55.0	75.1	61.6	66.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	92.7	87.3	95.8	96.1	92.4
Anthracene-d10	1719-06-8	0.5	%	90.0	84.1	94.2	96.4	93.0
4-Terphenyl-d14	1718-51-0	0.5	%	84.0	78.5	85.8	85.6	83.6
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	112	89.0	84.9	85.7	94.9
Toluene-D8	2037-26-5	0.2	%	105	82.9	85.6	86.7	87.9
4-Bromofluorobenzene	460-00-4	0.2	%	102	90.0	96.1	84.4	73.0

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP05_0.5-0.6	KP06_0.3-0.4	KP06_0.9-1.0	KP07_0.5-0.6	KP08_0.2-0.3
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-006	ES2045293-007	ES2045293-008	ES2045293-009	ES2045293-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	3.2	1.1	14.7	3.1	6.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	No	No
Asbestos Type	1332-21-4	-	--	-	-	----	-	-
Sample weight (dry)	----	0.01	g	52.3	52.6	----	55.6	32.8
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	----	No	No
Organic Fibre	----	0.1	g/kg	No	No	----	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	15	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	5	<2	46	4	10
Copper	7440-50-8	5	mg/kg	10	<5	34	6	12
Lead	7439-92-1	5	mg/kg	25	<5	87	15	37
Nickel	7440-02-0	2	mg/kg	3	<2	34	2	8
Zinc	7440-66-6	5	mg/kg	83	20	130	36	38
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP05_0.5-0.6	KP06_0.3-0.4	KP06_0.9-1.0	KP07_0.5-0.6	KP08_0.2-0.3
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-006	ES2045293-007	ES2045293-008	ES2045293-009	ES2045293-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP05_0.5-0.6	KP06_0.3-0.4	KP06_0.9-1.0	KP07_0.5-0.6	KP08_0.2-0.3
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-006	ES2045293-007	ES2045293-008	ES2045293-009	ES2045293-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.8**
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.8**
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.5**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**2.1**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP05_0.5-0.6	KP06_0.3-0.4	KP06_0.9-1.0	KP07_0.5-0.6	KP08_0.2-0.3
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-006	ES2045293-007	ES2045293-008	ES2045293-009	ES2045293-010
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	112	----	----	93.6	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	98.4	----	----	82.6	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	97.8	----	----	82.0	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	92.2	91.0	76.4	89.9	92.9
2-Chlorophenol-D4	93951-73-6	0.5	%	89.3	88.6	71.4	87.2	89.8
2.4.6-Tribromophenol	118-79-6	0.5	%	75.7	75.0	61.6	74.8	76.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	96.2	95.8	77.6	94.8	97.2
Anthracene-d10	1719-06-8	0.5	%	98.1	97.0	79.0	96.4	99.1
4-Terphenyl-d14	1718-51-0	0.5	%	86.1	86.6	70.2	85.0	87.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	87.8	117	75.1	96.2	92.6
Toluene-D8	2037-26-5	0.2	%	90.0	105	82.1	87.1	78.2
4-Bromofluorobenzene	460-00-4	0.2	%	101	86.8	97.6	106	94.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP09_0.3-0.4	KP10_0.2-0.3	DUPB	KP11_0.1-0.2	KP12_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-011	ES2045293-012	ES2045293-013	ES2045293-014	ES2045293-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	4.7	4.8	5.4	7.8	7.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	----	No
Asbestos Type	1332-21-4	-	--	-	-	----	----	-
Sample weight (dry)	----	0.01	g	72.6	76.6	----	----	54.2
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	----	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	----	----	No
Organic Fibre	----	0.1	g/kg	No	No	----	----	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	13	<5	<5	5	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	12	14	10	26
Copper	7440-50-8	5	mg/kg	17	18	17	6	21
Lead	7439-92-1	5	mg/kg	34	32	28	14	23
Nickel	7440-02-0	2	mg/kg	6	9	10	6	25
Zinc	7440-66-6	5	mg/kg	61	68	64	17	51
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	7.4	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	0.23	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	0.13	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	0.10	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP09_0.3-0.4	KP10_0.2-0.3	DUPB	KP11_0.1-0.2	KP12_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-011	ES2045293-012	ES2045293-013	ES2045293-014	ES2045293-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP09_0.3-0.4	KP10_0.2-0.3	DUPB	KP11_0.1-0.2	KP12_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-011	ES2045293-012	ES2045293-013	ES2045293-014	ES2045293-015
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	1.3	<0.5	<0.5	<0.5	3.2
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	0.9
Fluoranthene	206-44-0	0.5	mg/kg	2.2	1.0	0.8	<0.5	3.9
Pyrene	129-00-0	0.5	mg/kg	2.1	1.1	0.9	<0.5	3.3
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.9	0.5	<0.5	<0.5	1.6
Chrysene	218-01-9	0.5	mg/kg	0.8	0.5	<0.5	<0.5	1.4
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.1	0.7	0.6	<0.5	1.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	0.6
Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.0	0.6	<0.5	<0.5	1.3
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.5	<0.5	<0.5	<0.5	0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.7	<0.5	<0.5	<0.5	0.6
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	10.6	4.4	2.3	<0.5	18.8
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.3	0.7	<0.5	<0.5	1.7
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.5	1.0	0.6	0.6	2.0
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.8	1.3	1.2	1.2	2.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	110
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	210
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	320
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	100	<100	260
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	170
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	100	<50	430

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP09_0.3-0.4	KP10_0.2-0.3	DUPB	KP11_0.1-0.2	KP12_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-011	ES2045293-012	ES2045293-013	ES2045293-014	ES2045293-015
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	95.4	----	----	----	112
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	86.1	----	----	----	95.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	83.8	----	----	----	91.3
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	87.5	93.9	88.1	82.2	91.8
2-Chlorophenol-D4	93951-73-6	0.5	%	84.2	90.0	84.9	77.8	90.0
2.4.6-Tribromophenol	118-79-6	0.5	%	73.7	78.7	75.2	68.7	77.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	91.9	96.4	90.9	82.3	98.5
Anthracene-d10	1719-06-8	0.5	%	92.3	99.9	93.8	87.2	98.6
4-Terphenyl-d14	1718-51-0	0.5	%	82.5	87.1	82.8	74.8	89.1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	89.8	93.8	78.3	81.5	121
Toluene-D8	2037-26-5	0.2	%	92.8	83.1	84.6	82.8	111
4-Bromofluorobenzene	460-00-4	0.2	%	104	76.0	94.8	87.9	108

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP14_0.1-0.2	KP15_0.1-0.2	KP16_0.2-0.3	KP17_0.1-0.2	KP18_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-016	ES2045293-017	ES2045293-018	ES2045293-019	ES2045293-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.8	10.9	14.7	6.3	7.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	40.3	69.3	48.8	51.2	67.8
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	Yes	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	<5	7	5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	17	33	36	15	19
Copper	7440-50-8	5	mg/kg	8	525	22	18	18
Lead	7439-92-1	5	mg/kg	16	117	96	49	37
Nickel	7440-02-0	2	mg/kg	6	30	29	14	16
Zinc	7440-66-6	5	mg/kg	18	229	70	69	43
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP14_0.1-0.2	KP15_0.1-0.2	KP16_0.2-0.3	KP17_0.1-0.2	KP18_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-016	ES2045293-017	ES2045293-018	ES2045293-019	ES2045293-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	----	**0.44**	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	**0.44**	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP14_0.1-0.2	KP15_0.1-0.2	KP16_0.2-0.3	KP17_0.1-0.2	KP18_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-016	ES2045293-017	ES2045293-018	ES2045293-019	ES2045293-020
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	**1.6**	**0.7**	**1.2**
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.5**
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	**2.2**	**1.8**	**3.6**
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	**2.2**	**1.8**	**3.9**
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	**1.0**	**0.8**	**1.8**
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	**0.8**	**0.8**	**1.6**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	**1.0**	**1.2**	**2.2**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.8**
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	**0.8**	**1.0**	**2.0**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	**0.5**	**0.9**
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	**0.7**	**1.2**
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	**9.6**	**9.3**	**19.7**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	**1.0**	**1.3**	**2.6**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**1.3**	**1.5**	**2.8**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.6**	**1.8**	**3.1**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	**1190**	<100	**100**	<100
C29 - C36 Fraction	----	100	mg/kg	<100	**880**	<100	**150**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	**2070**	<50	**250**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	**1770**	<100	**190**	**150**
>C34 - C40 Fraction	----	100	mg/kg	<100	**470**	<100	**150**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	**2240**	<50	**340**	**150**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP14_0.1-0.2	KP15_0.1-0.2	KP16_0.2-0.3	KP17_0.1-0.2	KP18_0.1-0.2
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-016	ES2045293-017	ES2045293-018	ES2045293-019	ES2045293-020
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	117	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	122	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	112	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	93.2	89.9	91.9	90.3	90.0
2-Chlorophenol-D4	93951-73-6	0.5	%	89.7	85.5	87.8	86.0	86.1
2.4.6-Tribromophenol	118-79-6	0.5	%	79.9	73.7	82.3	82.3	78.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	96.1	95.1	94.6	91.3	92.2
Anthracene-d10	1719-06-8	0.5	%	99.6	94.9	97.5	94.6	94.9
4-Terphenyl-d14	1718-51-0	0.5	%	86.6	88.4	85.8	82.9	84.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	110	114	78.3	121	103
Toluene-D8	2037-26-5	0.2	%	107	103	78.4	111	96.1
4-Bromofluorobenzene	460-00-4	0.2	%	105	95.1	92.0	108	80.9

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP19_0.1-0.2	KP20_0.1-0.2	DUPC	TRIP BLANK	TRIP SPIKE 4
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	15-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-021	ES2045293-022	ES2045293-023	ES2045293-025	ES2045293-026
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.2	7.8	6.7	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	----	----
Asbestos Type	1332-21-4	-	--	-	-	----	----	----
Sample weight (dry)	----	0.01	g	68.3	61.3	----	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	----	----	----
Organic Fibre	----	0.1	g/kg	No	No	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	6	5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	28	24	30	----	----
Copper	7440-50-8	5	mg/kg	21	16	21	----	----
Lead	7439-92-1	5	mg/kg	33	28	29	----	----
Nickel	7440-02-0	2	mg/kg	23	14	23	----	----
Zinc	7440-66-6	5	mg/kg	53	47	48	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP19_0.1-0.2	KP20_0.1-0.2	DUPC	TRIP BLANK	TRIP SPIKE 4
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	15-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-021	ES2045293-022	ES2045293-023	ES2045293-025	ES2045293-026
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP19_0.1-0.2	KP20_0.1-0.2	DUPC	TRIP BLANK	TRIP SPIKE 4
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	15-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-021	ES2045293-022	ES2045293-023	ES2045293-025	ES2045293-026
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	1.1	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	0.7	1.2	2.8	----	----
Pyrene	129-00-0	0.5	mg/kg	0.7	1.3	2.9	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	0.6	1.3	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	0.5	1.1	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	0.8	1.6	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.6	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	0.6	1.4	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.7	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.8	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	1.4	5.0	14.3	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	0.7	1.8	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	1.0	2.1	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.4	2.3	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	110	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	110	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	KP19_0.1-0.2	KP20_0.1-0.2	DUPC	TRIP BLANK	TRIP SPIKE 4
			Sampling date / time	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	17-Dec-2020 00:00	15-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	ES2045293-021	ES2045293-022	ES2045293-023	ES2045293-025	ES2045293-026
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	**0.3**
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**16.7**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**2.4**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**12.5**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**5.1**
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	**37.0**
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**17.6**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**113**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**95.9**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**92.1**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**83.1**	**81.7**	**87.2**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**79.1**	**80.9**	**82.7**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**64.2**	**71.1**	**72.2**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**99.2**	**95.4**	**96.0**	----	----
Anthracene-d10	1719-06-8	0.5	%	**95.4**	**92.9**	**93.2**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**85.2**	**82.5**	**82.5**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**104**	**108**	**106**	**113**	**118**
Toluene-D8	2037-26-5	0.2	%	**100**	**106**	**101**	**103**	**115**
4-Bromofluorobenzene	460-00-4	0.2	%	**107**	**112**	**103**	**109**	**121**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TSC 4	----	----	----	----
			Sampling date / time	15-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2045293-027	--------	--------	--------	--------
				Result	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	**0.3**	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	**16.6**	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	**2.4**	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	**12.5**	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	**5.1**	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	**36.9**	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	**17.6**	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**110**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**110**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**114**	----	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)			Sample ID	FOA	----	----	----	----
			Sampling date / time	17-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2045293-024	--------	--------	--------	--------
				Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**Yes**	----	----	----	----
Asbestos Type	1332-21-4	-	--	**Ch + Am**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**N/A**	----	----	----	----
Sample weight (dry)	----	0.01	g	**4.50**	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	----	----	----	----
Organic Fibre	----	0.1	g/kg	**No**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	KP01_0.5-0.6 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP02_0.2-0.3 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP03_0.7-0.8 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP04_0.4-035 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP05_0.5-0.6 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP06_0.3-0.4 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP07_0.5-0.6 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP08_0.2-0.3 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP09_0.3-0.4 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP10_0.2-0.3 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP12_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP14_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP15_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP16_0.2-0.3 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP17_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP18_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP19_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.
EA200: Description	KP20_0.1-0.2 - 17-Dec-2020 00:00	Mid brown soil.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	FOA - 17-Dec-2020 00:00	One piece of asbestos cement sheeting approximately 50x20x10mm.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: **ES2045293**	Page	: 1 of 16
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 18-Dec-2020
Order number	: ----	Date Analysis Commenced	: 19-Dec-2020
C-O-C number	: ----	Issue Date	: 22-Dec-2020
Sampler	: ADAM SULLIVAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 27		
No. of samples analysed	: 27		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3431822)									
ES2044980-001	Anonymous	EG005T: Zinc	7440-66-6	5	mg/kg	21400	23500	9.47	0% - 20%
ES2044980-003	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	4020	3390	17.1	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	43000	36300	17.0	0% - 20%
ES2044980-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	17	8.67	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	42	50	17.5	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	2650	3040	13.7	0% - 20%
ES2044980-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	7	7	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	51	51	0.00	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	4	<2	73.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	1660	1590	4.40	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3431824)									
ES2045293-017	KP15_0.1-0.2	EG005T: Nickel	7440-02-0	2	mg/kg	30	33	9.71	0% - 50%
		EG005T: Copper	7440-50-8	5	mg/kg	525	581	10.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	117	132	11.4	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	229	255	10.8	0% - 20%
ES2045293-007	KP06_0.3-0.4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	20	20	0.00	No Limit
ES2045293-017	KP15_0.1-0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3431824) - continued									
ES2045293-017	KP15_0.1-0.2	EG005T: Chromium	7440-47-3	2	mg/kg	33	21	42.4	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3431826)									
ES2044943-001	Anonymous	EA055: Moisture Content	----	0.1	%	57.6	57.4	0.505	0% - 20%
ES2044980-003	Anonymous	EA055: Moisture Content	----	0.1	%	7.9	8.0	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3431827)									
ES2045293-006	KP05_0.5-0.6	EA055: Moisture Content	----	0.1	%	3.2	2.9	6.90	No Limit
ES2045293-017	KP15_0.1-0.2	EA055: Moisture Content	----	0.1	%	10.9	10.2	6.54	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3431823)									
ES2044980-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2044980-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3431825)									
ES2045293-007	KP06_0.3-0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2045293-017	KP15_0.1-0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3431501)									
ES2045293-001	KP01_0.5-0.6	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3431506)									
ES2045293-021	KP19_0.1-0.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3431502)									
ES2045293-001	KP01_0.5-0.6	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3431502) - continued									
ES2045293-001	KP01_0.5-0.6	EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3431505)									
ES2045293-021	KP19_0.1-0.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3431502)									
ES2045293-001	KP01_0.5-0.6	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3431502) - continued									
ES2045293-001	KP01_0.5-0.6	EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3431505)									
ES2045293-021	KP19_0.1-0.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3431499)									
ES2045293-011	KP09_0.3-0.4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.3	1.1	10.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	2.2	2.1	6.72	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.1	2.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.9	0.9	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	0.8	0.8	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.1	1.2	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.0	1.1	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.5	0.6	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3431499) - continued									
ES2045293-011	KP09_0.3-0.4	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.7	0.7	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	10.6	10.5	0.948	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.3	1.4	9.06	No Limit
ES2045293-001	KP01_0.5-0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3431504)									
ES2045293-021	KP19_0.1-0.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.7	0.6	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.7	0.6	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3431504) - continued									
ES2045293-021	KP19_0.1-0.2	EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	1.4	1.2	15.4	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3431500)									
ES2045293-011	KP09_0.3-0.4	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2045293-001	KP01_0.5-0.6	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3431503)									
ES2045293-021	KP19_0.1-0.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3431513)									
ES2045293-001	KP01_0.5-0.6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2045293-011	KP09_0.3-0.4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3431514)									
ES2045293-021	KP19_0.1-0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3431500)									
ES2045293-011	KP09_0.3-0.4	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2045293-001	KP01_0.5-0.6	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3431503)									
ES2045293-021	KP19_0.1-0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3431513)									
ES2045293-001	KP01_0.5-0.6	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2045293-011	KP09_0.3-0.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3431514)									
ES2045293-021	KP19_0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3431513)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3431513) - continued									
ES2045293-001	KP01_0.5-0.6	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2045293-011	KP09_0.3-0.4	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 3431514)									
ES2045293-021	KP19_0.1-0.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3431822)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	89.0	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	106	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	101	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	92.9	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	85.1	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	90.2	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	70.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3431824)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	92.6	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	104	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	107	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.2	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	91.2	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	96.9	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	75.0	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3431823)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	124	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3431825)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	99.1	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3431501)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	89.4	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3431506)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	117	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431502)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	63.0	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431502) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	101	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	102	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431505)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	98.0	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	95.7	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3431502)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	102	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	67.0	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3431502) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	98.4	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	88.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3431505)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	99.7	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	94.8	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3431499)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.9	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.1	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	87.4	73.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3431499) - continued								
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	91.1	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.9	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	99.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.7	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	96.4	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	88.0	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	89.4	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	85.2	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	88.9	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	88.0	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	88.9	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	87.9	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3431504)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.3	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	98.9	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	95.1	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	99.2	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	101	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	102	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	103	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	102	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	90.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	91.9	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	91.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	92.0	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.6	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	94.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	94.6	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	92.3	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431500)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	104	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	102	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	94.5	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431503)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	102	75.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431503) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	98.7	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	94.6	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431513)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	105	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431514)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.0	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431500)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	102	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	101	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	79.7	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431503)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	98.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.2	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	87.0	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431513)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	107	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431514)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	99.2	68.4	128
EP080: BTEXN (QCLot: 3431513)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	95.7	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.6	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.8	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.8	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.7	63.0	119
EP080: BTEXN (QCLot: 3431514)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	101	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.8	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	102	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	100	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	103	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	93.2	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3431822)							
ES2044980-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	87.4	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	99.0	68.0	132
		EG005T: Lead	7439-92-1	250 mg/kg	# Not Determined	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	88.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# Not Determined	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3431824)							
ES2045293-007	KP06_0.3-0.4	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	105	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	105	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	105	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3431823)							
ES2044980-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3431825)							
ES2045293-007	KP06_0.3-0.4	EG035T: Mercury	7439-97-6	5 mg/kg	88.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3431501)							
ES2045293-001	KP01_0.5-0.6	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	103	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3431506)							
ES2045293-021	KP19_0.1-0.2	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	97.5	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431502)							
ES2045293-001	KP01_0.5-0.6	EP068: gamma-BHC	58-89-9	0.5 mg/kg	86.1	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	74.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	84.2	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	103	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	90.5	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	99.2	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431505)							
ES2045293-021	KP19_0.1-0.2	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.9	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	90.7	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	103	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3431505) - continued							
ES2045293-021	KP19_0.1-0.2	EP068: Dieldrin	60-57-1	0.5 mg/kg	111	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	89.2	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	85.8	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3431502)							
ES2045293-001	KP01_0.5-0.6	EP068: Diazinon	333-41-5	0.5 mg/kg	114	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	90.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	87.5	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	79.7	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.3	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3431505)							
ES2045293-021	KP19_0.1-0.2	EP068: Diazinon	333-41-5	0.5 mg/kg	111	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	103	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	96.7	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	96.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	96.0	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3431499)							
ES2045293-001	KP01_0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	76.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	74.6	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3431504)							
ES2045293-021	KP19_0.1-0.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	92.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431500)							
ES2045293-001	KP01_0.5-0.6	EP071: C10 - C14 Fraction	----	523 mg/kg	86.5	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	113	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	131	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431503)							
ES2045293-021	KP19_0.1-0.2	EP071: C10 - C14 Fraction	----	523 mg/kg	94.2	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	114	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	124	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431513)							
ES2045293-001	KP01_0.5-0.6	EP080: C6 - C9 Fraction	----	32.5 mg/kg	101	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3431514)							
ES2045293-021	KP19_0.1-0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431500)							
ES2045293-001	KP01_0.5-0.6	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.8	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	121	53.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431500) - continued							
ES2045293-001	KP01_0.5-0.6	EP071: >C34 - C40 Fraction	----	1058 mg/kg	128	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431503)							
ES2045293-021	KP19_0.1-0.2	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.0	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	120	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	122	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431513)							
ES2045293-001	KP01_0.5-0.6	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.9	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3431514)							
ES2045293-021	KP19_0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	98.0	70.0	130
EP080: BTEXN (QCLot: 3431513)							
ES2045293-001	KP01_0.5-0.6	EP080: Benzene	71-43-2	2.5 mg/kg	81.5	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	88.5	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.3	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	83.5	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.4	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	106	70.0	130
EP080: BTEXN (QCLot: 3431514)							
ES2045293-021	KP19_0.1-0.2	EP080: Benzene	71-43-2	2.5 mg/kg	89.2	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	90.2	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	91.9	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.3	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.0	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2045293**	Page	: 1 of 10
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Telephone	: +61 2 8784 8555
Project	: SES_539	Date Samples Received	: 18-Dec-2020
Site	: ----	Issue Date	: 22-Dec-2020
Sampler	: ADAM SULLIVAN	No. of samples received	: 27
Order number	: ----	No. of samples analysed	: 27

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	ES2044980--001	Anonymous	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	ES2044980--001	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**----**	----	----	**19-Dec-2020**	31-Dec-2020	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)								
KP01_0.5-0.6,	KP02_0.2-0.3,	**17-Dec-2020**	**----**	----	----	**22-Dec-2020**	15-Jun-2021	✓
KP03_0.7-0.8,	KP04_0.4-035,							
KP05_0.5-0.6,	KP06_0.3-0.4,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2							
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	15-Jun-2021	✓	**21-Dec-2020**	15-Jun-2021	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	14-Jan-2021	✓	**22-Dec-2020**	14-Jan-2021	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
KP01_0.5-0.6,	KP03_0.7-0.8,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	28-Jan-2021	✓
KP05_0.5-0.6,	KP07_0.5-0.6,							
KP09_0.3-0.4,	KP12_0.1-0.2,							
KP15_0.1-0.2,	KP19_0.1-0.2							
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
KP01_0.5-0.6,	KP03_0.7-0.8,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	28-Jan-2021	✓
KP05_0.5-0.6,	KP07_0.5-0.6,							
KP09_0.3-0.4,	KP12_0.1-0.2,							
KP15_0.1-0.2,	KP19_0.1-0.2							
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
KP01_0.5-0.6,	KP03_0.7-0.8,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	28-Jan-2021	✓
KP05_0.5-0.6,	KP07_0.5-0.6,							
KP09_0.3-0.4,	KP12_0.1-0.2,							
KP15_0.1-0.2,	KP19_0.1-0.2							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	28-Jan-2021	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**19-Dec-2020**	28-Jan-2021	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								
Soil Glass Jar - Unpreserved (EP080)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	31-Dec-2020	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**19-Dec-2020**	28-Jan-2021	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								
Soil Glass Jar - Unpreserved (EP080)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	31-Dec-2020	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC								
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
TRIP SPIKE 4,	TSC 4	**15-Dec-2020**	**19-Dec-2020**	29-Dec-2020	✓	**21-Dec-2020**	29-Dec-2020	✓
Soil Glass Jar - Unpreserved (EP080)								
KP01_0.5-0.6,	DUPA,	**17-Dec-2020**	**19-Dec-2020**	31-Dec-2020	✓	**21-Dec-2020**	31-Dec-2020	✓
KP02_0.2-0.3,	KP03_0.7-0.8,							
KP04_0.4-035,	KP05_0.5-0.6,							
KP06_0.3-0.4,	KP06_0.9-1.0,							
KP07_0.5-0.6,	KP08_0.2-0.3,							
KP09_0.3-0.4,	KP10_0.2-0.3,							
DUPB,	KP11_0.1-0.2,							
KP12_0.1-0.2,	KP14_0.1-0.2,							
KP15_0.1-0.2,	KP16_0.2-0.3,							
KP17_0.1-0.2,	KP18_0.1-0.2,							
KP19_0.1-0.2,	KP20_0.1-0.2,							
DUPC,	TRIP BLANK							

Matrix: **SOLID**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
FOA	**17-Dec-2020**	**----**	----	----	**22-Dec-2020**	15-Jun-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	8	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	8	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	29	13.79	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	7	32	21.88	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	26	11.54	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	8	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2045293**

Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	: Loren Schiavon
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	: Loren.Schiavon@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_539	Page	: 1 of 3
Order number	: ----	Quote number	: ES2015SULENV0034 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ADAM SULLIVAN		

Dates

Date Samples Received	: 18-Dec-2020 17:49	Issue Date	: 19-Dec-2020
Client Requested Due Date	: 22-Dec-2020	Scheduled Reporting Date	: **22-Dec-2020**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 14.8'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 27 / 27

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please note that the scheduled reporting date has not been confirmed with laboratory management due to the late arrival of the samples. If the scheduled reporting date is not achievable ALS will be in contact with you.
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200G Asbestos Identification in Soils -	SOIL - EP080 BTEXN	SOIL - S-13 OC/OP/PCB	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2045293-001	17-Dec-2020 00:00	KP01_0.5-0.6	✓	✓		✓	✓
ES2045293-002	17-Dec-2020 00:00	DUPA	✓				✓
ES2045293-003	17-Dec-2020 00:00	KP02_0.2-0.3	✓	✓			✓
ES2045293-004	17-Dec-2020 00:00	KP03_0.7-0.8	✓	✓		✓	✓
ES2045293-005	17-Dec-2020 00:00	KP04_0.4-035	✓	✓			✓
ES2045293-006	17-Dec-2020 00:00	KP05_0.5-0.6	✓	✓		✓	✓
ES2045293-007	17-Dec-2020 00:00	KP06_0.3-0.4	✓	✓			✓
ES2045293-008	17-Dec-2020 00:00	KP06_0.9-1.0	✓				✓
ES2045293-009	17-Dec-2020 00:00	KP07_0.5-0.6	✓	✓		✓	✓
ES2045293-010	17-Dec-2020 00:00	KP08_0.2-0.3	✓	✓			✓
ES2045293-011	17-Dec-2020 00:00	KP09_0.3-0.4	✓	✓		✓	✓
ES2045293-012	17-Dec-2020 00:00	KP10_0.2-0.3	✓	✓			✓
ES2045293-013	17-Dec-2020 00:00	DUPB	✓				✓
ES2045293-014	17-Dec-2020 00:00	KP11_0.1-0.2	✓				✓
ES2045293-015	17-Dec-2020 00:00	KP12_0.1-0.2	✓	✓		✓	✓
ES2045293-016	17-Dec-2020 00:00	KP14_0.1-0.2	✓	✓			✓
ES2045293-017	17-Dec-2020 00:00	KP15_0.1-0.2	✓	✓		✓	✓
ES2045293-018	17-Dec-2020 00:00	KP16_0.2-0.3	✓	✓			✓
ES2045293-019	17-Dec-2020 00:00	KP17_0.1-0.2	✓	✓			✓
ES2045293-020	17-Dec-2020 00:00	KP18_0.1-0.2	✓	✓			✓
ES2045293-021	17-Dec-2020 00:00	KP19_0.1-0.2	✓	✓		✓	✓
ES2045293-022	17-Dec-2020 00:00	KP20_0.1-0.2	✓	✓			✓
ES2045293-023	17-Dec-2020 00:00	DUPC	✓				✓
ES2045293-025	17-Dec-2020 00:00	TRIP BLANK			✓		
ES2045293-026	15-Dec-2020 00:00	TRIP SPIKE 4			✓		
ES2045293-027	15-Dec-2020 00:00	TSC 4			✓		

Matrix: **SOLID**

Laboratory sample ID	Sampling date / time	Sample ID	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
ES2045293-024	17-Dec-2020 00:00	FOA	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ADAM SULLIVAN

- *AU Certificate of Analysis - NATA (COA)	Email	adam@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	adam@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	adam@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	adam@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	adam@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	adam@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	adam@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	adam@sullivan-es.com.au

SEAN

- *AU Certificate of Analysis - NATA (COA)	Email	sean@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sean@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sean@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sean@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	sean@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	sean@sullivan-es.com.au
- EDI Format - ENMRG (ENMRG)	Email	sean@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	sean@sullivan-es.com.au

Environmental Division
Sydney
Work Order Reference
ES2045293

Sheet 1 of 3

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences
PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264

DATE: 18/12/20

TO: ALS Environmental Smithfield

Telephone : + 61-2-8784 8555

Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

Project No: SES_539
Project Manager: A.Sullivan
Agreement No: EN/222/19

Sampler(s): Adam Sullivan
Signature(s):
Checked:

Custody seal intact? YES NO
Sample cold? YES NO

Released by:
Date: 18/12/20 Time: 12pm

Received by:
Date: Time:

Container Size, Type, Preservative and Analysis
Container Identification

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	BTEXN	HOLD	Asbestos ID		
						Preservative Code							
1	17/12/20		Soil	KP01_0.5-0.6	+ Bag	2	X	X			X		
2				DUPA		1	X						
3				KP02_0.2-0.3	+ Bag	2	X				X		
4				KP03_0.7-0.8	+ Bag	2	X	X			X		
5				KP04_0.4-0.5	+ Bag	2	X				X		
6				KP05_0.5-0.6	+ Bag	2	X	X			X		
7				KP06_0.3-0.4	+ Bag	2	X				X		
8				KP06_0.9-1.0		1	X						
9				KP07_0.5-0.6	+ Bag	2	X	X			X		
10				KP08_0.2-0.3	+ Bag	2	X				X		
11				KP09_0.3-0.4	+ Bag	2	X	X			X		
12				KP10_0.2-0.3	+ Bag	2	X				X		
					TOTAL	22	12	5	0	0	10		

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 DAY TAT

TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

Rec: Sarin
18/12/20 @ 4:50pm

Labor Forward Lab / Split WO
Lab Analysis: 21/12/20 / Analysed
Organised By / Date:
Relinquished By / Date:
Courier / Courier:
WO To:
Attach By PO / Internal Sheet:

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences
PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264
Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

DATE: 18/12/20

TO: ALS Environmental Smithfield

SULLIVAN environmental sciences

Project No: SES_539
Project Manager: A.Sullivan
Agreement No: EN/222/19

Sampler(s): Adam Sullivan
Signature(s):
Checked:

Custody seal intact? YES / NO

Sample cold? YES / NO

Released by:
Date: 18/12/20 Time: 12pm

Received by:
Date: Time:

Container Size, Type, Preservative and Analysis

Container Identification							
Size							
Type*							
Preservative Code							
Analytes	S-26	S-13	BTEXN	HOLD	Asbestos ID		

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	BTEXN	HOLD	Asbestos ID		
13	17/12/20		Soil	DUPB		1	X						
14				KP11_0.1-0.2		1	X						
15				KP12_0.1-0.2	+ Bag	2	X	X			X		
16				KP14_0.1-0.2	+ Bag	2	X				X		
17				KP15_0.1-0.2	+ Bag	2	X	X			X		
18				KP16_0.2-0.3	+ Bag	2	X				X		
19				KP17_0.1-0.2	+ Bag	2	X				X		
20				KP18_0.1-0.2	+ Bag	2	X				X		
21				KP19_0.1-0.2	+ Bag	2	X	X			X		
22				KP20_0.1-0.2	+ Bag	2	X				X		
23				DUPC		1	X						
24			Bulk	FOA		1					X		
					TOTAL	20	11	3	0	0	9		

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 DAY TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

CHAIN OF CUSTODY FORM

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: Sullivan Environmental Sciences

DATE: 18/12/20

TO: ALS Environmental Smithfield

PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264
Email: adam@sullivan-es.com.au and sean@sullivan-es.com.au

Project No: SES_539
Project Manager: A.Sullivan
Agreement No: EN/222/19

Sampler(s): Adam Sullivan
Signature(s):
Checked:

Custody seal intact? YES / NO

Sample cold? YES / NO

Released by:
Date: 18/12/20 Time: 12pm

Received by:
Date: Time:

Container Size, Type, Preservative and Analysis

Container Identification							
Size							
Type*							
Preservative Code							
Analytes	S-26	S-13	BTEX	HOLD	Asbestos ID		

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	S-26	S-13	BTEX	HOLD	Asbestos ID		
25	17/12/20		soil	Trip Blank.		1			X				
26	"		"	Trip Spike 4		1			X				
27				TSC 4									
					TOTAL	2	0	0	2	0	0		

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time: 2 DAY TAT

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES