Blackwattle Bay

State Significant Precinct

Attachment 34:

Environmental Site Assessment

June 2021

NSW GOVERNMENT

Infrastructure NSW

Environmental Site Assessment

Blackwattle Bay Study Area

12 January 2021

54162/132,821 Rev 3

JBS&G Australia Pty Ltd

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Abbreviations

Term	Definition
ACM	Asbestos Containing Materials
AGST	Above Ground Storage Tank
AHD	Australian Height Datum
APEC	Areas of Potential Environmental Concern
ASRIS	Australian Soil Resource Information System
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soil Management Plan
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
CLM Act	Contaminated Land Management Act
COC	Chain of Custody
COPC	Contaminants of Potential Concern
COS	City of Sydney
CSM	Conceptual Site Model
DO	Dissolved Oxygen
DP	Development Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
Eh	Redox Potential
EIL	Ecological Investigation Levels
EPA	NSW Environment Protection Authority
ESA	Environmental Site Assessment
ESLs	Ecological Screening Levels
Ha	Hectare
HILs	Health Investigation Levels
HSLs	Health Screening Levels
INSW	Infrastructure NSW
JBS&G	JBS&G Australia Pty Ltd
LEP	Local Environmental Plan
LOR	Limit of Reporting
NATA	National Accreditation Testing Authority
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and polyfluoroalkyl substances
PID	Photoionisation Detector
POEO Act	Protection of Environment Operations Act
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percentage Difference
SAQP	Sampling Analytical and Quality Plan
SCID	Stored Chemical Information Database
SEPP	State Environmental Planning Policy
SSP	State Significant Precinct
SWRCP	Site Wide Remedial Concept Plan
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UGNSW	UrbanGrowth NSW
UST	Underground storage tank
VOC	Volatile Organic Compounds

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Infrastructure NSW (INSW, the client) to complete an Environmental Site Assessment (ESA) for the properties that comprise the Blackwattle Bay Study Area (the site). The site comprises a number of individual properties along Bridge Road and Bank Street, in addition to the water of Blackwattle Bay as shown in **Figures 1** and **2**.

The extent of land area and water area within Blackwattle Bay will change with the construction of the new Sydney Fish Market (SFM). Previously, the total land area was 8.4 hectares and water area was 23 hectares. However, part of the new SFM is being developed below the mean high water mark, increasing the overall land area of the study area to 10.4 hectares and reducing the water area to 21 hectares. It is understood that INSW is proposing to rezone the properties within the site, to permit a staged mixed-use development as per the masterplans presented in **Appendix B**.

To assist with the State Significant Precinct (SSP) Study requirements, assessment of site contamination risks is required to establish that the site is, or can be made, suitable for the proposed future land use scenarios. As such, this ESA seeks to complete a broad-scale assessment of contamination within the Blackwattle Bay Study Area, where individual lots will be subject to future redevelopment and as required, identify requirements for additional detailed contamination assessments and/or remediation.

The scope of work undertaken for this assessment included: a desktop review of site contamination and geotechnical investigation reports as available; a review of historical site use information and regional environmental information to identify areas of potential environmental concern (APECs) and associated contaminants of potential concern (COPCs); development and documentation of a contamination conceptual site model (CSM) based on the available information with consideration to the future redevelopment scenarios; and preparation of this assessment report presenting the outcomes of the assessment.

Based on the scope of work completed for this assessment and subject to the limitations in **Section 7**, the following conclusions are provided:

- Given the proximity of the Blackwattle Bay Study Area to the Sydney CBD and the initial location of Sydney colony, portions of the Blackwattle Bay Study Area have a long and often varied history of uses that may contribute to current site contamination characteristics. Broadly, the site was subject to land reclamation activities in the period from approximately 1880s to the 1920s. From the 1900s, the eastern portion of the site contained an oil storage and distribution facility as well as various commercial operations that included a timber merchants, abattoirs and a garbage collector's yard. In the 1960s, the oil storage facility was replaced with the current Sydney Fish Market as well as a concrete batching plant and various commercial properties that continue to operate at the present time.
- Assessment of site conditions as based on historical investigations completed across the site has allowed for the broad characterisation of potential site contamination conditions associated with historical activities at the site. As such, it is considered that for the most part, previous data collection activities have been completed and documented in a manner suitable to support the development of a CSM of site contamination potential.
- The CSM presented in **Section 5**, identified several APECs across the site as associated with historically placed fill and reclaimed land, the former coal wharf, current and former concrete batch plants, current and former industrial areas, marine areas, known/suspected current and former petroleum based storage and dispensing facilities as well as impacted sediments.
- The APECs may have caused impacts to site soils, sediments, groundwater, surface water and soil vapour conditions that will require further assessment and if considered necessary

based on detailed land use proposals, potential management (during the redevelopment of the individual lots within the Blackwattle Bay Study Area.

- Notwithstanding, the range of potential constituents and media affected are common and typically encountered on brownfield redevelopment sites in the Sydney basin. The potential contamination is unlikely to be of such a scale or occurrence that common and readily available remediation and/or management techniques could not render the site, or portions thereof, suitable for the proposed uses. As such, the potential for contamination to occur at the site is considered not to preclude planning of the future development of the site.
- It is recommended that a SWRCP be prepared for the Blackwattle Bay Study Area in order to establish a suitable framework for management of potentially contaminated media in order to facilitate the staged redevelopment of the Blackwattle Bay Study Area.
- Upon the development of specific development plans for individual site areas, the existing available data set for the relevant areas should be reviewed in conjunction with the overall site remedial strategy, such that a specific assessment of site contamination issues may be completed and remedial actions and/or management plans be developed to demonstrate the respective site portion is, or can be made, suitable for the proposed use.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Infrastructure NSW (INSW, the client) to complete an Environmental Site Assessment (ESA) for the properties that comprise the Blackwattle Bay Study Area (the site). The site comprises a number of individual properties along Bridge Road and Bank Street, in addition to the water of Blackwattle Bay as shown in **Figures 1** and **2**.

The extent of land area and water area within Blackwattle Bay will change with the construction of the new Sydney Fish Market (SFM). Previously, the total land area was 8.4 hectares and water area was 23 hectares. However, part of the new SFM is being developed below the mean high water mark, increasing the overall land area of the study area to 10.4 hectares and reducing the water area to 21 hectares. It is understood that INSW is proposing to rezone the properties within the site, to permit a staged mixed-use development as per the masterplans presented in **Appendix B**.

To assist with the State Significant Precinct (SSP) Study requirements, assessment of site contamination risks is required to establish that the site is, or can be made, suitable for the proposed future land use scenarios. As such, this ESA seeks to complete a broad-scale assessment of contamination within the Blackwattle Bay Study Area, where individual lots will be subject to future redevelopment and as required, identify requirements for additional detailed contamination assessments and/or remediation.

The ESA was completed in general accordance with NEPC (2013)[1], guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objective

The objectives of the assessment were:

- Identify, review and collate all available existing site contamination and geotechnical assessment data as may be available for land parcels and bay sediments within the site area, inclusive of site (ground) condition observations and laboratory analysis results for contaminants of potential concern (COPCs);
- Identify, review and collate site geological and hydrogeological information, including salinity and acid sulfate soil (ASS) conditions that may present a constraint to future site redevelopment;
- Document a conceptual site model (CSM) with regard to the current and future proposed land uses and identified contamination concerns to enable identification of potential site contamination concerns presenting a constraint to future site redevelopment that will ultimately allow for the preparation of a Site Wide Remedial Concept Plan (SWRCP) for BBP; and
- Address the existing environment characterisation requirements as part of the SSP Study requirements with regard to geotechnical, contamination and hazardous activities.

1.3 Scope of Works

The following scope of work has been undertaken for the assessment:

- Review of previous site contamination and geotechnical assessment/investigation reports as made available to JBS&G;

[1] *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1),* National Environment Protection Council, 2013 (NEPC 2013).

- A desktop review of site history and background information, to identify areas of potential environmental concern (APECs) and associated COPCs;
- Site inspection of accessible site areas to identify/confirm APECs;
- Development and documentation of a CSM based on the available information; and
- Preparation of this report documenting the results and findings of the investigation.

1.4 Blackwattle Bay SSP Study Area

The SSP Study is proposing to rezone Blackwattle Bay with a new planning framework and planning controls to enable its future urban renewal.

The rezoning proposal is based on the Blackwattle Bay Precinct Plan ('Precinct Plan') which provides a conceptual layout to guide the development of planning controls for the precinct and has informed this report as provided in **Appendix B**. The Precinct Plan provides overarching guidance about how the area should be developed based on community and stakeholder input, local character and place, current and future demographics, economic and social trends, cultural and environmental considerations, and urban renewal aspirations and needs regarding land use, community recreation, transportation, housing, and jobs. Key characteristics of the Precinct Plan include:

- New homes, jobs and services close to the CBD including:
  - 5,636 jobs / or approximately 5,600 jobs.
  - 2,795 residents /or approximately 2,800 residents.
  - 1546 dwellings including 10% affordable housing.
- A continuous waterfront promenade – the missing link in an otherwise 15km foreshore walk from Woolloomooloo to Rozelle;
- New active transport connections to bring the neighbourhood closer to the harbour through new and improved pedestrian and cycling links;
- Improved public transport options and minimised vehicle usage strategies including:
  - Minimising car parking spaces with limited on-street parking.
  - Ferry wharf.
  - Opportunity for buses to service through site link.
  - Connections to the existing light rail.
  - Access to a future Sydney Metro West Station in Pyrmont.
- New parks and green space with 30,000 m^2 of new open space;
- An authentic, and world class new SFM at the heart of Blackwattle Bay; and
- An authentic place that builds on Indigenous and industrial stories and celebrating the local character.

Noting the proposed land-uses, consideration has been given to a variety of generic land-uses as provided to *National Environment Protection (Assessment of Site Contamination) Measure, 1999 Amendment No 1*, National Environment Protection Council (NEPC 2013) and detailed following:

- HIL A – Residential with garden/accessible soil, that also includes childcare centres, preschools and primary schools;
- HIL B – Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments;

- HIL C – Public open space such as parks, playgrounds, playing fields, secondary schools and footpaths; and
- HIL D - Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.

2. Site Condition and Environmental Setting

2.1 Site Identification

The site as shown on **Figure 1** and **Figure 2**, comprises properties within Bank Street and Bridge Road as well as those within Blackwattle Bay. Individual properties that together form the Blackwattle Bay Study Area are identified by Lot and DP identifiers on **Figure 2** and listed in **Table 2.1** below**.** It is understood that the land portion of the Blackwattle Bay Study Area is currently zoned as Ports and Employment under *State Environmental Planning Policy (SEPP) No. 26 – City West*.

Table 2.1: Blackwattle Bay Study Area Property Details

Address	Lot / DP Details
Blackwattle Bay	Lot 107 DP1076596
Sydney Harbour	Part Lot 5 DP1209992
1A Bridge Road	Lot 5 DP1064339
1B Bridge Road	Lot 4 DP 1064339
1C Bridge Road	Lot 3 DP1064339
56 – 60 Pyrmont Bridge Road	Lots 1 and 2 DP125720, Lot 1 DP835794, Lot 1 DP734622, Lot 1 DP836351, Lot 2 DP827434, Lot 1 DP74155, Lots 1 and 2 DP827434, Lots 70, 73, 77, 79, 80 and 81 DP1027254 and Lot 17 DP1027254
1B Bank St and 41-45 Bank St	Lot 100 DP836204, Lot 2 DP1064339, Lot29 DP815847, Lot 25 DP815847, Lot 28 DP15847
37 – 39 Bank Street	Lot 24 in DP815847 and Lot 28 DP 815847
31 – 35 Bank Street	Lots 20, 21, 22 and 23 DP811844
21-29 Bank Street	Lot 1 DP442260, Lot 11 DP803160, Lot 10 DP803160, Lot 1 DP435429, Lots 7, 8 and 9 DP803160
5 Bank Street	Lot 20 DP803159
7 Bank Street	Lot 19 DP803159
9 Bank Street	Lot 21 DP803159
11 Bank Street	Lot 22 DP803159
17-19 Bank Street	Lot 5 and 6 DP803160
1-3 Bank Street	Lots 1 and 2 DP1089643, Lot 1 DP439245
1A Bank Street	Lot 1 DP188671 and Lot 1 DP85206

2.2 Site Description

Inspections of various properties forming Blackwattle Bay Study Area have been completed during the period from June 2014 to March 2020 by various JBS&G consultants suitably trained, qualified and experienced in the identification of site contamination issues. Whilst a number of the 2014 – 2015 inspections were limited to publicly accessible areas and/or government entity land, the 2017, 2019 and 2020 inspections included access to a number of sites previously inaccessible with regard to inspection. During these more recent site visits, suitable inspections were completed to confirm previous observations on adjoining accessible lots remained applicable.

Individual developments forming the properties occupying the site are discussed following, moving around Blackwattle Bay from south-west to north via the east site portion.

Blackwattle Bay – Lot 107 DP1076596 comprises the majority of the marine foreshore and surface water areas of Blackwattle Bay. Lot 107 DP1076596 further comprises the receiving waterbody from land-based properties within the Blackwattle Bay Study Area located in the southern and eastern portions of the site.

Sydney Harbour – The northern portion of the Blackwattle Bay Study Area partially extends into Sydney Harbour in part Lot 5 in DP1209992. This portion of the site is located adjacent (i.e. forms the foreshore area) to the properties of 1-3 Bank Street and 5 Bank Street (discussed further below) located in the north-eastern portion of the site.

1A Bridge Road – The location of the former Hanson concrete batching plant within the south-west extent of the property (Lot 5 DP1064339), that previously comprised several large bulk material silos, loading infrastructure, several washdown bays, and vehicle movement areas, vessel unloading facilities and an office building. The northern portion of this premises was situated on a wharf structure overlying hardwood, whilst the south-east portion appeared to have been constructed on retained fill to the rear of a sea wall. A number of conveyors connected the batch plant, silos and truck filling point infrastructure. Two designated bunded areas for chemical storage were located in the central portion and batch plant areas of the property. A two storey office building was situated in the east most portion of the premises. It is noted that at the time of preparing this ESA, the concrete batching plant was in the process of been demolished in order to accommodate the new Sydney Fish Market development.

1B Bridge Road - The central premises, identified as Lot 4 DP 1064339 comprised infrastructure associated with former use of this area associated with commercial hire boat operations. These facilities included a wharf portion and associated berths in the north. In 2017 vehicle parking areas, a demountable office building and shipping containers used for storage of supplies and audio-visual equipment associated with harbour cruises occupied the property. In late 2018, all temporary structures and associated storage facilities had been removed from the property. One small building of unknown former use was located at the eastern most extent of this premises in addition to one small shed type structure adjacent to the property boundary in the central portion of the property.

The entire premises appeared paved with concrete or asphalt covered concrete pavements supported on timber beams and turpentine piles, with the southern portion overlying fill material retained by a sea wall. Beyond the sea wall, services supporting the boats at dock (in 2017) were pinned to the underside of the wharves (including sewer, water and power). A sewer pump out facility was situated adjacent to the property entry, connected to the facilities beneath the wharves. Inspection of the property pavements, following removal of the former structures and storage infrastructure did not identify indications of above (AGST) or underground fuel storage tanks (USTs).

1C Bridge Road - The east most premises (Lot 3 DP1064339) facing Bridge Road comprised the remnants of the former Jones Brothers coal loader wharf facilities. The remnants included a rendered wall and timber framework adjacent to the street boundary and a paved yard area where structural steel infrastructure has been stockpiled. Several temporary building structures were also located in this area. A sandstone block retaining structure retained the land portion of this premises above the water line. Weed vegetation and several mid sized trees were situated in this portion of the BBP site.

56 – 60 Pyrmont Bridge Road - The largest premises within the Blackwattle Bay Study Area is situated at the corner of Pyrmont Bridge Road and Bank St in the east most section of the site (Lots 1 and 2 DP125720, Lot 1 DP835794, Lot 1 DP734622, Lot 1 DP836351, Lot 2 DP827434, Lot 1 DP74155, Lots 1 and 2 DP827434, Lots 70, 73, 77, 79, and 80 DP1027254 and Lot 17 DP1027254). This premise comprised the existing Sydney Fish Markets complex inclusive of the existing main market building, exterior carparking, exterior public seating area, annex buildings surrounding the car park to the east and north and several small wharf structures extending into Blackwattle Bay.

The main building comprised a multi-storey commercial structure housing commercial retail and wholesale tenancies, public seating areas and sales stall areas. Truck loading docks framed the northern extent of the buildings, with cool rooms and the main auction area floor within the eastern portion of the building. Restaurants, fish monger tenancies, a seafood cooking school, office administration spaces and other amenities, occupied the ground and upper floors of the western building extent. An electrical substation was also noted to be present in the eastern portion of the main market building.

The annex buildings framed the northern carpark area and tended to comprise small single storey structures of varying composition housing fishmonger warehouses/retail outlets and complementary

businesses. The vehicle carpark was paved with a mix of concrete and asphaltic concrete pavements with ground levels gently falling toward the west across the footprint. A number of disused underground fuel storage tanks (USTs) were situated within the car park portion of the facilities as indicated by fill/dip points and associated markings. There was no evidence of bowsers remaining at the property. The western extent of the carpark facilities comprised a constructed sea wall. Access to the carpark was via a partially raised concrete paved access road at the northern most property extent that extended from Banks St at the north-east of the property, along the northern property boundary before entering the carpark area in the north-west.

Additional vehicle parking, largely for operational market vehicles was located beyond the eastern extent of the fish market building. No significant vegetation was apparent within this premises, however a number of large fig trees were apparent to the east of the property extent within the Banks St road reserve adjoining the property boundary. It is anticipated that significant underground services remain present beneath the former Gipps St former roadway, running in an east-west axis to the north of the main market building.

An external paved promenade and outdoor public seating area extended to the west of the main building to the water's edge. It is understood that part of these facilities have been suspended above a constructed seawall, which forms the western property boundary for the purposes of this assessment. A small grassed area is present on the south-western boundary of the premises that exists between the promenade and the seawall within reclaimed land.

1B Bank St and 41-45 Bank St - A Hymix concrete batching plant (Lot 100 DP836204, Lot2 DP1064339, Lot29 DP815847, Lot 25 DP815847, Lot 28 DP15847) was located to the north of the fish markets property, fronting Bank St to the east. These facilities included an office/amenities building in the south-west, bulk material storage silos and associated loading infrastructure in the west, with the balance comprising paved vehicle movement/parking areas. A number of mature trees were present in the southern and central portions of this property. An above ground storage tank (AGST) was apparent adjacent to the Bank St boundary.

37 – 39 Bank Street - Lot 24 in DP815847 and Lot 28815847 comprised of a small paved vehicle parking area associated with a wharf structure at the water the water's edge. Several shipping containers appearing to be used for equipment storage were present at the property. Signage indicated that this premises was operating as a marine contractor's yard.

31 – 35 Bank Street - The premises to the north of the yards (Lots 20, 21, 22 and 23 DP811844) was previously occupied by a seafood distribution business but at the time of the 2017 inspection appeared to be disused. A large single and two storey warehouse structure occupied the majority of the property, which appeared to have been levelled via filling of the westerly property portion, resulting in a sea wall at the west property extent. The rear portion of the building overlay basement level parking facilities with the balance of the property beyond the building footprint also appearing to have previously been used for parking of vehicles. Markings within the pavements indicate that previous subsurface investigation (boreholes and monitoring wells) have been completed at the property and there is the potential that an UST (or former UST) remains underlying the paved area at the east of the premises. There was no apparent current infrastructure within this portion of the property.

21-29 Bank Street - (Lot 1 DP442260, Lot 11 DP803160, Lot 10 DP803160, Lot 1 DP435429, Lots 7, 8 and 9 DP803160), comprised a commercial premises including a two storey building occupied by a seafood distribution business. The building occupied the southern portion of the property, with an open vehicle parking area to the north. The building appeared to have been cut into the natural slope with a 2-3 m tall retaining wall separating the higher east site portion from the balance of the property. As such, the ground floor/administration area at the front (east) of the building and packaging/handling areas within the balance of the ground floor areas was situated level with Banks St. A lower ground floor level was occupied by seafood cold storage rooms. A ramp providing

delivery vehicle access to this lower level was situated in the south-east portion of the premises in addition to air-conditioning/refrigeration infrastructure associated with the cold stores. A loading dock and hardstand parking areas fronted Bank Street, where two fuel dispensers (unleaded and diesel) were apparent. It was inferred these bowsers were connected to at least two USTs within this eastern portion of the premises.

A paved parking area, reasonably level and at an elevation consistent with the lower ground floor of the commercial building was situated in the northern portion of the premises. Associated facilities included a washdown bay located adjoining the building in the north-east property portion inclusive of a sump and oil/water separator unit and nearby water storage tank. A sea wall with sandstone blocks/boulders was located at the west extent of the building and parking area.

5, 7, 9 11, 17-19 Bank Street – (Lots 5 and 6 DP803160 and Lots 19 to 22 DP803159) This area comprised a large vacant space surfaced generally with loose aggregate. Several shipping containers, dragon boat storage, vehicle trailers and other associated infrastructure were stored within this yard. A ramp extended down to the south-west and a landscaped area adjoining a boat launching ramp at the water's edge. Anzac Bridge infrastructure was situated in the northern portion of this premises, including a large pylon structure, bridge lighting and a hard stand area partially overgrown with weeds.

It is understood that this area was subsequently redeveloped in the period from April to September 2020 to accommodate a new marina. From a review of the latest Nearmap[2] aerial imagery (dated 26 September 2020) it appears that new hardstand and an additional building were constructed in the northern portion of the property.

1-3 and 1A Bank Street – (Lots 1 and 2 DP1089643, Lot 1 DP439245, Lot 1 DP188671 and Lot 1 DP85206) A premises comprising a series of adjoining brick commercial/industrial type buildings built to the Bank Street boundary with a central, enclosed courtyard. Based on the layout, it appeared the premises facing Bank St to the east and vacant land to the north (buildings 1 and 2) were likely residences formerly converted to commercial offices, building 3 at the west was likely a workshop with residence above, whilst the buildings at the south site extent (buildings 4 and 5) may have also been used as a seafood/poultry distribution premises and abattoir. At the time of the inspection, the premises were all vacant. Two vents and associated indicators of a UST and former bowser plinth were apparent within the paved central courtyard. A seawall retaining the property above the water line was apparent at the south-west property extent. Several large trees and understorey vegetation was situated in the south-west property corner adjacent to the water's edge, in addition to an area of overgrown vegetation suited beyond the property boundary to the north between the property boundary and the Glebe Island Bridge approach to the north-west.

2.3 Geology and Soils

Review of the Sydney 1:100 000 Geological Series Sheet 9130, NSW Department of Mineral Resources, 1983 indicates that the site is generally underlain by three geological types:

- Man-made fill typically comprising dredged estuarine sand and mud, demolition rubble, industrial and household waste;
- Quaternary aged silty to peaty quartz sand, silt and clay deposits with ferruginous and humic cementation in places and with common shell layers; and
- Hawkesbury Sandstone typically characterised as medium to coarse-grained quartz sandstone with very minor shale and laminate lenses.

[2] http://maps.au.nearmap.com/ (accessed 9 December 2020)

The upper reaches at the east of the site are typically underlain by Sandstone bedrock as evidenced in areas of historical quarrying and cut along Banks St. Closer to the water's edge, it is expected that the Sandstone bedrock is overlain by quaternary aged deposits and in some instances man-made fill material where reclamation has historically occurred to generate current site levels. It is further understood that at several volcanic dyke intrusions have been identified to extent across the site in a north-west to south-east alignment.

Review of the Sydney 1:100 000 Soil Landscape Series Sheet 9130, Department of Land and Water Conservation, 1983 indicated that the site primarily lies within a Disturbed landscape. Disturbed landscapes are reported to generally comprise hummocky terrain, extensively disturbed by human activity including complete disturbance, removal or burial of soil, variable relief and slopes. Disturbed landscapes may include quarries, tips, land reclamation and large cut and fill features. Original vegetation may cleared and weeds may be abundant.

Within these profiles, the ground generally includes soil, rock, building and waste materials. Limitations of Disturbed landscapes includes soils with high variability that may include engineering hazard, unconsolidated low bearing strength materials, low permeability, poor drainage, very low soil fertility, toxic materials and wind erosion hazard. Disturbed landscapes may be sources of sediment and groundwater contamination.

None of the above mentioned landscapes are associated with saline soil conditions and as such this area of Sydney is not presented in published salinity risk maps.

Previous site investigation activities within Blackwattle Bay Study Area have identified the presence of limited fill material close to the shoreline to depths of up to approximately 0.5 m below the sea bed. Otherwise, within the bay, the natural sediment/soils comprised interbedded layers of silty clay, sandy clay and clayey sand soils with varying amounts of fine to coarse grained gravel, shell fragments and other organic materials. The predominantly clay samples were assessed as ranging from very soft to very stiff and of medium to high plasticity, although the more sandy clays were generally of low to medium plasticity. The sand based soil profile was identified as occurring within the range from very loose to dense relative density.

2.4 Acid Sulfate Soils

Review of the Prospect/Parramatta River 1:25 000 Acid Sulfate Soil Risk Map Sheets 9130N3 indicates that the majority of the land based portion of the Blackwattle Bay Study Area is located within an area classed as 'disturbed terrain'. Areas having this classification typically include filled areas which often occur following reclamation of low lying swamps for urban development. Other areas with this classification may include areas which have been mined, dredged, or have undergone heavy ground disturbance through general urban development. Soil investigation is required to assess these areas for acid sulfate potential.

The area of the site covered in surface waters, is located within an area of 'high probability' of acid sulfate soils (ASS) within bottom sediments. In such areas, there is the potential for severe environmental risk if bottom sediments are disturbed by activities such as dredging.

Based on previous site investigation activities completed in various portions of the site, potential ASS conditions have been identified in natural alluvial/marine soil underlying fill material and in adjoining bay sediments within Blackwattle Bay. Where natural alluvial/marine soil/sediments are identified or fill materials have alluvial/marine characteristics appropriate measures to manage the acid generation risks will be required to be documented as an ASS management plan (ASSMP) prior to any works that may result in disturbance (and so oxidation) of these materials.

Broadly, fill material where assessed has been identified as having being imported to the site rather than reclaimed via dredging activities and as such, has not been identified as ASS. However, it should be noted that further characterisation of site conditions prior to the commencement of ground

disturbance activities should be completed to verify the absence of fill material with unacceptable acid generation potential.

2.5 Hydrology

Blackwattle Bay comprises the ultimate surface water receptor for the land based portions of the site. Given the local topography and existing site features, following precipitation events the majority of surface water falling on the is expected to discharge directly into the bay either via overland flow, or stormwater drainage infrastructure. This is expected to predominantly occur via collection in localised stormwater systems and subsequent discharge to the nearest down-gradient location. Infiltration in unsealed areas of the site and subsequent tidal influences in shallow groundwater near sea walls are expected to be a minor source of discharge. Direct run off from sealed surfaces into the bays is also expected be a minor source of discharge for parcels directly adjoining the waterfront.

2.6 Hydrogeology

Review of the NSW Natural Resource Atlas registered groundwater bore information completed during previous site assessments has identified a number of recorded groundwater bores situated within the site and upgradient within Wentworth Park.

Based on the previous available site investigation information broadly available for the Blackwattle Bay Study Area and the previously reported registered monitoring well information, the following comments are made in relation to general anticipated groundwater conditions:

- In areas adjoining the waterfront, groundwater may be present in alluvial/estuarine soils and/or in fill material as a result of reclamation activities. In some instances, tidal patterns may also influence groundwater elevations and migration rates in close vicinity to the water's edge;
- Perched and/or localised seepage is also likely present at the interface between fill material and underlying sandstone or at transition zones between natural soil and sandstone where lateral movement occurs preferentially as a result of the change in permeability conditions; and
- Groundwater is anticipated to be present within joints, cracks and other inconsistencies within sandstone bedrock underlying the site at various depths.

2.7 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Sydney-Observatory Hill[3]) indicates that the site is located within the following metrological setting:

- Average minimum temperatures vary from 8.1°C in July to 18.9°C in February;
- Average maximum temperatures vary from 16.4°C in July to 26.0°C in January;
- The average annual rainfall is approximately 1215 mm with rainfall greater than 1 mm occurring on an average of 100 days per year; and
- Monthly rainfall varies from 68 mm in September to 133 mm in June with the wettest periods occurring on average during the period from March to June inclusive.

2.8 NSW EPA Public Register Search Records

A search of the NSW EPA's public register maintained under the Protection of the Environment Operations Act (POEO) 1997 was undertaken and is included as **Appendix C**.

[3] http://www.bom.gov.au/climate/averages/tables/cw_066062.shtml Commonwealth of Australia, 2011 Bureau of Meteorology, Product IDCJCM0028 prepared at 03 October 2019 and accessed by JBS&G on 03 October 2019.

The search identified that, for the properties comprising the Blackwattle Bay Study Area, there was:

- One active Environmental Protection Licence (EPL), issued to Hanson Construction Materials, operating the concrete batching plant in the western portion of the site for Shipping in Bulk (3801). It is assumed that this licence will be surrendered given that the facility is been demolished to accommodate the new Sydney Fish Market;
- No prevention, clean up or prohibition notices;
- No suspension, surrender or revocation of an environmental protection licences.

A search was undertaken through the EPA's public contaminated land register and is included as **Appendix C**. The search identified that there have been no notices issued under the Contaminated Land Management Act 1997 (CLM Act) for the properties comprising the Blackwattle Bay Study Area. The properties comprising the Blackwattle Bay Study Area have not previously been notified to the EPA under section 60 of the CLM Act with regards to contamination. Review of the list of properties notified to the EPA did not identify any nearby properties that may represent a contamination migration risk to the site. It is noted that the former Council Works Depot (Fig and Wattle Depot) located at 14-26 Wattle St Pyrmont has previously been notified to the NSW EPA, however regulation under the CLM Act was not required.

A search was also undertaken through the EPA's Per- and polyfluoroalkyl substances (PFAS) register of contaminated sites. The search identified that there are no sites within vicinity of the site notified to the EPA with regards to PFAS contamination.

3. Summary Site History

Given the proximity of Blackwattle Bay Study Area to Sydney CBD and the initial location of Sydney colony, portions of the Blackwattle Bay Study Area have a long and often varied history of uses that may contribute to current site contamination characteristics. Broad comments in relation to historical site use information are made at Precinct level in the following sections.

It is anticipated that specific uses of various individual areas within the Blackwattle Bay Study Area will be required to be documented in future detailed site assessment activities to facilitate preparation of defensible site assessments to support Remedial Action Plans (RAPs) for future redevelopment.

Based upon information presented in previous site investigations, previous site use of the Blackwattle Bay Study Area is summarised in the following overall comments:

- **1880s - 1891** – land reclamation works were completed resulting the formation of Wentworth Park to the south of the Blackwattle Bay Study Area with an embankment formed along the southern extent of the Study Area associated with the current northern extent of Bridge Rd. The balance of the Study Area along the eastern shoreline of Blackwattle Cove had yet to be reclaimed.
- **1860s** – the first bridge was constructed immediately to the north of the site, joining Pyrmont to Glebe Island.
- **1890s - 1920s** – reclamation works were completed along the eastern portion of the Site resulting in a number of small industrial land parcels being sold freehold as parts of the Harris Estate. These included properties facing Banks St, Gipps Crescent, Wattle St and Blackwattle Bay. At the time, some of these properties were already the subject of leases by timber storage yards and other small industrial occupants.
- **1900s** – the British Imperial Oil Company Ltd and the Shell Company of Australia Pty Ltd leased the current day Fish Market car park portion of the site for use as an oil distribution and storage facility and constructed various stores buildings and above ground product storage tanks at the site. The site portion to the north of Bridge Road was used for a range of commercial purposes that included a timber merchants, abattoirs and a garbage collector's yard.
- **1930s** – the east side of Blackwattle Bay was occupied by a significant number of small industrial lots, many with small wharves extending into the Bay and wharfage consistent with the coal loader at the south extent of the Site.
- **1950s** – the Shell Co of Australia Ltd site facilities were documented as including stores for various types of petroleum oils and lubricants both in stores buildings and in large storage tanks. Drums were filled on site in a shed and kerosene and turpentine were also stored in above ground tanks at the site. Timber yards were located to the north and south of the Shell site with an AGL property located further to the north within the Blackwattle Bay Study Area. The balance of the eastern foreshore to Glebe Island Bridge was a mix of small industrial and vacant lots. The southern portion of the Blackwattle Bay Study Area comprised facilities associated with several coal depots and a ship painter's workshop.
- **1960s** – the former timber yard and Shell site at the south east of the Site were replaced by leases to the NSW Fish Authority with the initial market operations commencing in July 1966. Former small industrial buildings at the north extent of the Site appeared to have been redeveloped as storage yards for materials. A concrete batching plant was developed in proximity to the former AGL site at the central east of the Site during this period.

- **1980s** – many of the small industrial parcels at the north-east of the Site comprised open hardstand yards. By approximately this time the second concrete batching plant at the south west extent of the Site had been commissioned. In 1982, the fish market was extended, encompassing the land parcel south of the former Gipps St, to form its current day footprint, which resulted in the construction of a new market and shops building and conversion of the northern section to carparking facilities.
- **1990s –** the former coal wharves were decommissioned, and five former USTs were understood to have been decommissioned and removed as part of these works in addition to removal of asbestos materials. The tanks were understood to have formerly contained gasoline, distillate, racing fuel, mineral spirit and mineral oil. Following the decommissioning works, this portion of the site was used for commercial boat hire operations.
  The ANZAC Bridge supports were constructed in the early to mid-90s during which time parcels in the north of the Site were used as work sites/construction compounds. Following completion of the bridge, several areas were converted for use as dragon boat club facilities. Several large warehouse/stores type buildings were constructed between these parcels and the concrete batching plant site at the east of the Site.
- **2020** – the former concrete batching plant at the head of Blackwattle Bay was decommissioned, in which all associated infrastructure was in the process of been demolished at the time of preparing this ESA, in preparation of the new Sydney Fish Market development.

4. Previous Assessments

A range of assessment reports prepared by JBS&G and others has been made available for review across the Blackwattle Bay Study Area to support this assessment. The following sections provide a summary and evaluation of the information and site characterisation data presented in each report, noting that a number of reports refer to the larger Bays Precinct footprint as a whole, whilst the remainder of the reports are specific to individual premises within the Blackwattle Bay Study Area.

Comments in relation to contaminants of potential concern are provided in the following text in relation to assessment criteria adopted by the author at the time of report preparation. Exceedances shown in accompanying summary results tables are based on assessment criteria typically endorsed by NSW EPA at the time of the assessment report preparation. This comprises the range of health investigation levels presented in NEPC (1999[4]) and EPA (1994[5]) for investigation results generally up to an including the end of 2012; ANZECC (2000[6]) for groundwater and sediment thresholds until mid 2018, following which ANZAST (2018[7]) has been adopted and NEPC (2013[8]) for groundwater results from 2012 onward (where TRH and benzo(a)pyrene TEQ values) were presented in reports.

This is considered appropriate to identify contaminants requiring further consideration in relation to development of an appropriate high-level management/remediation framework. Development of detailed remediation/management strategies for future specific land use proposals will be required to develop site specific assessment criteria with consideration to relevant land use scenarios against which the presented data may be further evaluated.

The reports as discussed in the following sections include:

- *Environmental Assessment, Sydney Fish Markets*. ICF Pty Ltd, 28 January 1994 (ICF 1994a)
- *Phase II Environmental Assessment, Sydney Fish Markets* – Area A. ICF Pty Ltd, 20 January 1994 (ICF 1994b)
- *31-35 Bank Street, Pyrmont. Assessment of Contamination for Property Transfer (Draft)*. Gutteridge Haskins & Davey Pty Ltd (GHD), November 1997 (GHD 1997)
- *Review of Environmental Factors Pier Demolition at Blackwattle Bay, Pyrmont*. Umwelt Australia Pty Ltd. June 2008. (Umwelt 2008) incorporating *Report on Marine Sediment Contamination Assessment – Hymix Wharf Blackwattle Bay*, Pyrmont. Douglas Partners Pty Ltd, June 2008, Ref: 45560 (DP 2008)
- *Environmental Site Investigation, Blackwattle Bay Maritime Precinct, Blackwattle Bay Maritime Precinct, NSW*. March 2009, Parsons Brinckerhoff (PB 2009)
- *Soil Contamination Investigation, 1 Bank Street, Pyrmont NSW*. June 2010, Noel Arnold and Associates Pty Ltd (NAA 2010)
- *Report to Sydney Fish Market Pty Ltd on Environmental Site Assessment and Acid Sulfate Soil Assessment for Proposed Redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW*. June 2010, Ref: E23982Krpt, Environmental Investigation Services (EIS), June 2010 (EIS 2010a)

[4] *National Environment Protection (Assessment of Site Contamination) Measure, 1999*. National Environment Protection Council, 1999 (NEPC 1999)

[5] *Contaminated Sites: Guidelines for Assessing Service Station Sites*. NSW EPA December 1994 (EPA 1994)

[6] *Australian and New Zealand Guidelines for Fresh and Marine Waste Quality, Volume 1*, Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand, October 2000 (ANZECC 2000)

[7] *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Water Quality Australia, 2018 as available at waterquality.gov.au/anz-guidelines

[8] *National Environment Protection (Assessment of Site Contamination) Measure, 1999 Amendment No. 1 2013* (NEPC 2013)

- *Report to Land and Property Management Authority C/- Government Architects Office on Preliminary Environmental Site Assessment for Proposed Redevelopment – Waterfront at Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW*. Ref: E24125Krpt, EIS, August 2010 (EIS 2010b)
- *Report to Sydney Fish Market Pty Ltd and Land and Property Management Authority on Additional Environmental Site Assessment and Remediation Action Plan for Proposed Redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW*. EIS, August 2010, Ref: E23982Krpt2, (EIS 2010c)
- *Report to Sydney Fish Market Pty Ltd and Land and Property Management Authority on Acid Sulfate Soil Management Plan for Proposed Redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW*. EIS, August 2010, Ref: E23982FrptASSMP, (EIS 2010d)
- *Report to Sydney Fish Markets Pty Ltd on Geotechnical Investigation for Proposed Redevelopment, Stages 2 to 4 Including New Access Roadways and Parking at Sydney Fish Markets, Blackwattle Bay, Pyrmont, NSW*. Jeffery & Katauskas Pty Ltd, 16 June 2010, Ref: 23982Srpt-Stages 2-4 (JK 2010a)
- *Report to Government Architects Office on Geotechnical Assessment and Design Advice for Proposed Foreshore Works and Sydney Fish Markets, Blackwattle Bay, Pyrmont, NSW*. Jeffery & Katauskas Pty Ltd, 31 August 2010, Ref: 24125SPRpt (JK 2010b)
- *Limited Phase 2 Environmental Site Investigation, Bank Street, Pyrmont NSW*. June 2011, RCA Australia Pty Ltd. (RCA 2011)
- *Limited Phase 2 Investigation, 5 Bank Street, Pyrmont NSW*. E3 Consulting Australia Pty Ltd. 16 July 2012. (E3C 2012a)
- *Stage 1 Preliminary Site Investigation, 1 Bank Street, Pyrmont NSW*. E3 Consulting Australia Pty Ltd. 27 July 2012. (E3C 2012b)
- *Phase 2 Environmental Site Assessment, 1 Bank Street, Pyrmont NSW*. 27 November 2012. Draft. CDM Smith Australia Pty Ltd. (CDM 2012a)
- *Long-term Environmental Management Plan, 5 Bank Street Pyrmont, NSW*. CDM Smith Australia Pty Ltd. 30 October 2012. (CDM 2012b)
- *Sydney Bays Precinct, Geotechnical Desktop Review*. NB00046-300-ESG-RP-001 Rev B, 15 August 2014. Jacobs Group (Australia) Pty Ltd, (Jacobs 2014)
- *Preliminary Site Investigation, Bays Precinct*. JBS&G Australia Pty Ltd, October 2014, Rev 1 (JBS&G 2014)
- *The Bays Precinct Urban Transformation Area – Environmental Site Assessment,* 18 November 2015, JBS&G Australia Pty Ltd, Rev 1 (JBS&G 2015)
- *Report on Due Diligence Contamination Assessment, Proposed Residential Development, 31-35 Bank St, Pyrmont.* Douglas Partners Pty Ltd, 28 July 2016, Rev 1 (DP 2016)
- *Contamination Investigation The Bays Precinct - Separable Portion 1, Blackwattle Bay, Pyrmont, NSW*, Environmental Investigation Services, Reference: E29245KletRev1-SP1, EIS (2017)
- *Factual Geotechnical Report to UrbanGrowth NSW on Geotechnical Investigation for Bank Street Commercial Wharf at 5-11 Bank Street Pyrmont, NSW*. JK Geotechnics, 28974SPRev2, 18 May 2017 (JK 2017a)

- *Revised Geotechnical Report to UrbanGrowth NSW on Geotechnical Investigation for Proposed Bays Market District at Blackwattle Bay & Wentworth Park, Pyrmont, NSW.* JK Geotechnics, 29245SrptRev2, 14 September 2017 (JK 2017b)
- *Environmental Site Assessment, the new Sydney Fish Market, 1A-1C Bridge Rd, Glebe NSW and part 56-60 Pyrmont Bridge Road, Pyrmont NSW*. JBS&G, 4 April 2019, Rev3 (JBS&G 2019a)
- *Remedial Action Plan*, *the new Sydney Fish Market, 1A-1C Bridge Rd, Glebe NSW and part 56-60 Pyrmont Bridge Road, Pyrmont NSW*. JBS&G, 4 April 2019, Rev3 (JBS&G 2019b)
- *Acid Sulfate Soil Management Plan*, *the new Sydney Fish Market, 1A-1C Bridge Rd, Glebe NSW and part 56-60 Pyrmont Bridge Road, Pyrmont NSW*. JBS&G, 4 April 2019, Rev2 (JBS&G 2019c)
- *Data Gap Assessment, the new Sydney Fish Market, 1A-1C Bridge Rd, Glebe NSW. JBS&G, 12 March 2019 (JBS&G 2019d)*
- *Environmental Site Assessment, the Sydney Fish Market, Corner of Pyrmont Bridge Road and Bank Street, Pyrmont, NSW*. JBS&G, 17 July 2019 (JBS&G 2019e)

4.1 JBS&G (2014) Bays Precinct (Phase 1) Preliminary Site Investigation

JBS&G was engaged by UrbanGrowth NSW (UGNSW) to complete a phase 1 preliminary site investigation covering all 7 Precincts of the Bays Precinct site to commence a staged site contamination evaluation process. It was understood that the evaluation would contribute to a UGNSW driven concept plan for rezoning and future mixed use redevelopment of under-utilised foreshore land for mixed purposes. No surface or sub-surface intrusive investigations were undertaken for this assessment.

The objective of the Phase 1 assessment was to identify and document the potential for contamination concerns at the site based on available historical and current site use information in conjunction with available previous investigation information as available at the time of the engagement. A range of previous site investigation reports discussed in the following sections were included in the phase 1 assessment review.

The outcomes of the phase 1 assessment included a Conceptual Site Model (CSM) which identifies: known and potential sources of impact and constituents of potential concern including the mechanism(s) of impact; potentially affected media (soil, sediment, groundwater, surface water, indoor air and ambient air); human and ecological receptors; potential and complete exposure pathways; and potential preferential pathways for migration. For the Blackwattle Bay Precinct, the outcomes of this investigation are further discussed and refined in Section 5 providing for the incorporation of information from additional previous site investigation reports as reviewed herein, or portions thereof.

4.2 JBS&G (2015) Bays Precinct Targeted Site Investigation

UGNSW engaged JBS&G to complete a range of site contamination assessment activities, inclusive of review of existing available reports and targeted supplementary assessment to provide a basis for preparation of a site wide remedial concept plan (SWRCP) document as per the adopted UGNSW Management Strategy for Impacted Land within the Bays Precinct. The site with an area of approximately 80 Ha of land, in addition to 94 Ha of water beyond the scope of the current site.

The broadscale investigation works were part of a staged strategy designed to result in the delivery of a site wide remedial concept plan (SWRCP) to support the future rezoning application for the Bays Precinct Urban Transformation Program. The objective of the investigation program documented herein was to supplement the separate evaluation of existing data collected by JBS&G and others (as discussed herein) with limited field investigation data in order to confirm the absence of significant

and/or widespread contamination issues at the site and to provide sufficient data to support the preparation of the SWRCP.

Specific to the Blackwattle Bay Study Area portion of the Bays Precinct, the scope of work comprised: implementation of a targeted site investigation program including soil, groundwater, soil vapour, landfill gas and acid sulfate soil sampling as per an approved Sampling Analysis and Quality Plan (SAQP); comparison of levels of environmental constituents against relevant guidelines; and preparation of a limited Environmental Assessment (ESA) report.

The soil sampling program comprised the collection of soil samples from boreholes advanced by push tube at 9 locations within the Blackwattle Bay Study Area, with sampling and subsequent analysis of representative samples for identified COPCs from all 9 locations and sampling/analysis for ASS characterisation at 1 location. Assessment of groundwater conditions comprised the installation of two new groundwater monitoring wells and sampling/ analysis of the 2 new wells in addition to 6 existing monitoring wells. Soil vapour assessment was also completed at 6 locations. The documented sampling locations are shown in **Figures 3A** to **3F**.

Identified COPCs in soil comprised: heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), volatile organic compounds (VOCs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs) and asbestos in soil. Groundwater COPCs comprised: heavy metals, TRH/BTEX, VOCs, PAHs, total nitrogen and phosphorus. Soil vapour samples were analysed for VOCs. The ground gas assessment was based upon field measurements, whilst representative samples for ASS where analysed for sPOCAS and chromium reducible sulfur. A summary of the reported sample laboratory analysis results are provided in Table B3 (**Appendix A**).

Adopted site assessment criteria were based upon the existing land uses, comprising a combination of commercial/industrial and recreational/public open space land uses. In light of the future permissible land uses nominated in the rezoning proposal, reference was also made to scenarios including a residential with minimal soil access land use. Relevant thresholds for soil and soil vapour were derived from relevant investigation and/or screening levels presented in NEPC (2013). Groundwater criteria were derived with reference to the NSW EPA's endorsed environmental values for the Parramatta River catchment in addition to drinking water/recreational waters as required by DEC (2007[9]), resulting in the adoption of ANZECC (2000) trigger values for ecological risk and NHMRC (2008[10]) and NHMRC (2011; 2018[11]) guidance for recreational exposure. Ground gas data were assessed via comparison with EPA (2012[12]). Acid sulfate soil data was assessed via comparison with trigger values presented in ASSMAC (1998[13]).

Consideration was also given to assumed background concentrations appropriate for inner Sydney commercial/industrial land uses in evaluating the data, particularly in areas with fewer valid data points, such that the potential for significant contamination other than that identified during the investigation may be evaluated.

A data quality validation assessment considered that procedures implemented for the assessment were suitable to demonstrate the collected and reported data is suitable to address the objectives of the assessment, inclusive of supporting the development of a conceptual site model and future remedial strategy for the broader site.

[9] *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*. Department of Environment and Conservation NSW, March 2007 (DEC 2007)

[10] *Guidelines for Managing Risks in Recreational Water*. Australian Government National Health and Medical Research Council, February 2008 (NHMRC 2008)

[11] *National Water Quality Management Strategy, Australian Drinking Water Guidelines 6, 2011*. Australian Government National Health and Medical Research Council, Version 3.5 Updated August 2018 (NHMRC 2018)

[12] *Guideline for the Assessment and Management of Sites Impacted by Hazardous Ground Gases*, NSW EPA 2012 (EPA 2012)

[13] *Acid Sulfate Soil Manual*. Acid Sulfate Soil Management Advisory Committee, ASSMAC, 1998 (ASSMAC, 1998)

The completed field works identified the presence of fill material underlying current ground levels within the Blackwattle Bay Study Area to depths of approximately 1 m to 4 m bgs. The fill typically comprised gravelly sand and crushed sandstone with inclusions of sandstone, brick, ash, wood, metal, glass and concrete. The fill observed in this precinct was underlain by natural sand/clayey sand material and sandstone. Fill material consistent with a black coal tar type substance was noted at sampling location HHBH04 at a depth of approximately 3.0 m bgs. Other than this location, there was no significant evidence of staining observed within the soil/fill profile during the field works, However, hydrocarbon odours were noted in fill and residual soils at sampling locations within the Fish Market portion in proximity to the identified UST locations.

Groundwater was generally grey-brown and ranged from clear to moderately turbid. Hydrocarbon odours and a sheen were present in groundwater at a number of locations within the Fish Markets site. However, field evaluation did not identify the presence of measurable non-aqueous phase liquid (NAPL) at any of the sampled monitoring wells. Standing groundwater levels were between 1.075 m bgs and 3.549 m bgs at the 8 sampled locations within the Blackwattle Bay Study Area. Review of the field parameters recorded for the samples at both precincts indicate that the groundwater is brackish to saline, low in oxygen and with a pH close to neutral in all wells.

Whilst no detections of methane gas were identified, low concentrations of carbon dioxide were identified in a number of the gas monitoring wells. In accordance with the EPA (2012) methodology, a gas screening value (GSV) of 0.021 L/h CO_2 was adopted as worst case for the Precinct. This GSV value falls within 'characteristic gas situation 2', comprising low risk conditions.

Laboratory analysis results for soil identified the presence of TRH >C_{10}-C_{16} at two sampling locations exceeding the adopted criteria in localised fill material and natural soils adjacent to the USTs at the fish markets. Elevated levels of benzo(a)pyrene and benzene were also detected at a number of groundwater sampling locations within the existing fish markets site, when considered against the adopted site assessment criteria. Limited characterisation of natural soils was also completed, which confirmed the occurrence of potential ASS conditions above the ASSMAC (1998) trigger values.

The report presented the following conclusions with regard to the Blackwattle Bay Study Area:

- Significant widespread soil contamination conditions were not identified at soil sampling locations. However, the assessment has confirmed specific areas where contaminant concentrations in soil will require further consideration, in conjunction with other existing site soil characterisation data in relation to the suitability of these areas for future uses.
- Investigation of groundwater did not identify significant widespread contaminant conditions at the implemented sampling locations. However, as with the soil conditions, groundwater characteristics at a number of locations will require further evaluation in conjunction with existing groundwater data to evaluate the need for ongoing monitoring and/or management of groundwater conditions.
- Volatile contaminant concentrations in soil, soil vapour and groundwater samples analysed for specific locations within the Blackwattle Bay Study Area did not identify indications of significant widespread volatile contaminant impacts that may be indicative of an unacceptable risk to human health in relation to the current or future potential land uses.
- The potential for ground gas conditions was assessed at investigation groundwater monitoring wells using a landfill gas meter. Based on the recorded field data, a conservative estimate of the Gas Screening Value (GSV) places conditions within the characteristic gas situation 2 category. As such, further assessment of potential ground gas conditions should be completed as part of future detailed site assessment activities where buildings and/or other infrastructure are proposed to be constructed.

- Limited sampling and assessment of alluvial soil conditions confirmed the occurrence of potential ASS (PASS) conditions that will require further consideration and where required, development and implementation of acid sulfate soil management measures during future disturbance of the alluvial soils.

This report recommended that the investigation data presented in this document be further evaluated in combination with the existing site contamination investigation data identified to be of suitable quality such that broader decisions could be made with respect to the potential requirements for management and/or remediation future development areas across the Precinct. Subsequent to the outcomes of this evaluation, it was anticipated that sufficient site characterisation information was available to support the development of a high level strategy for future management of contamination risks at the site.

4.3 Blackwattle Bay Study Area Individual Premises Assessment Reports

4.3.1 Environmental Assessment, Sydney Fish Markets (ICF 1994a)

ICF (1994) completed an environmental site assessment for two portions of the Blackwattle Bay Precinct on behalf of City West Development Corporation, comprising Area A, being the existing Sydney Fish Market (SFM) site and Area B, comprising an area to the north of the fish market site, occupied by a seafood company and a concrete batching plant. This report was later used as to assess baseline conditions at the time of the start of lease (by SFM) in 1994. The scope of works included a review of available background information, a site inspection, site history review, asbestos survey and an intrusive program to assess soil and groundwater conditions underlying the two areas of the site.

Fish Markets Area A

At the time of the assessment, the site was used as a wholesale fish market with some retail outlets and associated carparking facilities. The main market building was reported to have previously been operated by Newsprint Storage Pty Ltd who were involved in the warehousing of paper. The building was refurbished between 1987 and 1989 for use as the fish markets.

Shell occupied the site prior to the construction of a portion of the site for use as fish markets in 1962 in which it was reported that Shell used the site as a transport and fuel depot. However, there were no records indicating the existence or location of petroleum storage tanks. In addition to the depot, small petrol station was maintained at the original fish market site. The petrol station included bowsers, an above ground storage tank (AST) for diesel and underground storage tanks (USTs) for petrol. The bowsers and AST were reported to have been removed, however the USTs remained in-situ at the time of the assessment.

No dangerous goods were reported to be stored at the site during the time of the assessment, excluding small quantities of detergents and lubricating oil. An R22 (freon) refrigerant plant was noted at the site which was reported to be regularly inspected by WorkCover. The waste generated at the site at the time of the assessment was identified to include fish offal, wash-down water, packaging material and office waste.

Potential contamination of the site as caused by historical site activities was identified to include potential petroleum leaking fuel storage tanks and the presence of an electrical sub-station as a potential source of PCB contamination to soil and groundwater. The site usage at the time of the assessment was not considered to have the potential to cause contamination to soil or groundwater, however it was identified that there was a potential for asbestos containing materials within the older buildings at the fish markets.

Seafood Premises and Concrete Batching Plant – Area B

ICF reported that a review of 1974 Sydney Planning Scheme base map indicated that the area to the north of the fish markets was occupied by a Shell service station, a Sydney Council depot, Colonial

Sugar Refining Company (CSR) warehouses and a seafood distributor. The western portion of Area B was occupied by a former coal loader and a Pioneer Concrete plant. Plans dated September 1975 indicated this area was then occupied by Hymix Concrete, Australian Portland Cement and two seafood distribution companies. No records associated with the former service station were able to be obtained from Shell during the assessment. The western portion of Area B, occupied by Pioneer which it was reported had operated at the site since the early 1970s. Two underground storage tanks (USTs) for petrol and diesel were understood to be situated at this site. Two hundred litre drums of hydrochloric acid, oil and concrete additives were also stored at the site, associated with operational activities.

The potential for site contamination was considered to be associated with the historic and current storage and dispensing of fuel, in addition to the occurrence of an older electrical substation within the Hymix site. There was also the potential for the occurrence of asbestos associated with older buildings located at the site.

Based on the above findings, ICF recommended implementation of a Phase II environmental assessment to delineate the potential for soil and/or groundwater contamination, primarily in relation to the USTs and sub-stations, in addition to assessment of the nature of fill material at the site. An inspection of the potential for the presence of asbestos in older buildings at the site was also recommended.

4.3.2 Phase II Environmental Assessment, Sydney Fish Markets – Area A (ICF 1994b)

ICF (1994) completed an environmental site assessment for the Fish Market site, referred to as Area A (ICF 1994a) to evaluate the nature, degree and extent of contamination associated with historical use of the site.

The scope of work was reported to have included an asbestos in buildings survey, a geophysical survey to assess potential UST locations, a soil/groundwater sampling program and subsequent laboratory analysis of collected samples. The field investigation included the installation of 7 soil boreholes to depths of 0.35 m to 3.45 m bgs, comprising 4 locations near the USTs, 1 near a substation and 2 at arbitrary locations to assess the fill material. Three boreholes were completed as groundwater monitoring wells. The asbestos survey was limited to 'older' buildings located at the Fish Market site.

Twelve soil and 3 groundwater samples were submitted for lab analysis for a range of COPCs including total petroleum hydrocarbons (TPH), BTEX, PCBs and/or heavy metals. The results were compared to the thresholds presented in ANZECC (1992) Guidelines for Untreated Drinking Waters (ANZECC, 1992a[14]) and ANZECC (1992b[15]), or the Dutch B criteria[16].

The subsurface conditions underlying existing pavements were reported to comprise fill material characterised as sand, gravel, sandstone fragments and building rubble with some ash material that extended across the extent of the site at depths ranging from 0.5 to 2.5 m bgs. Sandstone bedrock was encountered at a number of sampling locations underlying the fill material. Groundwater was identified at depths of 0.7 m to 1.5 m bgs, moving in a south to south-west direction toward Blackwattle Bay.

Hydrocarbon odours were noted within fill materials located in close proximity to the USTs. The results of analytical testing identified the presence of TPH/BTEX in soil impacts at several sampling

[14] *Australian Water Quality Guidelines for Fresh and Marine Waters*. National Water Quality Management Strategy. Australian and New Zealand Environment and Conservation Council, November 1992 (ANZECC 1992a)

[15] *Guidelines for the Assessment and Management of Contaminated Sites*, ANZECC, January 1992 (ANZECC 1992b)

[16] Full reference for version available in 1994 not available. Later version: *Ministerial Circular on Target and Intervention Values for Soil Remediation*. Ref: DBO/1999226863, The Netherlands Ministry of Housing, Spatial Planning and the Environment, 2000 (VROM 2000)

locations in addition to TPH in groundwater at one sampling location. Elevated concentrations of copper, lead and mercury were also identified at one sampling location.

The presence of bitumen and ash within fill materials was further noted to indicate the potential presence of polycyclic aromatic hydrocarbon (PAHs) impacts, however no confirmatory laboratory testing was conducted.

The asbestos in buildings inspection confirmed the presence of asbestos containing materials including electrical switch boards and vinyl tiles in buildings via laboratory analysis, whilst fibre board suspected of containing asbestos was also identified.

ICF recommended that the USTs be removed along with impacted soil. With regard to the proposed use of the site and its paved nature, it was considered that there were no other significant contamination risks to future site occupiers or visitors. Given the age of these reports, this data has not been included in the summary laboratory assessment tables included in **Appendix A**.

4.3.3 Contamination Assessment, 31-35 Bank Street Pyrmont (GHD 1997)

GHD was engaged by Holman Webb Solicitors to investigate potential site contamination conditions at an existing 3000 m^2 commercial property situated at 31-35 Banks Street, Pyrmont. The objectives of the assessment were to identify and characterise the potential for site contamination associated with historical and current site uses and assess the potential impacts of such to human health and the environment.

The scope of work included a desktop assessment of historical site use, implementation of a soil and groundwater site sampling program, laboratory analysis of samples and assessment of the results with consideration to NSW EPA endorsed site assessment criteria.

A review of historical site records indicated that the site was owned by office bearers of the Australian Gas Light Company (AGL) between 1933 and 1985. The 1933 title noted coke screening activities. In 1958 the site was leased to the Shell Company of Australia Ltd for use as a service station. In 1985 the site was acquired by N.Stephenson Pty Ltd for use as a food warehousing and storage facility. Review of historical aerial photographs indicated the northern portion of the site was occupied by infrastructure consistent with a service station during the period it was leased to Shell. By the mid 1980s, a large warehouse type structure had been constructed on the southern portion of the site. GHD reported that the bowsers remained visible in the northern portion of the site in the 1994 aerial photograph. Council development records indicate the southern portion of the site was likely used as a storage depot and garage for a range of construction equipment and possibly vehicles until the mid-1980s when a warehouse and cold store were constructed.

At the time of the GHD inspection, the service station building was located in the north-central portion of the site. A modern two storey office building adjoined the south-west portion of the former service station building and a cold store warehouse adjoined the south-east portion of the building. The service station workshop had been converted to office accommodation. A carpark area was located beneath the office building, following excavation works, that included the removal of former USTs formerly located beneath the driveway ramp footprint. There was uncertainty at the time as to whether all USTs and associated fuel infrastructure had been removed.

Current use of the site comprised a distribution centre (delivery, storage and dispatch) for frozen food products and associated office administration activities. A small water treatment plant was situated in the north-central site portion, with discharge connected to the sewer. The northern portion of the site was reported to be a paved vehicle movement/parking area. Access to the site was from Banks St to both the south and north of the former service station building, with the southern access at street level, whilst an access ramp accessed the lower, southern portion of the site from the northern driveway off Banks St. The cold store building was at least partially suspended, with access from the Blackwattle Bay Study Area waterfront available. The area beneath

the suspended portion comprised unpaved exposed fill material characterised as crushed sandstone with layers of ash and slag evident in some locations. A timber wharf extended from the waterfront within this area.

Based on the site evaluation, potential areas of concern were related to historical use of the northern portion as a service station and the presence of potentially contaminated fill material within at least the south and central site portions. The field works included the installation of 6 drill rig installed soil bores and an additional 7 locations completed using hand tools. Two groundwater monitoring wells were installed (one at the up-gradient boundary, one at the down-gradient). Samples were subsequently analysed for COPCs including TPH/BTEX, PAHs, OCPs/OPPs, PCBs and phenols. Laboratory analysis results were considered with regard to the site criteria for medium density residential use presented in NEHF (1996[17]), and NSW EPA (1994) with regard to human health and ANZECC (1992) criteria for environmental protection.

The laboratory analysis results identified the presence of elevated levels of lead and PAHs in fill material at the site, in addition to TPH/BTEX in fill material in proximity of the historic fuel facilities. Groundwater was only identified in the down-gradient well, with concentrations all less than the adopted site assessment criteria.

Based upon the results, GHD considered that remediation of the TPH/BTEX fuel related impacts should be undertaken. With regard to the heavy metals and PAHs, further consideration of future land uses would be required to establish whether these presented an unacceptable risk to human health. Based on the groundwater data, none of the contaminants were considered to present an unacceptable risk to the environment. Given the age of these reports, this data has not been included in the summary laboratory assessment tables included in **Appendix A**.

4.3.4 Umwelt 2008 Review of Environmental Factors Pier Demolition 41-45 Bank St

This report prepared for Hymix (Australia) Pty Ltd presents a review of environmental factors prepared as part of the approvals process for proposed demolition works associated with a condemned pier adjacent to the concrete batching plant at 41-45 Bank St, Pyrmont. The pier occupied an area of approximately 87 m in length extending into Blackwattle Bay Study Area by 4-6 m in width.

The report identified that the original structure was built in approximately 1933 for Ready Mixed Concrete P/L associated with importation of bulk cement and aggregate materials. The pier was considered to be at the end of its working life and as such required removal.

A marine sediment contamination assessment completed by Douglas Partners Pty Ltd (DP 2008[18]) was presented within this document. This assessment included the collection of 5 sediment samples from within the footprint of the pier and 5 additional samples from within the bay. The reviewed copy of the report had only a partial plan of completed sampling locations and as such, the sampling locations have not been presented within **Figure 3** (and **3E**).

Samples were collected via insertion of PVC tubes into the sediment by commercial divers to a depth of approximately 0.3 m below the sediment bed. The surface material typically comprised dark grey silty sand and sandy silt material. Some clay material and organic material was present in a number of locations, whilst those closest to the shoreline identified gravel inclusions.

Samples were subsequently analysed for a range of potential contaminants of concern (COPC) including heavy metals, cyanide, PAHs, TRH, BTEX, PCBs, OCPs, phenols, tributyltin (TBT) and volatile chlorinated hydrocarbons (VCH). The laboratory analysis results were compared to the Interim

[17] *Health Based Soil Investigation Levels*. National Environmental Health Forum, P. Imray and A.Langley, National Environmental Health Forum Monographs, Soil Series No. 1, (NEHF 1996)

[18] *Report on Marine Sediment Contamination Assessment – Hymix Wharf Blackwattle Bay, Pyrmont*. Douglas Partners Pty Ltd, June 2008, Ref: 45560 (DP 2008)

Sediment Quality Guideline (ISQG) screening/trigger values presented in ANZECC (2000) where contaminants are represented in addition to adoption of EPA (1994) soil quality criteria for TRH in the absence of values in ANZECC (2000) and adopted of Netherlands VROM (1999[19]) values for phenols. In addition, the sample analysis results were also compared to measured background concentrations present more broadly within Blackwattle Bay. DP presented an evaluation of QA/QC and considered that the obtained data was of an acceptable standard for the assessment.

A summary of the reported sample laboratory analysis results are provided in Table B3 (**Appendix A**). With consideration to the QA/QC results reported in DP (2008), this assessment data as summarised is considered adequately reliable for the purposes of developing a conceptual site model and future remedial strategy for the broader site.

Concentrations of heavy metals including arsenic, copper, lead, mercury and zinc in addition to organic compounds – TRH (C_{14}-C_{36}) and PAHs were reported in samples obtained within the site as well as those in the broader Blackwattle Bay. It is noted that no correction for organic carbon concentrations within the samples (ie. normalisation) was undertaken with the laboratory data.

Sample analysis results were reported to identify TRH (C_6-C_{14}), BTEX, phenol, cyanide, PCB and VHC compound contaminant concentrations to be less than the laboratory limit of reporting (LOR) and below all adopted assessment criteria. Concentrations of chromium and OCP compounds were all below the adopted criteria.

Based on the sampling and analysis results, DP considered that the identified contaminant concentrations in sediment were consistent with those encountered more broadly within Blackwattle Bay and the upper Parramatta River. On this basis, the contamination was not directly attributable solely to historical use of the pier or adjoining industrial property and as such it was noted that removal of sediment during pier removal activities would not achieve any discernible improvement in the contamination status of the foreshore area. Notwithstanding, it was recommended that care should be taken to minimise disturbance of the sediments which are contaminated during the pier removal activities.

4.3.5 PB (2009) Blackwattle Bay Maritime Precinct Environmental Site Investigation

This report prepared for Maritime NSW was completed for an area comprising the former coal loader and adjacent wharf, situated between the Hanson Concrete batching plan site and the Sydney Fish Markets. The site comprised a land portion of approximately 3422 m^2 formally identified as Lots 3 and 4 DP1064339 and an adjoining water portion of approximately 17 923 m^2 identified as Part Lot 107 DP1076596.

The objective of the investigation was to provide an evaluation of potential contamination concerns at the site with respect to future development of the site, with a view to identifying any potential remedial requirements and/or constraints to future development as a result of soil, sediment and/or groundwater contamination.

The scope of works included a desktop assessment of historical site use and review of previous assessment reports; a soil sampling program including 7 soil boreholes, installation of 3 monitoring wells and sediment sampling at 18 locations; laboratory analysis of selected samples and assessment of the investigation data.

PB reviewed a number of previous reports including a number of site contamination reports prepared by others that have not been sighted by JBS&G including, AGC Woodward Clyde in 1995, a SKM 1999 geotechnical investigation report, a Patterson Britton 2000 sediment assessment, a

[19] Target values and intervention values for sediments as presented in *Environmental Quality Standards in the Netherlands*. Ministry of Housing, Spatial Planning and the Environment (VROM), the Netherlands (1999) (VROM 1999)

Douglas Partners 2000 geotechnical investigation report and a Coffey 2001 geotechnical investigation report. In summary, PB indicated that these reports identified the following:

The land portion of the site was formerly part of Blackwattle Bay (Swamp) Cove and was reclaimed during the period from 1836 to 1891.

The former Coal and Allied Operations Ltd facilities comprised workshops and fuel storage facilities including 5 underground storage tanks (USTs) that had been decommissioned and removed in approximately 1995. These were understood to previously have been used to store and dispense petrol, distillate, racing fuel, mineral spirit and mineral oil. During the decommissioning/remediation activities significant quantities of asbestos containing materials (ACM) sheeting were removed from the site.

The UST removal activities were reported to include the excavation and off-site removal of TPH impacted soil (fill), however heavy metal contaminated fill material remained at the site at depths of up to 4 m in addition to areas of PAH impacted fill.

The subsurface conditions on the land portion were identified as poorly compacted, unregulated fill material (including sandstone fragments up to boulder size) to depths of 7 m below ground surface (m bgs). Within the bay, recent sediments tended to comprise silt or silty clay of very soft nature with inclusions of gravel and coal underlain by consolidated marine sediments of clay and interbedded sand to approximately 6 m, which was turn underlain by clayey sand/sandy clay to depths of between approximately 10 m and 21 m, where sandstone bedrock was identified.

Assessment of sediments had previously identified the presence of elevated concentrations of heavy metals, polycyclic aromatic hydrocarbons (PAHs), Tributyltin (TBT) and were characterised as acid sulfate soil (ASS).

The PB site investigation works included the installation of 7 boreholes to depths of up to 6.5 m bgs at locations as shown in **Figure 3A**. Samples were subsequently analysed for heavy metals, total petroleum hydrocarbons (TPH), monocyclic aromatic hydrocarbon (BTEX) compounds, PAHs, asbestos, organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs). Given the drilling conditions, most samples were collected from solid flight augers as large cobble inclusions limited use of push tubes. Eighteen sediment samples were collected via either drop core or hand collected as surface sediment samples by a professional diver. Groundwater monitoring wells were installed at three locations and an existing monitoring well located across Bridge Rd was also sampled to provide an up-gradient comparison sample. Groundwater samples were collected using disposable bailers and analysed for heavy metals, TPH, BTEX and PAHs.

A summary of the reported sample laboratory analysis results is provided in Tables (**Appendix A**).

Laboratory analysis results were assessment via comparison with health based assessment criteria for commercial land uses as presented in NEPC (1999), EPA (1994) (for TPH/BTEX) for soil; marine ecological trigger values and recreational thresholds presented in ANZECC (2000) for groundwater; and ISQG low and high thresholds for sediments in ANZECC (2000). A PB Data Quality Indicator (DQI) assessment indicated that the data was suitable for use for the purposes of the project, however it was noted that the heterogeneous nature of the fill material should be considered in interpreting the results.

Concentrations of TPH (C_{10}-C_{36}) in a number of fill material obtained from sampling locations within the former coal loader area at depths of between 0 m and 0.4 m bgs were reported to exceed the adopted site soil assessment criteria.

Soil heavy metal and individual BTEX compounds concentrations in analysed samples were less than the adopted site assessment criteria. Concentrations of total PAHs, Benzo(a)pyrene, TPH, OCPs, PCBs, and asbestos in soil samples were all reported to be less than the laboratory limit of reporting (LOR) and below the adopted site assessment criteria.

In groundwater, heavy metal concentrations with the exception of zinc were also reported at concentrations less than the assessment criteria. Zinc concentrations were reported in the up-gradient monitoring well at 186 µg/L, and at one sampling location on site at 41 µg/L, when compared to the ANZECC (2000) trigger value of 15 µg/L. Concentrations of individual PAH compounds phenanthrene and benzo(b)&(k)fluoranthene were identified at levels above the LOR, adopted as the site assessment criteria. Groundwater sample analysis identified TPH/BTEX concentrations less than the adopted site assessment criteria.

Various sediment samples were identified to have individual heavy metal concentrations above the interim sediment quality guidelines (ISGQ)-low criteria, with a significant number of samples also exceeding the ISGQ-high threshold for copper, lead, zinc and mercury. Total PAHs, benzo(a)pyrene and TPH (C_{10}-C_{36}) concentrations in the majority of sediment samples also exceeded the ISGQ-low criteria, with several benzo(a)pyrene results, exceeding the ISGQ-high threshold. TBT concentrations were reported above the ISGQ-low criteria for five surface sediment samples.

The distribution of sediment contamination indicated the presence of more heavily impacted sediment closest to the former coal unloading area. There also appeared to be a relatively even distribution of contamination throughout the sediments to a depth of 1.8 m below current bed levels. This was considered to potentially be a result of mixing associated with past bay dredging activities and/or disturbance associated with vessel movements. It was noted that average concentrations of contaminants other than PAHs were generally less than those reported for Port Jackson by Birch and Taylor (2004[20]).

With consideration to the QA/QC results reported in PB (2009), the reported data is adequately reliable for the purposes of developing a conceptual site model and future remedial strategy for the broader site. It is noted that high levels of contaminant concentration variation were identified in the intra-lab and inter-lab analysis results for sediments and to a lesser degree the soils. This was considered to be a result of the difficulties associated with obtaining representative samples of heterogeneous fill/ sediment material and as such, the variation in contaminant conditions should be considered in drawing conclusions with respect to the potential environmental risks at the site.

Based on the investigation findings, PB considered that no specific management and/or remediation of soil or groundwater would be required for ongoing commercial use of the site with minimal excavation activities. However, if a more sensitive land use and/or significant excavation works were proposed, further assessment of petroleum hydrocarbon in soil impact and development of an acid sulfate soil management plan (ASSMP) would be necessary. Should development activities be likely to significantly disturb the impacted sediments, appropriate management measures would be required to be implemented to manage the potential environmental risks. In addition, an ongoing environmental management plan (EMP) was recommended for the sediments to address the potential human health and ecological risks associated with the impacted sediments.

4.3.6 NAA (2010) Bank St Soil Contamination Investigation

This report assessed a parcel of land off Bank Street, Pyrmont beneath the Anzac Bridge overpass. The site was reported to have an area of approximately 10,000 m^2 (although the sampling activities were limited to an area of approximately 1600 m^2 in the middle of the site). The objective of the works was to evaluate potential contamination conditions with respect to planned redevelopment of the site to include a boat ramp (public open space).

The scope of works included 8 test pit locations to a maximum of 1.3 m bgs; sampling of representative soil strata; a laboratory analysis program; data assessment and documentation of the assessment results. Selected soil samples were analysed for TPH, BTEX, heavy metals, volatile

[20] *The Contaminant Status of Sydney Harbour Sediments, A Handbook for the Public and Professionals*. G Birch and S E Taylor. (Birch and Taylor 2004)

organic compounds (VOCs), PAHs and asbestos in soil. Assessment criteria adopted from NEPC (1999) for parks and recreational open space and EPA (1994) thresholds for TPH/BTEX were used for evaluation of the investigation data. The requirement to consider aesthetics was also noted.

The test pits locations as shown in **Figure 3B** identified the presence of rubble/sand fill material with sandstone gravel and/or concrete rubble fill, roadbase gravel and subsurface asphalt pavements overlying sand/sandstone strata. No obvious signs of contamination were noted on the ground surface at the time of the inspection.

A summary of the reported sample laboratory analysis results are provided in Table B1 (**Appendix A**).

The laboratory analysis results identified soil TPH (C_{10}-C_{36}), PAHs and benzo(a)pyrene concentrations in fill material at several sampling exceeded the adopted criteria. The elevated TPH results coincided with samples with the highest PAH concentrations, indicating the TPH may be attributable to PAHs rather than petroleum hydrocarbon impacts. These samples were all encountered at 0.3 m to 0.6 m bgs at the time of the investigation.

Heavy metals in soil concentrations were all less than the adopted site criteria whilst BTEX, VOC and asbestos concentrations in all analysed samples were less than the laboratory LOR and below the site assessment criteria.

Based on the results, NAA considered that management of the identified site contamination concerns would be required for the site to be considered suitable from a contamination view point for use as a boat ramp (public open space). It was recommended that subsurface materials be excavated, sorted into building/demolition rubble, roadbase, sandstone fill etc. and characterised as suitable for on-site reuse, or otherwise disposed of from the site.

Given the reviewed report copy did not include detailed sample logs, laboratory sample receipt advice or chain of custody documentation (COCs). Further the field QA/QC program was very limited. On this basis, JBS&G consider that the NAA (2010) data would be suitable to provide an overall understanding of site conditions, however should not be solely relied upon in drawing conclusions with respect to land use suitability and/or requirements for remedial actions within the relevant site portion.

4.3.7 RCA (2011) Bank St Limited Phase 2 Investigation

RCA were engaged to complete a limited phase 2 investigation of a parcel of land off Bank Street, Pyrmont beneath the Anzac Bridge overpass. This site incorporated the footprint of the previous NAA (2010) investigation, in addition to an extended area between Bank St and Blackwattle Bay to the south-east comprising a total footprint of approximately 5600 m^2 (this referenced site size is likely more defensible than the 10,000 m^2 noted by NAA given the inclusion of a referenced survey drawing). The objective of the works was to characterise the contamination status of the site prior to the commencement of earthworks to address due diligence and work health and safety (WH&S) purposes.

At the time of the field investigation the site had been divided into two sections comprising a construction compound for bridge maintenance activities in the north-west and storage/access for dragon boat users in the south-east. RCA indicated that the bridge maintenance contractors proposed to complete minor earthworks to re-grade the compound area, including adjustment of site levels and construction of a boat ramp.

The RCA scope of work included the installation of nine test pits, primarily to the south-east of the previous NAA investigation locations as shown in **Figure 3B**, to provide for sampling of representative soil strata; a laboratory analysis program; data assessment; and documentation of the assessment results. Selected soil samples were analysed for TRH, BTEX, heavy metals, PAHs and TBT. In addition, one composite sample of surface soils was prepared and analysed for OCPs and

PCBs. Assessment criteria were adopted from NEPC (1999) for parks and recreational open space and EPA (1994) thresholds for TPH/BTEX to evaluate the investigation data.

The completed sampling locations generally extended only 0.3-0.4 m bgs and encountered fill material of clayey sand with concrete/tile/brick inclusions and gravels. Natural soil was reportedly identified in one sampling location extended through the fill material, with dark brown/black clayey sand soil encountered at a depth of 0.6 m bgs that extended to the completed test pit depth of 0.8 m bgs (JBS&G consider that this material is likely to be fill material rather than natural soil).

A summary of the reported sample laboratory analysis results is provided in Table B1. Review of the QA/QC assessment indicated that the data as summarised is suitable to be adequately reliable for the purposes of developing a conceptual site model and future remedial strategy for the broader site.

The laboratory analysis results identified soil TPH (C_{10}-C_{36}) concentrations in one sample exceeded the adopted criterion, this material was also reported to have highly elevated levels of total PAHs (2000 mg/kg) and benzo(a)pyrene (120 mg/kg). This material was reported by RCA to comprise dark brown/black 'natural' clayey sand soil (likely fill material). Additional fill material samples were also identified to have total PAH and/or benzo(a)pyrene concentration above the adopted assessment criteria. All individual heavy metals concentrations were less than the adopted site criteria, with the BTEX, TPH (C_6-C_9), OCPs, PCBs and TBT concentrations reported to be less than the laboratory LOR and less than the guidelines.

RCA recommended that capping of the impacted material be implemented to provide a complete exposure barrier between future site users and the impacted material such that the site could be considered suitable from a contamination viewpoint for the proposed use. In addition, a site EMP was recommended to address worker exposure during site activities.

JBS&G note that no evaluation of potential risks to the environment of the identified TPH/PAH impacted 'natural' soil, in particular to the adjoining Blackwattle Bay ecological receptor, was completed as part of this assessment.

4.3.8 E3C (2012a) Limited Phase 2 Investigation 5 Bank St Pyrmont

E3 Consulting (E3C) was engaged by NSW Roads and Maritime (RMS) to undertake a limited phase 2 investigation of a land parcel known as 5 Bank Street Pyrmont. The reviewed report documents additional investigation works completed within the portion of land consistent with that identified and assessed in NAA (2010) and RCS (2011). The reported objective of the E3C works was to address data gaps from these previous site assessments to evaluate the potential need to complete remediation works such that the site could be considered suitable for the proposed recreational use and/or whether the contamination could be managed via implementation of a long term EMP.

At the time of the investigation activities, the site had been divided into two areas, the northern portion being a fenced off area in use as a construction compound for the Bridge Solutions Alliance (BSA) associated with maintenance of the Anzac Bridge. The southern portion of the site was undergoing construction works for the proposed use of the site as a dragon boat equipment storage and launch area.

The scope of this investigation included installation of three additional boreholes and their conversion into monitoring wells; sampling of soil and groundwater; and subsequent laboratory analysis for targeted contaminants of concern. Selected soil samples were analysed for TPHs, BTEX, PAHs and heavy metals and some were also analysed for OCPs and PCBs. Groundwater samples were analysed for TPH, BTEX, PAHs and heavy metals. Laboratory analysis results were compared with the previously adopted criteria (parks and public recreational open space, NEPC 1999) for soils and ANZECC (2000) ecological thresholds for groundwater. The completed sampling locations are presented in **Figure 3B**.

The field investigation was reported to have encountered generally gravelly sand fill material with crushed sandstone gravel. At one location (BH1) in the south-east most site extent, 'black tar staining' and a slight petroleum hydrocarbon odour were noted. Gravelly sand fill material was identified to extend to depths of between 0.75 m to 4.05 m bgs. At several locations, some fragments of slag and tarry material were observed. Natural gravelly, clayey and silty sand soils underlay the fill material and were in turn underlain by sandstone bedrock. No staining or odours were noted in the natural soil/rock profile. No standing groundwater was observed by E3C at sampling location BH01 installed to a depth of approximately 3.3 m, whilst groundwater levels in BH03 closer to Blackwattle Bay were reported to be 1.833 m below well collar height. Standing water levels at BH02 adjacent to the Bank St boundary were reported at a depth of 2.281 m below well collar height.

A summary of the reported sample laboratory analysis results are provided in Tables (**Appendix A**). Review of the reported assessment indicated that the E3C (2012a) data as summarised is suitable to be adequately reliable for the purposes of developing a conceptual site model and future remedial strategy for the broader site.

E3C reported elevated concentrations of TPH (C_{10}-C_{36}), total PAH and benzo(a)pyrene in one soil sample collected from BH01 (0.5-0.7 m), consistent with the tar stained and odorous material. Three other soil samples were reported to have elevated levels of total PAH and/or benzo(a)pyrene. One fill material sample was reported to have an elevated lead concentration, whilst all other heavy metals, BTEX, OCPs and PCB concentrations were less than the adopted criteria.

Groundwater samples from two installed wells were analysed for TPH, BTEX and PAHs with concentrations of these organic analytes reported to be less than the laboratory LOR and below the adopted criteria. Lead and zinc concentrations in groundwater were reported to exceed the adopted site assessment criteria, whilst the remaining individual heavy metals concentrations were below the LOR or the adopted assessment criteria.

E3C considered that the limited scope of groundwater assessment completed was inadequate to characterise site conditions. However, based on the scope of the collected data, the groundwater conditions were indicated to be typical of those in the urban environment and were considered to not pose an unacceptable impact to users of the site or adjoining Blackwattle Bay.

E3C reported that the soil assessment program identified results similar to those reported by RCA and NAA. The surficial fill material comprising gravelly silty sand with crushed sandstone and concrete was underlain by subsurface fill profile of 0.7 m to 4.05 m bgs. Whilst the subsurface fill material was identified as impacted with TPH, PAHs and Benzo(a)pyrene at one location and by benzo(a)pyrene and PAHs more broadly across the site, the recent gravelly fill material surface profile was considered by E3C to provide a suitable capping mechanism for protecting site users from exposure. Based on the use of the site for dragon boat storage and launching, E3C considered the identified contaminant concentrations would not likely pose a risk of harm to the health of site users.

Based on the outcomes of the assessment, E3C considered that the site was suitable for continued use associated with the dragon boat club subject to implementation of a long term EMP to control and limit the exposure of site users to the underlying fill material. It was further noted that if a more sensitive land use was proposed, further assessment of potential risks to human health would be required to establish appropriate recommendations in relation to the specific site use.

4.3.9 E3C (2012b) 1 Bank St Stage 1 Preliminary Site Investigation

This report documented a preliminary site investigation completed for the property identified as 1 Bank Street, Pyrmont, located at the northern most extent of the Study Area. The site occupied an area of approximately 1500 m^2. The objective of the work was to review current and former site

activities to assess the potential for soil and/or groundwater contamination to be present at the site that would require further investigation.

The scope of works included a review of available historical records and a detailed site inspection. It was identified that three of the buildings were reported to have formerly been used as residences, one of which housed a former boat builder's workshop beneath the living area. One building was reported as formerly been used as an abattoir whilst the last building was reported to have previously been used as an art studio/gallery. The buildings were assessed to have been constructed prior to 1961. A small boiler was identified in this building. One drainage pit was identified at the site, however there were no other UST/AGSTs identified at the time of this investigation.

Potential areas of concern identified during the Stage 1 preliminary assessment included the presence of a collection pit of unknown historical use; a former boiler; the presence of oil or greases stored at the site; paint associated with the former use of one building; possible historical use of one building as an abattoir; possible historical use OCPs and organophosphate pesticides (OPPs) in pest control activities; possible use of hazardous materials in buildings currently and formerly at the site and the potential presence of fill material of unknown origin to generate current site levels.

E3C recommended that further assessment of potential contamination conditions be completed to evaluate the potential suitability of the site for future proposed uses and/or identify remediation and/or long term management requirements to make the site suitable for a future proposed use.

4.3.10 CDM (2012a) 1 Bank St Phase 2 Environmental Site Assessment (Draft)

This draft report documented an assessment of the property identified as 1 Bank Street, Pyrmont, located at the northern most extent of the Study Area. The site occupied an area of approximately 1500 m^2. The report copy provided for review comprised an incomplete draft. The objectives were reported to include an assessment of soil and groundwater quality at the site such that potential contamination could be identified and the need for further assessment/ management assessed. It was indicated that the site was being considered for future potential redevelopment for commercial/industrial and open space land uses.

CDM (previously E3C) indicated that a previous Phase 1 assessment (as discussed above) had identified the potential for site contamination as a result of historical use of the 5 existing buildings. As such, potential contaminating activities may have previously included the storage of oils/fuel, paint and possibly an abattoir/cooling room; hazardous building materials; and historical site filling activities.

The scope of work undertaken for the assessment included installation and sampling of 7 boreholes and 3 monitoring wells located as shown in **Figure 3B** with subsequent laboratory analysis of representative samples. Soil and groundwater samples were analysed for heavy metals, TRH, BTEX, PAHs, OCPs, PCBs, VOCs and sVOCs in addition to limited analysis for ammonia, nitrate and nitrite in surface soil samples. Health investigation levels as presented in NEPC (1999) for parks and recreational land uses and commercial use were adopted for the site assessment in addition to TPH/BTEX thresholds from NSW EPA (1994). ANZECC (2000) ecological trigger values were adopted for assessment of groundwater conditions.

A potential current/former underground storage tank (UST) location was identified in the central yard area of the site during this investigation with possible vents attached to the north-east most building wall.

Sampling locations identified fill material at the site extending to depths of up to 2.4 m bgs underlain by natural sand, sandy clay and sandstone bedrock. The fill material comprised silty sand, sand, silt and gravel based fill material. Odorous soil conditions were identified in fill material at BH01 at depths of up to 1.5 m bgs, in near surface soils at BH02, and in natural sand soil in BH05 (3-3.8 m bgs), downgradient of the suspected UST location. Groundwater was at the time of the field works

identified in the natural sand and weathered sandstone bedrock and was considered by E3C as likely to be influenced by tidal variation given the proximity of the adjoining bay.

A summary of the reported sample laboratory analysis results are provided in Tables (**Appendix A**). CDM indicated that data validation procedures employed in the assessment identified that the analytical data could be relied upon with respect to the project requirements. It is considered that the CDM (2012a) data as summarised herein is suitable to be adequately reliable for the purposes of developing a conceptual site model and future remedial strategy for the broader site.

TPH (C_{10}-C_{36}) concentrations in a number of analysed soil samples were reported to exceed the adopted site assessment criterion. Samples with elevated TPH were reported to have been collected from surface soils to depths of 3.5-3.8 m bgs. Lead, total PAH and/or and benzo(a)pyrene concentrations were also reported to exceed the adopted thresholds at a number of locations.

All reported BTEX, PCB, VOC and sVOC (other than OCPs/PAHs) concentrations in soil were below the laboratory LOR and less than the adopted site criterion. Individual OCP concentrations in soil were less than the adopted site criteria for the respective compounds.

Elevated concentrations of TPH (C_6-C_{36}) in groundwater were identified at MW5 (**Figure 3B**). TPH concentrations in MW1 were less than the laboratory LOR, whilst MW2 was not analysed for TPH. BTEX and PAH compound concentrations in MW5 and MW1 were reported to be below the laboratory LOR. No significant concentrations of VOCs or sVOCs were identified in either sampled well. Copper, lead and zinc concentrations in groundwater also exceeded the adopted ecological criteria at one or more sampling locations.

Given the proximity of BH05/MW05 to the suspected UST, was considered likely that the soil and groundwater impacts identified at this sampling location were associated with the present/former feature. Given the absence of volatile contaminants associated with the petroleum impact it was further considered that the impacts were associated with less mobile compounds (i.e. not petrol) or are weathered.

CDM recommended that should hardstand pavements remain at the site, the identified impacts and potential risks to human health and the environment be appropriately managed via a long term EMP. However, where a more sensitive land use was contemplated, identified impacts would require further consideration and potentially remediation.

4.3.11 CDM (2012b) Long Term EMP 5 Bank St Pyrmont

CDM (formerly E3C) prepared a long term EMP document for approximately 9000 m^3 of land beneath the Anzac Bridge overpass known as 5 Bank St Pyrmont, parts of which had formerly been the subject of site contamination investigation activities as documented in NAA (2010), RCA (2011) and E3C (2012a) as discussed above.

The purpose of the long term EMP was to identify requirements for the control and limitation of site user exposure to the contaminated and potentially contaminated fill material at the site. CDM assumed the presence of PAH and heavy fraction petroleum hydrocarbon concentration in fill materials that exceed adopted health-based investigation levels for recreational land uses. Groundwater was considered by CDM to be typical of that encountered within an urban environment and are not considered to pose an unacceptable impact to users of the site.

The EMP identified that the hardstand surface and grassed/landscaped areas were required to be maintained such that site users are not exposed to the underlying contaminated fill material. In the event that works are required that disturb the ground surface, appropriate protocols as addressed in the EMP should be implemented such that workers and members of the public are not unacceptably exposed to the contaminated material.

4.3.12 EIS (2010a) Stage 2 ESA Sydney Fish Markets, 56-60 Pyrmont Bridge Rd, Pyrmont

This report prepared for the Fish Markets documents a Stage 1 and 2 environmental site assessment for the proposed redevelopment of the Sydney Fish Markets site. The investigation area was defined as Lot 2 in DP827434, Part Lot 1 in DP734622 an part Lot 1 in D836351 (**Figure 3A**). The objectives of the investigation were to assess the potential for significant soil and groundwater contamination conditions and acid sulfate soils at the site in relation to the proposed land use and to provide a waste classification for potential off-site removal of excess soil.

The scope of work undertaken included a review of historical site uses, implementation of a limited soil and groundwater investigation in conjunction with a geotechnical site investigation; complete a laboratory analysis program and document the investigation results in a site assessment report.

The historical site use assessment identified the following in relation to the site:

- From approximately 1902 to 1930 the site was leased to the British Imperial Oil Company Ltd and the Shell Company of Australia Ltd. Shell was reported to continue to lease the site until the early 1960s. It was reported that during this period activities including petroleum distribution and storage and possibly oil refining processes occurred at the site. During this period historical aerial photographs indicate the building was occupied by a range of industrial buildings and large silos/storage tanks;
- Lease records indicate that the NSW Fish Authority progressively leased portions of the site from the mid-1960s with these leases later being transferred to the Fish Marketing Authority in the 1970s with various sub-leases to companies associated with the sale and distribution of seafood; and
- In 2010 there were no recorded notices on the NSW DECCW CLM or POEO registers and a search of WorkCover NSW license records did not identify records related to USTs at the site.

EIS also reviewed a set of environmental assessment reports prepared by ICF Pty Ltd (1994a, 1994b) and AXIS Environmental Consultants Pty Ltd (1994).

Inspection of site conditions, whilst limited by use of the site as an active car park, identified two dip/fill points likely associated with a UST(s), located beyond the central west site boundary (within the foreshore investigation area discussed in EIS (2010b)). Based on the reported historical use, previous site contamination information and the site inspection outcomes, potential site specific contamination was considered to be associated with: potentially contaminated imported fill material, asbestos impacts associated with inappropriate demolition of former structures, potential historical use of the site for petroleum storage and/or refining processes, existing/suspected USTs, and various non-specific potential industrial activities for which the site may have been used.

On this basis, contaminants of concern were identified as: heavy metals, TPH/BTEX, PAHs, OCPs, OPPs, PCBs and asbestos. The requirement to evaluate the potential occurrence of ASS was also identified. Assessment criteria adopted from NEPC (1999) for commercial/industrial land uses and EPA (1994) for TPH/BTEX in soil were used for evaluation of the investigation data. ASS conditions were evaluated by comparison with ASSMAC (1998) trigger values. Marine groundwater trigger levels presented in ANZECC (2000) were generally adopted for assessment of groundwater in addition to EPA (1994) and USEPA Region 9 PRGs in the absence of ANZECC (2000) values.

The resulting field investigation included the installation of 17 soil sampling locations completed at a spacing of approximately 40 m centres and 5 groundwater monitoring wells as presented in **Figure 3E**. This was noted to be approximately 60 % of the minimum sampling density nominated in EPA (1995). Soil samples evaluated for potential ASS conditions were collected from 6 of the sampling locations.

The boreholes generally encountered pavements overlying fill material extending in depth from 0.4 m bgs to 4.2 m bgs. The fill material was typically identified as sandy gravel, sand or silty sand with inclusions of igneous, sandstone and concrete gravel, ash, slag and clay nodules. Hydrocarbon odours were noted in fill material at most locations. Alluvial silty sand soils underlay the fill material at most locations and deposits of alluvial materials with variable portions of silt, clay and sand were also noted, some with organic matter and shell material. The alluvial material was typically grey to dark grey in colour. Sandstone bedrock was encountered directly underlying the fill material in the north of the site and underlying alluvial soils across the balance of the site at depths of approx. 2.2 m to 8.5 m bgs. Standing water levels in installed monitoring wells ranged from approximately 0.54 m bgs to 1.0 m bgs.

A summary of the reported sample laboratory analysis results are provided in Tables B1 to B6. EIS reported that the data validation procedures implemented for the assessment were suitable to demonstrate the collected and reported data is suitable to address the objectives of the assessment. Further, JBS&G consider the data is suitable to support the development of a conceptual site model and future remedial strategy for the broader site.

The laboratory analysis results identified a range of soil contamination issues at the site, including the presence of elevations of arsenic, benzo(a)pyrene in fill material; light fraction (C_6-C_9) TPH impacts in the central west portion of the site in the vicinity of the identified UST fill/dip points; and mid to heavy-fraction (C_{10}-C_{36}) TPH concentrations more broadly spread across the site in fill material. Fill soil samples were screened for the presence of asbestos in soil with neither asbestos nor respirable fibres were detected at concentrations above the laboratory limit of reporting.

The acid sulfate soil assessment identified the presence of potential acid sulfate soil conditions in alluvial soil underlying the fill material at the site. It was reported that sPOCAS (S_{pos}%) sulfur trail results above the site action criterion were noted in both fill material and natural soil samples, with those in the natural alluvial soils with positive acid trail results of a more significant nature. It was considered that the positive results in fill material were likely associated with components of the fill material other than iron sulfides when considered in conjunction with the acid trail results that showed a lack of acid generation potential.

Assessment of groundwater contaminant conditions identified minor exceedances of lead in one sample, low levels of various individual VOC and PAH compounds and TPH (C_6-C_{36}) in monitoring wells in the central south of the site.

EIS presented a discussion of potential contamination sources at the site, identifying the likelihood that PAH impacted material were associated with industrial waste material including slag and ash placed as fill material at the site to generated current site levels. The source of the arsenic contaminated material was inferred to potentially be slag, or potentially impacts associated with use of pesticides, insecticides and/or timber preservation activities as may have either occurred at the site, or at the location where the fill material was sourced from. The petroleum hydrocarbon impacts in fill material and groundwater were considered to be associated with historical site activities and also potentially undocumented fuel storage facilities located in the impacted area of the site.

The assessment recommended the implementation of additional delineation investigation activities to better characterise site conditions prior to development of a remedial strategy document to guide works associated with future redevelopment of the site.

4.3.13 EIS (2010b) Preliminary Assessment Sydney Fish Markets Waterfront Redevelopment, 56-60 Pyrmont Bridge Rd, Pyrmont

This report prepared for the Fish Markets and LPMA documents a preliminary environmental site assessment for the proposed redevelopment of waterfront land at the Sydney Fish Markets site. The investigation area was defined as part Lot 1 in DP835794, Part Lot 1 in DP734655 and part Lot 2 in DP827434 (**Figure 3A**). The objectives of the investigation were to assess the potential for significant

soil, sediment and groundwater contamination conditions and acid sulfate soils at the site in relation to the proposed land use and to provide a waste classification for potential off-site removal of excess soil.

The scope of work undertaken included a review of historical site uses, implementation of a limited soil and groundwater investigation in conjunction with a geotechnical site investigation; complete a laboratory analysis program and document the investigation results in a site assessment report.

Inspection of site conditions, whilst limited by use of portions of the site for fish market activities and a vehicle car park, identified the use of an area as a heli-pad, an adjoining waste engine oil storage area and a suspected UST in the northern portion of the site (as noted in EIS 2010a).

Contaminants of concern were identified as heavy metals, TPH/BTEX, PAHs, OCPs, OPPs, PCBs and asbestos. The requirement to evaluate the potential occurrence of ASS was also identified. Assessment criteria adopted from NEPC (1999) for parks and recreational open space land uses and EPA (1994) for TPH/BTEX in soil were used for evaluation of the investigation data. ASS were evaluated by comparison with ASSMAC (1998). Marine groundwater trigger levels presented in ANZECC (2000) were generally adopted for assessment of groundwater in addition to EPA (1994) and USEPA Region 9 PRGs in the absence of ANZECC values. Sediment sample results were assessed via comparison to ISQC values presented in ANZECC (2000).

The resulting field investigation included 10 soil, 3 groundwater and 3 sediment/harbour water sampling locations as presented in **Figure 3F**. Soil samples evaluated for potential ASS conditions were collected from 4 of the sampling locations.

The boreholes generally encountered pavements overlying fill material extending in depth from 1.1 m bgs to 5.5 m bgs. The fill material was typically identified as brown to grey brown silty clayey sand, silty sand and silty sandy clay with igneous and sandstone gravel, brick and brick fragments, ash and slag. Alluvial silty clay/clayey silt, silty sand or silty clayey sand underlay the fill material at most locations varying in colour from dark grey to grey and brown. Shell material inclusions were noted. Sandstone bedrock was encountered at several locations at depths of between 1.5 m and 6.0 m bgs. Standing water levels in installed monitoring wells ranged from approximately 1.56 m bgs to 2.19 m bgs.

A summary of the reported sample laboratory analysis results are provided in Tables B1 to B6. EIS reported that the data validation procedures implemented for the assessment were suitable to demonstrate the collected and reported data is suitable to address the objectives of the assessment. Further, JBS&G consider the data as summarised above is suitable to support the development of a conceptual site model and future remedial strategy for the broader site.

The laboratory analysis results identified a range of soil contamination issues at the site, including the presence of elevations of lead; mid to heavy fraction (C_{10}-C_{36}) TPH impacts; total PAHs and benzo(a)pyrene. Fill soil samples were screened for the presence of asbestos in soil with neither asbestos nor respirable fibres were detected at concentrations above the laboratory limit of reporting.

Laboratory analysis of sediment samples included 3 samples for heavy metals, TRH/BTEX, PAHs, OCPs/OPPs, total cyanide and tributyltin. Elevated levels of copper, lead, mercury, nickel, zinc and PAHs were identified above the ISQG-low criteria, with limited lead, mercury, zinc and PAHs also exceeding the respective ISGQ-high values. TRH concentrations exceeded the adopted (EPA 1994) thresholds, whilst BTEX concentrations were less than these criteria.

The acid sulfate soil assessment identified the presence of potential acid sulfate soil conditions in alluvial soil underlying the fill material at the site. It was reported that sPOCAS (S_{pos}%) sulfur trail results above the site action criterion were noted in both fill material and natural soil samples, with those in the natural alluvial soils with positive acid trail results of a more significant nature. It was

considered that the positive results in fill material were likely associated with components of the fill material other than iron sulfides when considered in conjunction with the acid trail results that showed a lack of acid generation potential.

Assessment of groundwater contaminant conditions identified exceedances of arsenic, copper, lead, zinc, individual PAH compounds and TPH (C_{10}-C_{36}) in groundwater.

Discussion of potential contamination sources at the site identified sources consistent with those presented in EIS (2010a). The assessment recommended the implementation of additional delineation investigation activities to better characterise site conditions prior to development of a remedial strategy document to guide works associated with future redevelopment of the site.

4.3.14 EIS (2010c) Additional Environmental Site Assessment and RAP, Sydney Fish Markets

This report prepared for the Sydney Fish Market Pty Ltd and Land and Property Management Authority (LPMA) documents additional site contamination investigation activities and a proposed remedial action plan (RAP) for redevelopment of the Sydney Fish Markets site including the waterfront land.

The objectives of the investigation were to better assess the soil and groundwater contamination and document a remedial strategy to address identified impacts at the site in relation to the proposed site redevelopment.

The scope of work undertaken included a review of available previous investigation reports; implementation of a ground penetrating radar (GPR) survey of three site sections; installation of data loggers to assess tidal impact at the site; targeted field sampling program including a total of 16 boreholes, 3 additional monitoring wells; a laboratory analysis program and documentation of the investigation outcomes in a site assessment report and RAP document.

This investigation incorporated the two areas formerly assessed in EIS (2010a) and EIS (2012b) with the description of the site condition and use of both areas at the time of the EIS (2010c) works consistent with those documented in these earlier reports.

The GPR survey was completed in three areas of the site where suspected USTs may have been situated. The survey identified 4 suspected USTs, 1 situated in the northern portion of the site, approximately 10 m from existing buildings and 3 situated in the central west of the site in the vicinity of BH606 and BH517.

The field investigation works included installation of 15 additional boreholes (BH700 series) in the vicinity of areas of impact identified in EIS (2012a) around EIS BH504 and EIS BH517 in addition to 8 boreholes distributed across areas not previously assessed at the site. Also, three additional groundwater monitoring wells were installed to depths of 5.5 m to 6 m bgs. Completed sampling locations are presented in **Figure 3F**.

Assessment criteria adopted from NEPC (1999) for parks and recreational open space land uses and EPA (1994) thresholds for TPH/BTEX in soil were used for evaluation of the investigation data. ASS conditions were evaluated by comparison with ASSMAC (1998). Marine groundwater trigger levels presented in ANZECC (2000) were generally adopted for assessment of groundwater in addition to EPA (1994) and USEPA Region 9 PRGs in the absence of ANZECC values. Laboratory analysis of collected soil samples were limited to heavy metals, TPH/BTEX, PAHs, OCPs, OPPs, PCBs and asbestos. Groundwater samples were analysed for heavy metals, TPH/BTEX, PAHs and oil and grease.

The boreholes generally encountered pavements overlying fill material extending in depth from 2.2 m bgs to 5.5 m bgs, although BH703 encountered a subsurface void (possibly a tunnel) and was terminated at the base of the void at 2.1 m bgs. The fill material was typically identified as silty sand, sandy gravel with inclusions of igneous, sandstone gravel, bricks, ash, slag and scrap metal. Alluvial

sandy or clayey soils underlay the fill material at those locations penetrating the fill material. The boreholes were terminated in natural soil at depths of 3.45 m to 6 m bgs.

Standing water levels in installed monitoring wells ranged from approximately 1.4 m bgs to 2.5 m bgs. Monitoring of water levels at MW517 over a 12 day period identified regular daily fluctuations of approximately 0.02 m. Based on the results, EIS considered that there is some tidal effect on groundwater levels at this location. Given the relatively low salinity at this location, it was considered unlikely that harbour water intruded as far as MW517, instead the tidal changes impact upon the rate of groundwater movement in this area of the site.

A summary of the reported sample laboratory analysis results are provided in Tables B1 to B6. EIS reported that the data validation procedures implemented for the assessment were suitable to demonstrate the collected and reported data is suitable to address the objectives of the assessment. Further, JBS&G consider the data as suitable to support the development of a conceptual site model and future remedial strategy for the broader site.

The laboratory analysis results identified the following soil contaminant exceedances in relation to the nominated parks/recreational open space threshold concentrations including arsenic, TPH (C_{10}-C_{36}), total PAHs and benzo(a)pyrene in fill material.

Heavy fraction TRH (C_{10}-C_{36}) was reported in three of the four sampled monitoring wells at elevations above the adopted thresholds. In addition, individual PAH concentrations were identified in two groundwater samples at concentrations above the adopted thresholds.

In addition to the assessment results, EIS documented a remedial strategy based on a combination of contaminant source removal (fuel storage infrastructure, petroleum, heavy metal and PAH impacted fill material); cap and containment of contaminated soil considered to not represent an unacceptable risk to sensitive receptors via migration; and on-going management of the site inclusive of on-going monitoring of groundwater conditions.

4.3.15 EIS (2010d) Fish Markets Redevelopment Acid Sulfate Soil Management Plan

This report for the Fish Markets and LPNSW documented procedures required during potential redevelopment of areas of the Fish Markets and adjoining sediment associated with management of ASS that may be disturbed during development activities.

It was reported that the proposed development work would be completed in four stages, each designed to minimise the extent of penetration below elevations of RL3.6 m. It was acknowledged that localised deeper excavations may be required for installation of services trenches, lift pits and footing construction works.

Previous assessment of ASS conditions as presented in EIS (2010a and 2010b) were used as the basis for development of the ASSMP measures. Based on the results of these assessment activities the following was identified:

- Fill material above the groundwater table, generally occurring to a depth of 1.5 m below site levels was considered not to be ASS, as such any works to a depth of 1.5 m below ground levels would not be required to comply with the ASSMP;
- Fill material and natural alluvial/estuarine soils at depths of greater than 1.5 m below ground level were considered to require treatment following excavation and prior to off-site disposal; and
- Sediments within Blackwattle Bay directly to the west of the site were considered to be PASS and as such, any disturbance activities would require implementation of treatment and management measures as outlined in the ASSMP.

Measures including the establishment of a treatment area for lime stabilisation of excavated material were outlined in the ASSMP. The reported rate of lime addition required ranged from <

0.75 kg $CaCO_3$ / tonne of soil to 35 kg $CaCO_3$ / tonne of soil in natural silty clay soil underlying the site.

In addition, measures were also provided for management of excavation water as may be required to be managed during the works.

4.3.16 JK (2010a) Fish Markets Redevelopment Geotechnical Stages 2-4 Investigation Report

JK was engaged by the SFM Pty Ltd to undertake geotechnical investigations to support the design of Stages 2-4 works for the markets site. The proposed works would include demolition of a range of site structures and construction of a new 4 storey market building in the east of the site with a ground floor level of approximately RL 3.6 m. Stage 4 would comprise the replacement of buildings in the north-east site section with a two storey building of a similar relative level. Excavation of up to approximately 2.0 m would be required with localised excavations to greater depth for trenches, lift pits and footing construction.

The investigation works comprised evaluation of data from field works completed in 1998 and 2001 in addition to an additional 24 boreholes. Five groundwater monitoring wells were also installed (in conjunction with the EIS investigation works discussed above). At the time of the investigation works, the site was predominantly used as a carpark. The ground surface was finished with asphaltic concrete that was generally uneven and undulating, with cracking and patches of repair apparent. The retail/wholesale market buildings around the carpark were either of steel frame, concrete block or brick construction. A sandstone bedrock outcrop was observed on site in the north-east corner and ran in a north-west to south-east direction.

A dilapidated seawall was situated at the western site extent and retained the site to approximately 0.9 m to 1.5 m above water level. The seawall was constructed of a combination of sandstone masonry, concrete and timber (discussed further below).

The site was identified to be underlain by fill material, silty to peaty quartz sand, silty and clay overlying Hawkesbury Sandstone bedrock. The pavements were typically underlain by a basecourse profile of silty gravelly sand and sandy gravel to approximately 0.5 m thick. In some instances, the asphaltic concrete was also underlain by concrete pavements. Fill material extended to depths ranging from 0.4 m to 4.2 m bgs. This material was typically silty sand, sandy gravel and silty gravelly clay with inclusions of igneous and sandstone gravel and fragments of ash, slag and wood. The fill was reported to generally have been moderately or well compacted apart from material extending beneath the water table, which was considered to be poorly compacted. In a number of boreholes, cobbles and boulders of concrete, rubble and brick were noted to depths of 1.1 m bgs. Buried concrete pavements were also identified in a number of locations.

Estuarine/marine soils were encountered beneath the fill material at the majority of sampling locations and extended to depths of between 2.2 m and 8.5 m bgs. This material generally comprised silty and clayey sand with occasional clay and silty bands, and in some instances sandy clay. The soils tended to be thicker where sandstone was deeper, ranging up to approximately 5 m in thickness. The sandy soils were assessed as very loose or loose and either moist or wet. The sandy clay soils varied from firm, stiff and up to very stiff in strength.

Sandstone bedrock was encountered either directly beneath the fill material, or underlying the estuarine soil profile at depths from 0.4 m to 8.5 m bgs. Along the northern extent of the site is a buried sandstone cliff line exposed as the outcrop noted above. To the west of this feature, the rock level/shelf dropped off, diving beneath an area of reclaimed bay that extends to the seawall feature. On first contact, the sandstone was typically extremely low to very low strength and was extremely to distinctly weathered. The bedrock was reported to improve to low strength or better between 1.8 m and 10 m bgs. Groundwater seepage was identified during drilling at depths of approximately 1.2 m to 4.7 m bgs. This corresponded to elevations of 0 m to 2.3 m AHD.

Laboratory analysis results completed for this investigation identified:

- California Bearing Ratio (CBR) test results of 5 % and 25 % on the silty sand and gravelly sand fill. Historically CBRs in the range of 12 % to 15 % had been reported in gravelly silty sand fill.
- The soil pH test results on natural sand soil and fill material ranged from 7.3 to 11.2. Sulfate content values were reported from 7.9 mg/kg to 410 mg/kg, whilst chloride content was 23 mg/kg to 99 mg/kg. When assessed against AS215-2009 for pile design, the fill material and natural soils were classed as 'non-aggressive' to steel and concrete structures.

The following were considered to be the principal design issues associated with the development works:

- All footings should be designed to extend to sandstone bedrock.
- Given the need for excavation up to 2 m bgs, temporary shoring of the ground beneath the existing buildings will be required. At the western extent of the new building footprint, ground levels would be required to be raised. It was suggested the existing asphalt pavement could be retained in-situ in these areas.
- Due to the nature of the fill material and natural soils, and high groundwater table, the Stage 2-3 construction works could not be completed using conventional bored piles. Continuous Flight Augering (CFA) piling methods were stated to be the recommended foundation methodology. For Stage 4, where shallow sandstone was encountered, pad or strip footings to be founded in sandstone were feasible. Where sandstone levels occurred at a greater depth, including at the southern extent, a bored or CFA pile foundation system would be required.
- Given the carpark condition observations, it was recommended that where fill material was to be placed or present in-situ, a suspended slab be adopted. Alternatively, selected stripping and then replacement as engineered fill material would be required.

4.3.17 JK (2010b) Geotechnical Report for Sydney Fish Markets Foreshore Works

JK was engaged to provide geotechnical advice to assist with design of alterations and additions to the foreshore development area associated with the fish markets, comprising works including extension of the existing boardwalk and embankment, upgrade of the seawalls, new foreshore revetment, over water walkways and landscaped areas behind the seawall. The works included interpretation of a range of borehole information (24 locations) drilled previously at the site during the period from 1988 to July 2010 (in conjunction with the EIS investigations discussed above). Locations incorporated a range of both on-shore and barge based activities.

The investigation identified that ground levels behind the seawalls ranged from RL 1.5 m in the north-west to approximately 3.2 m in the south-east adjacent to the main market building. From south to north along the water's edge, the site was retained by the following features:

- To the south of the timber deck area was a fill embankment approximately 2 m in height with slopes ranging from 30° to 60°. Part of this embankment was supported by large boulders (rip-rap). Directly below the board-walk was an embankment protected with rip-rap.
- To the north of the concrete jetty was a rip-rap protected embankment extending approximately 6 m to the north of the jetty and with a slope of approximately 30°. Beyond this was a sandstone block seawall of between 1.2 m and 1.8 m in height extending to just south of the timber jetty. This wall was reported to be in poor to fair condition (and extended to the rear of the Claudios building).

- To the immediate south and north of the timber jetty, the sea wall comprised timber piles and lagging, some of which was in poor repair.
- North of the timber sea wall and extending to the northern site boundary was a fill embankment with a batter slope of approximately 10°. Toward the crest of this slope it tended to be steeper and a block wall of approximately 0.4 m that had completely collapsed was also reported here.

In the northern portion of the site, prior to construction of the concrete vehicle access ramp, ground conditions were reported to comprise the presence of fill material to depths of 1.9 m bgs (although noting 2 boreholes terminated on obstructions in fill material 1.5 m). The fill material comprised silty sandy, sandy gravel and silty gravelly clay with inclusions of igneous and sandstone gravel. The fill was moderately to well compacted. Two boreholes encountered estuarine silty sand to a depth of 2.3 m, which was assessed as very loose and either moist or wet. Sandstone bedrock was encountered either immediately below the fill material or beneath the estuarine soils at depths ranging from 0.7 m to 2.3 m. The sandstone was reported to initially be of extremely low to very low strength and extremely to distinctly weathered. At two locations the sandstone was reported to increase to low to medium strength between 1.2 m and 3 m bgs. Groundwater was reported at approximately 1.5 m and 1.9 m bgs.

With regard to the remainder of the on-shore boreholes within the foreshore area, it was reported that fill material typically overlay a sandy soil layer that in turn overlay sandstone bedrock. The depth of fill and sandstone typically increased toward the south-east of the site. The fill material ranged in depth from 1.1 m to 6 m bgs and comprised silty sand, sandy gravel and silty gravely clay with inclusions of igneous and sandstone gravel, concrete and brick rubble as well as fragments of ash and wood. The fill was assessed to range from poorly to moderately or well compacted. In some areas inclusions varied to cobble size. Estuarine deposits fo silty and clayey sand with occasional clay and silt bands were encountered beneath the fill material to depths of between 2.2 m to 12.8 m bgs. The sandy soils were assessed as being very loose or loose and either moist or wet. The sandy clay soils were reported to vary from firm, stiff and up to very stiff in strength. One location also identified a peaty clay profile 1.3 m in depth just below the fill profile. In a range of locations boreholes were extended to sandstone bedrock. The rock ranged from extremely low to very low in strength and was distinctly weathered. This improved to distinctly weathered and low to medium and medium strength with depth.

The overwater boreholes encountered natural sandy soils underlain by sandy bedrock with one location encountering overlying fill material. Similar to the onshore locations, the sediment and rock depths increased toward the south-east. The fill material at one sampling location comprised silty sand to a depth of 2.4 m below seabed level (bsbl). The remaining locations encountered generally silty sand, but in some instances also clay, sandy clay, peaty clay and clayey sand to depths of between 2.26 m and 11.1 m bsbl. The sandy soils were reported to be very loose or loose. The sandy clay soils varied from very soft, firm, stiff and up to very stiff in strength. Several zones of peaty clay were encountered to thicknesses of 1m and 1.7 m. The sandstone condition was reported to vary considerable from low to very low strength and extremely to distinctly weathered at first increasing to distinctly-slightly weathered and of medium to high strength at a number of locations, whilst others remained of low strength.

A summary of reported design issues comprised:

- New suspended boardwalks would require barge installed pile foundations, similar to historical construction works. Given the conditions, some piles will likely be driven through substantial soil profiles of very low bearing capacity and potentially to rock at depth. In the north, rock will be encountered at depths of approximately 2 m bsbl and will need to be socketed into the sandstone.
- Between the two jetties, the soil conditions would present a poor foundation for any new sea walls as a result of their loose compaction and the presence of large boulders within fill material. It was reported that either piled foundations would require consideration, or an armoured revetment solution be considered.

4.3.18 Jacobs (2014) Sydney Bays Precinct, Geotechnical Desktop Review.

UrbanGrowth NSW commissioned Jacobs to undertake a desktop study of geotechnical conditions across the 7 areas comprising the 'Bays Precinct' to identify preliminary indicators of geotechnical opportunities and constraints for future development options across the Precinct. The assessment relied upon a number of existing site investigation reports prepared by others in addition to regional maps.

With regard to the Blackwattle Bay Study Area, the study identified the following:

- The majority of the eastern area was expected to be underlain by the Hawkesbury Sandstone formation and shallow depths. Close to the shoreline it was expected that the depth to the rock interface would undulate and generally increase, with some areas, including the south-east corner of the Study Area immediately underlain by significant (> 3m) fill profile. Review of historical maps identified that this area had been reclaimed via filling.
- Jacobs considered that the area bound by the abutment to Anzac Bridge and running parallel to Banks St would likely be underlain by Sandstone bedrock within approx. 1 m of the current ground level. To the west of this area, undulating depth to rock would occur with both fill material and recent (Quaternary) sedimentary material being encountered overlying the Sandstone. At the waters edge it is anticipated that deep fill material and recent sediments of greater than 5 m in depth would overlay the Sandstone bedrock.
- Upgradient of the historical shoreline, Jacobs expected the total depth to Sandstone, being a combination of fill material and recent alluvial sediments, would total less than 5 m. Whilst areas beyond the historical shoreline, ie. those reclaimed areas would have much deeper profiles of both strata. It was expected that the fill material would typically have been placed in an uncontrolled manner and could comprise a mixture of power station waste ash, building debris and soil from former quarrying activities.
- Groundwater levels were expected to be shallow and associated with tidal levels within the adjoining bay. This would require consideration of both saturated sediments within excavation and the potential salinity levels.
- Identification of constraints/opportunities and design considerations were identified as follows for each of the areas present within the Study Area:
    - Shallow bedrock:
      - Good foundations. This would allow high level pad footings founded directly on rock, or extended on shallow bored piers through a fill platform.
      - Existing rock cuttings would require assessment for potential instability issues with weathering and/or - deterioration of near vertical cuttings. Remedial works such as shotcrete facing and rock bolts may be required to address safety concerns for adjacent

roads and/or buildings.
- Identification of localised weathered zones, overhangs, adverse joint sets, dykes, etc will be required to maintain excavation stability.
- Concentration of shallow perched groundwater at the fill/sediment/rock interface will require control. Some seepage would then be expected through the rock, but inflows could be expected to be low pending final basement depths.
- There is the potential, particularly toward the northern and south-eastern edges, for difficult excavation conditions due to good quality sandstone.

- Moderate bedrock over shallow fill and/or recent alluvial sediments:
- A moderate depth of uncontrolled fill and alluvial sediments that would have the potential for unpredictable ground movements for high level foundations. Fill removal and/or reinstatement may be a preferred option in these areas during development.
- Foundations for buildings would likely require piles to penetrate into the underlying competent sandstone rock. Pending groundwater depth and intrusion rates, bored piles may be feasible, alternatively full cased piles may be required. Detailed assessment would be required once building design and structural loading information is available.
- There is the potential for moderate profiles of recent alluvial sediments that may be unsuitable as foundation material, with foundations likely to be required to extend to the underlying bedrock.
- Groundwater levels would be expected near the fill/sediment interface given the proximity to historical drainage paths. The impact on excavations of the high watertable and associated excavation inflows will require consideration. The potential for aggressive (saline) groundwater conditions may impact upon the durability of below ground structures.
- Based on the conditions, there may be limited opportunity for deep basement, unless fully tanked structures are adopted, with consideration of deep cut-off walls to control inflows and excavation dewatering necessary. The buoyancy (uplift pressure) of such conditions will also require consideration during below ground building structure design.
- Consideration will be required of piped stormwater drainage with regard to identified shallow groundwater levels, including trench support and the potential for drainage impediments during tidal surges, where outlets are into the bay.

- Deep bedrock in reclaimed areas with deeper fill and/or alluvial sediment profiles:
- A moderate to deep depth of uncontrolled fill material that may result in unpredictable ground movements for high level foundations. Fill material may be preferred in these areas to avoid any potential unpredictable deformation/movements of ground once loads are applied.
- In some instances a moderate depth of recent alluvial sediments occur. This material is likely to be compressible once loaded and therefore may be unsuitable as a foundation material. As such, foundations may require extension to the competent rock beneath.
- Foundations for buildings would likely require piles to penetrate into the underlying Sandstone. As above, consideration will be require to groundwater conditions and individual building details.
- There is the potential for large, buried obstructions in the fill material.
- Groundwater may be expected near the fill material – alluvial sediment/Sandstone interface, or saturated fill material units may occur where reclamation has been completed beyond the historical shore lines. There is the potential for high water flows into excavations. The potential for aggressive (saline) groundwater conditions may impact upon the durability of below ground structures.
- The opportunity for deep basements may be limited without adoption of full tanked structures and consideration of cut-off walls to control inflows and excavation dewatering. There is also the potential limitations of sandstone ‘rippability’ due to

competent bedrock material. The buoyancy (uplift pressure) of such conditions will also require consideration during below ground building structure design.

- - Consideration will be required of piped stormwater drainage with regard to identified shallow groundwater levels, including trench support and the potential for drainage impediments during tidal surges, where outlets are into the bay.
  - Potential construction issues could include saturated and unstable ground conditions, fill obstructions and unacceptable (or unexpected) settlement.

4.3.19 DP (2016) Due Diligence Contamination Assessment 31-35 Bank St, Pyrmont.

Celestino Pty Ltd commissioned DP to undertake a site contamination investigation at the time of acquisition of the existing commercial property. The scope of work included review of the previous (GHD 1997) assessment, implementation of additional site investigation, including evaluation of potential waste classifications and ASS occurrence, and data evaluation with regard to a potential future residential development scenario.

Inspection of the site and subsequent GPR survey identified at least one UST to remain within the northern portion of the site in addition to bowser islands. The site investigation included installation of 6 boreholes, installation of 2 monitoring wells and subsequent analysis of samples for COPCs (heavy metals, TRH/BTEX, PHAs, VOCs, phenols, OCPs/PCBs and asbestos. The intrusive investigations were limited to areas external to the office building and cold store footprints.

Site assessment criteria adopted for this investigation comprised NEPC (2013) investigation/screening criteria for Residential with minimal soil access and Commercial/industrial land uses in addition to the petroleum based screening levels for direct contact (CRCCare 2011[21]). Groundwater data was compared with ANZECC (2000) levels and the *Australian Drinking Water Guidelines* (ADWG 2011). ASS conditions were assessed via consideration of ASSMAC (1998) criteria.

DP identified the presence of relatively deep (4 m bgs) imported fill material in the north of the site and suspected deeper filling toward the south of the site. Natural sand/clayey sand soils were encountered beneath the fill material at two sampling locations, both underlain by sandstone. Sandstone bedrock was encountered in 4 of the 6 boreholes at depths of between 1.5 m and 4.0 m bgs, whilst two boreholes were terminated within fill material at 0.7 mm and 4.0 m bgs respectively. Hydrocarbon (petroleum and bituminous) odours were noted in fill material in the north of the site. Groundwater levels within installed monitoring wells was identified at depths of 2.12 m and 4.90 m bgs, equivalent to 0.08 m and 0.77 m AHD.

Elevated concentrations of medium to heavy-chain TRH and PAHs were identified in site fill material when compared to both land use scenarios. Ash and slag (Furnace waste, possibly associated with historically coke screening activities) inclusions were noted in the fill material and chemical odours were observed within the fill. DP consider this is likely associated with a mixture of the PAH (coke) and TRH (petroleum impacts). No additional heavy metal contamination in fill material was encountered during this investigation with regard to human health risks.

Natural soils were only encountered within the northern portion of the site, underlain by Sandstone. The ASS laboratory analysis was completed on several sandy clay fill material samples, which identified the material as non-ASS. Given the boreholes did not penetrate to the fill material in the lower portions of the site, it was recommended that further investigation of the potential for ASS underlying the site would be required.

[21] *Technical Report no. 10 Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*. Cooperative Research Centre for Contamination Assessment and Remediation of the Environment, CRC Care, 2011 (CRC Care 2011).

The area of DP considered that further investigation would be required to confirm the extent and nature of the TRH/PAH impacts at the site to enable development of a specific remedial action plan (RAP).

4.3.20 UNSW (2017) Baseline Assessment of Ecological Structure and Environmental Conditions at the Bays Precinct

UNSW (2017[22]) comprised a baseline ecological assessment of the marine environment at the Bays Precinct prior to development. The objective was to evaluate the environmental conditions within the Precinct by sampling ecological communities and physiochemical conditions in hard substrata and sediments. Sediments in Blackwatlle Vat were reported to be sult and had significant metal and nutrient contamination, indicating highly disturbed conditions. To this extent, UNSW (2017) recommended the following with respect to increasing biodiversity and restore ecosystem services within Blackwattle Bay:

- Reduction of contaminant loads through the treatment of storm water and land runoff; and
- Prevention of the resuspension of sediments during development by minimising sediment disturbance and using sediment curtains during construction activities.

4.3.21 EIS (2017) Contamination Investigation – Separable Portion 1, Blackwattle Bay

In conjunction with the JK (2017) geotechnical investigation, EIS was engaged to provide contamination data for the in-situ sediment and bedrock at the site in relation to an overwater development design for the new Sydney Fish Market site adjacent to Bridge Road.

The scope of work included installation of 21 boreholes within Blackwattle Bay, followed by a laboratory analysis program and comparison with adopted site assessment criteria. The sampling locations are shown on **Figures 3D**, **3E** and **3F**.

During sampling activities no odours, staining or asbestos containing material were identified in fill material, or natural soils. The fill material was reported to typically comprise silty clay or gravel with inclusions of sand, coal, river gravel, plastic fragments and shell matter.

Samples were submitted for laboratory analysis for a range of COPCs including heavy metals, TRH/BTEX, PAHs, OCPs/PCBs, volatile halogenated compounds (VHCs) and asbestos. No scope was included for acid sulfate soil assessment by either JK or EIS.

EIS developed site assessment criteria based on the Interim Sediment Quality Guidelines (ISQGs, ANZECC 2000); in addition to consideration of the data against soil criteria should dredging result in placement of the material as fill or alternatively the material required off-site disposal. This resulted in the comparison of the data against NEPC (2013) health screening and investigation levels for commercial/industrial and recreational land uses and the NSW EPA (2014) waste classification guidelines. Asbestos assessment comprised a presence/absence evaluation.

The full laboratory analysis data set is summarised in Table B3. EIS reported that the data validation procedures implemented for the assessment were suitable to demonstrate the collected and reported data is suitable to address the objectives of the assessment. Further, JBS&G consider the data as suitable to support the development of a conceptual site model and future remedial strategy for the broader site.

Given this data was subsequently assessed against specific criteria derived for the new Fish Markets development in JBS&G (2019a), no further discussion of the laboratory data is included in this section.

[22] *Baseline Assessment of Ecological Structure and Environmental Conditions at the Bays Precinct*, University of New South Wales, March 2017 (UNSW 2017)

4.3.22 JK (2017a) Geotechnical Investigation for Banks St Pyrmont Commercial Wharf

JK Geotechnics were engaged to undertake investigation works to support an amendment to an existing consent for the relocation of the Sydney Heritage Fleet to the property known as 5-11 Banks St Pyrmont. The scope of work included field investigation activities in December 2015 and January 2016 across both land (4) and over water (19) site portions. Ground elevations varied from approximately 3.8 m to 4.8 m AHD on land, with the sampling locations on sea bed having measured elevations of between 0.4 m and -8.5 m AHD.

At the time of the investigation, the site was occupied by the Blackwattle Bay Dragon Boat Club at the eastern end and a partially sealed RMS compound at the west. The south-west portion of the site sloped to the south and west with various grass covered embankments, sandstone rubble fill embankments and asphaltic concrete paved boat access ramps. The southern foreshore was formed by a 1.0 m concrete and a 1.5 – 2.0 high sandstone block seawall. It appeared that some sandstone blocks had been placed against the toe of the wall within the water, possibly to provide erosion protection. The central and west portions of the seawall appeared to be a result of reclamation of the bay, possibly during construction of the ANZAC Bridge.

The onshore drilling works encountered fill material overlying sandstone bedrock. The fill material typically comprised sand and gravelly sand fill with variable proportions of silt, clay and sometimes sandstone cobbles. The fill was generally moist and initially well compacted, reducing to moderately or poorly compacted with depth, to a maximum encountered depth of 4.5 m bgs.

Within the bay, many of the boreholes encountered sandstone rubble of cobble and boulder size, within a matrix of clay and sand, indicative of reclamation via pushing crushed sandstone material into the bay, with unconsolidated sediments being displaced. The marine fill material typically comprised clayey sand or gravelly sand, though in some instances comprised sandstone cobbles and boulders with a sand or clayey sand infill. This material was reported to be poorly compacted and was present up to 9 m in depth. Beneath the fill material, recent marine deposits comprised silty clay of high plasticity with high to very high moisture content. This material was very soft in strength and ranged in thickness to approximately 5 m. Silty sand and clayey sand soils of very loose to loose density, but with bands of very soft to stiff silty clay were encountered.

Sandstone underlay the fill material on land and was encountered beneath the marine soils at depths of between 1.2 m and 25.4 m below surface levels. The majority of the sandstone was of medium or high strength, although several boreholes did encounter bands of much lower strength rock.

Laboratory testing confirmed the clay soils as being of high plasticity with Atterberg liquid limits ranging between 52 % and 70 % and linear shrinkage values ranging between 13.5 % and 17.0 %. Emerson Class Number tests (completed in salt water) indicated Class 4 soils, indicating a low to moderate dispersion potential. Soil pH was reported to range from 6.3 to 8.3 with sulfate contents between 22 and 2,600 mg/kg and chloride contents between 69 mg/kg and 9,900 mg/kg. The reported resistivity values varied between 140 and 2,900 ohm.com. In combination with the seawater splash zone extent, these results placed the site within a ‘severe’ exposure classification.

4.3.23 JK (2017b) Geotechnical Investigation for Proposed Bays Market District, Blackwattle Bay

JK Geotechnics were engaged to undertake investigation works within over water areas of Blackwattle Bay and also within Wentworth Park to the south of the Blackwattle Bay Study Area to assist with design feasibility planning for redevelopment of the proposed Bays Market District (now Blackwattle Bay Study Area).

The investigation works included barge based overwater drilling of 21 boreholes (as presented in **Figures 3a** to **3f** by EIS 2017) in addition to 15 boreholes within Wentworth Park. Whilst the majority of the boreholes were completed within the vicinity of the Bridge Road properties and the proposed

new Fish Markets development footprint, boreholes were also drilled along the eastern margins of Blackwattle Bay in front of the Banks Street properties. The overwater boreholes were extended to depths of between 8.06 m and 20.54 m below the seabed surface. The Wentworth Park boreholes were extended to depths of up to 29.27 m bgs.

Within the bay, the boreholes encountered fill material close to the shoreline/sea wall, extending up to 4.7 m in depth. This material typically comprised clayey sand and silty clay with trace amounts of coal and plastic fragments. Natural soils within the bay either underlay the fill, or were encountered directly at sea bed level. These comprised interbedded deposits of silty clay, sandy clay and clayey sand of medium to high plasticity. The moisture contents were greater than the soil's plastic limits and the material was generally assessed to be of very soft to very stiff strength. The sandy soils were west and ranged from very loose to density in relative density. All soils contained varying proportions of fine to coarse grained gravel, shell fragment sand other organic material. Soil strength or relative density tended to increase with depth and within the middle of the bay, with the soils immediately overlying the sandstone tending to have higher sand contents. Emerson Class Test results generally indicated soil samples were within Class 2 (slaking in the presence of water with some dispersion) or Class 4 (slaking of the samples but no dispersion). However, one Class 7 (no slaking when placed in water) and one Class 3 (moderate dispersion of remoulded soil in water) result was identified.

The sandstone was initially of variable quality, ranging from extremely weathered to slightly weathered sandstone, but improving with depth to medium to very high strength with depth. The bedrock improved to at least medium strength in all borehole locations, although in some areas, likely associated with the suspected presence of a dyke(s) and its associated faulting, sandstone was highly fractured. The dyke was encountered at one location during drilling at approximately RL-19.76 m. Some minor shale bands were identified within the sandstone. Top of rock levels varied from approximately RL– 6m adjacent to the Hymix concrete batching plant at the east of the bay to RL-21 m at the northern extent of the investigation area within the centre of the bay, with a general flattened U shaped contour from east to west within the bay.

Within Wentworth Park, the fill material extended to depths of up to 11.0m bgs and comprised variable silty sand or sandy clay with inclusions of sandstone and igneous gravel, timber, tile, ceramic, glass, shell, concrete and brick fragments, slag and ash. The fill material was generally poorly compacted, with occasional moderately compacted bands. Natural soils similar to those encountered in the bay were identified underlying Wentworth Park.

The laboratory testing on soils completed for this investigation identified:

- Atterberg Limited and Linear Shrinkage tests on natural clay indicated they ranged from medium to high plasticity. The moisture content of near seabed soils was relatively high (up to 62.3 %) with soils at greater depth reporting values between 15 % and 34 %.
- Point Load Strength Index Tests reported sandstone of very low to very high strengths with UCS values varying from 1 MPa to 94 MPa.
- Emerson Class Number tests results were reported as either Class 2 or 4, with isolated samples reported as Class 3 and Class 7.
- Soil pH was reported to range from 4.1 to 8.6. Chloride content ranged from 1,200 mg/kg to 11,000 mg/kg and sulfate content from 110 mg/kg to 5,700 mg/kg. The electrical resistivity generally ranged from
  1.1 ohm.m to 7.1 ohm.m.

4.3.24 JBS&G (2019a) Environmental Site Assessment, new Sydney Fish Market Site

JBS&G was engaged by UrbanGrowth Development Corporation (UGDC) to prepare a site contamination assessment to support the proposed new Fish Market site development application.

The site is located at the head of Blackwattle Bay between the Pyrmont Peninsula and the foreshore of Glebe. The site is legally identified as Lots 3-5 in DP 1064339, part Lot 107 in DP 1076596 and part Lot 1 in DP835794 totalling an approx. 3.7 Ha, of which 0.7 Ha consists of land based areas above the high water mark.

The scope of works completed for the ESA comprised a review of previous contamination and other assessment/investigation reports available for the property, or portions thereof (as discussed in sections above), a review of the proposed development information; development of a CSM specific to the environmental characteristics of the property and the proposed development; and development of conclusions with regard to the suitability of the property for the proposed new Sydney Fish Market development, or the provision of recommendations on issues requiring management/ remediation that will require to be addressed within a RAP for the site.

The assessment identified that review of the available previous property assessment documents provided sufficient existing data to characterise soil, sediment and groundwater conditions within the area of the proposed development in order to establish a CSM. Further, the data reported in investigations by PB (2009), JBS&G (2015a) and EIS (2017) as discussed above was all reported to be reliable for the purposes of making decisions as part of this assessment. The assessment included adjustment of existing historical data as appropriate for comparison with current site assessment criteria as published in NEPC (2013) for soil and ANZAST (2018) for groundwater and sediment.

JBS&G reported that based on the CSM, the potential exposure pathways for future commercial users of the site would include inhalation (gas or vapours) pathways. On-site ecological receptors would be limited as the whole site will be covered in hardstand. Exposure pathways for off-site receptors would include contaminated groundwater (if any) migrating off-site and contaminant up-take from sediments. Based on the results, there were no potential unacceptable health risks identified with respect to the proposed development. Notwithstanding, it was identified these conditions would required to be confirmed with the results of a data gap assessment.

Further it was identified that heavy metal, PAH and TRH contaminated sediments have been identified within the extent of the development site that were reported to exceed both low and high trigger value sediment quality guidelines protective of ecological communities. UNSW (2017[23]) as discussed in **Section 4.3.20,** reported sediments within Blackwattle Bay had significant metal and nutrient contamination that were indicative of highly disturbed conditions, results. This was supported by the results reported in EIS (2017) (**Section 4.3.21**) and earlier in which sediment data collected from sampling points outside the proposed SFM development area (but in Blackwattle Bay) had similar levels of impact to those reported within sediments of the site.

Consistent with EPA (2017) guidance, in which it is confirmed remediation should not proceed in the event that it is likely to cause a greater adverse effect than leaving the site in its current condition with regard to contamination, JBS&G considered that sediments within the SFM site should not be actively remediated as it will likely result in adverse impacts through requirements for excavation, dewatering, ASS treatment and off-site disposal of the resulting stabilised material to landfill. Moreover, it would likely not result in any meaningful environmental outcomes within the context of the highly disturbed conditions of Blackwattle Bay in which sediments with elevated levels of contaminants have been reported throughout the entire Bay.

Given the occurrence of ASS indicators including sulfide odours and the presence of sea shells within media inspected from boreholes conducted on both the land and water portion of the site, ground disturbance works would be required to be conducted in accordance with an ASSMP.

[23] *Baseline Assessment of Ecological Structure and Environmental Conditions at the Bays Precinct*, University of New South Wales, March 2017 (UNSW 2017)

The final recommendation comprised the preparation of a RAP to establish a suitable framework for management of potentially contaminated media such that upon completion of works, the site will be considered suitable for the proposed use.

4.3.25 JBS&G (2019b) Remedial Action Plan, new Sydney Fish Market Site

Based on the outcomes of the environmental assessment as discussed above, a RAP was prepared to support the proposed development application for the new fish market site. Whilst, JBS&G (2018) identified no unacceptable health risks with respect to the proposed development based on the available historical assessments, a number of data gaps were identified in relation to potentially contaminated media specific to the proposed development proposal. As such, given the site conditions and remaining uncertainties, a RAP was recommended to establish a suitable framework for management of potentially contaminated media, management of material excess to development requirements, etc such that during the development early works phase, remediation/ management of conditions may be completed as necessary to ensure the site is suitable for the proposed use. Implementation of this framework would then enable completion of a final validation assessment to confirm the suitability of the site for the proposed commercial use as per the requirements of the NSW planning framework.

The RAP documented a summary of known and suspected site conditions; a conceptual site model (CSM) of contamination conditions and identification of existing data gaps in relation to the proposed development scheme; an evaluation of potential remedial strategies; identification of preferred strategies; and details of site management and associated validation requirements to be implemented during the proposed works.

Given the specific details of the development proposal, it was anticipated that material assessed as presenting an unacceptable risk to human health and/or the environment during the data gap investigation, or subsequent unexpected finds protocol implementation, would be managed via excavation and subsequent off-site disposal to a lawful facility. Further, excavated material surplus to development requirements would also require off-site removal in accordance with the protocols established within the RAP.

4.3.26 JBS&G (2019c) Acid Sulfate Soil Management Plan, new Sydney Fish Market Site

The ASSMP was prepared to support the proposed new fish market development application as discussed above. Given the previous investigations identified geological and soil characteristics of the site (i.e. fine-grained sediments) consistent with the presence of ASS. As such, management of development activities is required to consider the potential for disturbance of ASS including Potential ASS (PASS) where development activities may involve excavation or otherwise oxidation of soils/bay sediments beneath the water table.

The proposed development with the land portion of the site were expected to largely be at grade, however works associated with construction of the new development will require disturbance of sediments within the bay as a result of piling installation activities and adjustment of sediment bed levels for stormwater culvert maintenance. Further, there was at the time of preparation of the ASSMP, limited information available with respect to potential amendments to existing underground services infrastructure arrangements and the proposed water level interaction area both behind and in front of the sea wall. As such an ASSMP was required to document procedures to be implemented to manage the potential environmental risk associated with disturbance of these materials.

The ASSMP identified:

- The known and anticipated site sub-surface characteristics expected to be encountered during future excavation works for consideration in development of future investigative and management activities;

- A monitoring and sampling strategy to be implemented prior to and during the proposed ground disturbance activities such that ASS/PASS may be appropriately identified and managed during the excavation works;
- Evaluation of potential ASS/PASS management opportunities and constraints and the identification of preferred management strategy(ies); and
- Procedures for the management and validation of ASS treatment activities during the future site ground disturbance activities so as to minimise the potential for adverse environmental impacts as a result of the ASS/PASS disturbance activities.

It was identified that where proposed development activities could not be completed without disturbance of marine/estuarine soil deposits, the preferred management strategy would comprise adoption of neutralisation techniques. This will include the mixing of excavated surplus spoil with lime prior to either beneficial reuse as engineered fill material or off-site disposal to a lawful facility in addition to liming of exposed excavation faces.

4.3.27 JBS&G (2019d) Data Gap Assessment, new Sydney Fish Market Site

Subsequent to completion of the site assessment and preparation of the RAP, UGDC obtained access to the site, enabling completion of a data gap assessment to address the uncertainties identified in the above reports.

The scope of work completed for these works included a targeted soil investigation at 13 sampling locations to assess site soils for COPCs and potential ASS conditions; the installation and sampling of 6 new and 4 existing groundwater monitoring wells to further characterise groundwater conditions in relation to the potential for contaminant migration, a 20 sub-slab soil vapour sampling program within the building envelope to assess the potential for soil vapour risks to the future basement, a hazardous ground gas assessment at the 10 groundwater monitoring well locations; a laboratory analysis program and a subsequent data assessment with consideration to the assessment/validation criteria presented in the RAP and ASSMP.

The identified COPCs at this site comprised:

- for soil - heavy metals, PAHs, TRH/BTEX and Tributyltin;
- for groundwater - heavy metals, PAHs and TRH/BTEX; and
- for soil vapour/ground gases – volatile organic compounds (VOCs) and methane, carbon dioxide and hydrogen sulfide.

In addition, ASS characteristics were also evaluated via use of the sPOCAS laboratory method as per ASSMAC (1998). The investigation data was assessed via consideration with NEPC (2013) thresholds for commercial land uses, ASSMAC (1998) for ASS, US EPA Region 9 screening levels for tributyltin compounds, NSW EPA (2012)[24] for ground gases and a combination of ANZAST (2018) and NHMRC (2011) for ecological and human health exposure to groundwater respectively.

Implementation of 10 additional boreholes by drill rig and 3 hand augered boreholes within the former coal loader area identified fill material underlying current ground levels to a depth of between 2.8 m and 5.7 m bgs. The fill material typically comprised of gravelly sand and sandy clay with sandstone and varying levels of ash and slag. The fill was underlain by natural fine-grained silt and sandy clay material (comprising marine sediments) to the maximum depth of the investigation at 7 m bgs. No visible asbestos containing material was identified during the soil assessment activities.

[24] Now superseded by *Assessment and management of hazardous ground gases, contaminated land guidelines,* NSW EPA (2020).

Following laboratory analysis of representative samples, the concentration of COPCs within all historical and current investigation soil samples were below the adopted health based criteria. On this basis, there are no identified impacts to site soils that required management or remediation with respect to making the site suitable for the proposed development. However, it was noted that trace asbestos was detected in a single soil sample (SB06 0.2-1.0) that would require management from an WHS perspective during ground disturbance activities. The need for further consideration for the provision of waste classifications for excess material, including the potential requirements of the NSW EPA in relation to organotin concentrations was also identified.

There were no indications (comprising visual or olfactory) of potential ASS materials within shallow fill based (comprising gravelly sand with sandstone) soils and laboratory analysis of selected representative samples confirmed the site fill materials were classed as non-ASS.

Sulfidic odours and sea shells were observed within saturated silty sand and sandy clay (marine sediments) material as consistent with potential ASS conditions. Laboratory analysis of representative samples confirmed the occurrence of PASS conditions that wouldrequire management if disturbed during the proposed development works.

Groundwater at the site was reported to have a relatively neutral pH, saline characteristics and was relatively low in oxygen. The reported heavy metal, TRH/BTEX and PAH concentrations in groundwater were below the criteria protective of human health at all locations. Generally, the results were less than the adopted ecological criteria with the exception of copper and zinc at a majority of sampling locations and lead at one location. The elevated levels of copper, lead and zinc reported during this investigation are largely consistent with that reported in the previous investigation. Based on the soil analysis results, it was considered unlikely these elevations are a result of previous or current activities at the site. Instead, groundwater metal concentrations were likely to be representative of natural background conditions in the urban environment rather than point source impacts associated with site conditions. On this basis, site groundwater was considered to not require management or remediation with respect to making the site suitable for the proposed development.

Sub-slab vapour probes did not encounter significant odours or indicators of contamination during placement. All sub-slab vapour results were below the laboratory LOR and therefore below the adopted guideline values for this assessment indicating no potential health risks for future occupants of the commercial fish market building via vapour intrusion. Assessment of hazardous ground gas conditions identified the highest GSV values as attributable to carbon dioxide gas with a value of 0.12 L CO_2/hr. Reference to the modified Wilson and Card Classification (EPA 2012), indicated that the reported GSV falls within a 'characteristic gas situation 2' comprising low risk conditions. From a review of Table 7 in EPA (2012), a characteristic gas situation of 2 requires a gas protection value of 3 as applicable to public buildings and shopping centres. Based on the proposed development including a fully tanked basement and the below ground basement level will be ventilated to the standard required under the Building Code of Australia (BCA) with regard to vehicle exhaust fumes, the required gas protection requirements are achieved without further specific design considerations.

Based on the above outcomes, it was concluded that remediation of soil and/or groundwater at the site would not be required to consider the site as suitable for the proposed development. It is noted that the limited investigation activities identified trace concentrations of asbestos at a single sampling (borehole) location. Given the investigation methodology, there is the risk that additional minor areas of asbestos impact may be encountered, however the results are not indicative of significant site wide friable impacts in soil/fill material.

It was recommended that whilst any potential asbestos impacts within site soils will not impact site suitability under the proposed development scheme (via a lack of exposure pathways and/or the

requirements of excavation works for the development), the presence of asbestos fibres in soil will potentially require management during construction activities to address WHS risks.

4.3.28 JBS&G (2019e) Environmental Site Assessment, existing Sydney Fish Market Site

JBS&G was engaged by UGDC to complete an assessment of conditions underlying the current market building to assist with future concept planning activities associated with redevelopment of the site for mixed uses. The site comprised Lot 2 in DP 125720, Lot 1 in DP 74155, Lot 1 in DP734622, Lot 1 in DP 836351 and part Lot 1 in DP 835794 and had a total area of approximately 1.5 Ha.

The scope of work comprised a review of historical site use records; a detailed site inspection; development of a CSM; the installation of a 19 location soil sampling program comprising a combination of systematic and targeted soil investigation locations to characterise site soils for identified COPCs and ASS; the installation and sampling of 8 groundwater monitoring wells and a hazardous ground gas assessment using the installed monitoring wells.

As the site comprised the current building footprint and immediate surrounds, the site was entirely paved with concrete and contained no vegetation. The building was occupied by the market sales area, cold stores, amenities, a seafood school, administration offices and retail tenancies associated with the sale of fresh and cooked seafood. There were no indications of potential underground storage tanks (USTs) present within the building footprint.

Areas of environmental concern at the site were identified as filled/reclaimed ground areas, current and former industrial use areas (timber yard, paper storage, etc), current and former marina areas and an electrical substation situated at the east site extent.

Representative samples of fill material and natural soils within the site were analysed for a range of identified potential contaminants of concern including heavy metals, PAHs, TRH, BTEX, OCP/PCBs and asbestos. The results were compared to the most sensitive potential land use (residential with accessible soil/children's day care centre) scenario criteria presented in NEPC (2013). Groundwater data was compared to ANZAST (2018) marine investigation trigger levels and NHMRC (2012) recreational values. Hazardous ground gas criteria were sourced from EPA (2012), and acid sulfate soil trigger values from ASSMAC (1998).

The 19 boreholes encountered fill material to depths of between 2.8 m to 6.0 m bgs, noting that several sampling locations were terminated on buried secondary slabs at depths of 2.0 m to 2.8 m bgs. As this slab could not be penetrated with the adopted drilling methods, no additional sampling was completed beneath these features. It is noted that above this secondary slab, the fill material comprised yellow sand material with no inclusions. Across the balance of the site, the fill material was typically identified as a gravelly sand or sandy clay with sandstone gravel inclusions and varying levels of ash, slag, brick, concrete, glass and wood inclusions.

Within the main Fish Market building footprint, the fill material was generally underlain by marine/estuarine fine-grained silty and sandy clay to the maximum drilling depths of 8.0 m bgs. Wet to saturated conditions were noted at depths of 2.2 m to 3.0 m bgs in both fill and natural soil.

There was no significant evidence of staining observed within the fill/soil profile during the works. Minor hydrocarbon like odours were noted in a single borehole at a depth of approximately 3.2-3.4 m bgs. One small asbestos cement fragment was identified within fill material at a depth of 0.4 – 1.0 m bgs at one location.

Fill material impacted with lead exceeded the human health based generic land-use criteria applicable to residential land-use with accessible soils (HIL-A) and in several instances, the public open space (HIL-C) criteria. Statistical analysis of the data set identified the lead concentrations were significant with respect only to the HIL-A land use scenario. In addition, PAHs (carcinogenic and total PAHs) in fill materials were also reported to exceed the human health criteria applicable to each land-use (HIL-A, HIL-B, HIL-C and HIL-D) assessed as part of this investigation. Heavy fraction (>C_{16}-

C_{34}) total recoverable hydrocarbon (TRH) concentrations in a range of fill materials were reported to exceed the adopted ecological criteria for urban residential areas.

It was recommended that further consideration would be required, once the design plans have been finalised, to assess if the above identified constituents pose an unacceptable risk to future on-site receptors. It is noted that in the absence of any exposure pathways (due to presence of slab across the extent of the site) to site soils for current on-site human receptors (commercial workers and patrons at the Fish Markets), the identified lead and PAH impacts identified herein, do not present an unacceptable health risk to site users. Trace levels of asbestos in soil at one sampling location and an ACM fragment in fill material at one location indicated the potential for further asbestos impacts within fill material that will require management from at least an occupation exposure view point during future demolition and earthworks activities.

With the exception of copper, zinc, and PFOS, the concentrations of COPCs within site groundwater samples collected as part of this assessment were below the adopted ecological and human exposure criteria. It was considered that groundwater metal concentrations are likely to be representative of natural background conditions in the urban city environment. PFOS was reported to marginally exceed the marine ecosystem criterion of 0.13 µg/L at the upgradient well location, potentially indicating an off-site source of the impact. Notwithstanding, all wells downgradient of this location reported PFOS concentrations below the adopted criteria. On this basis, site groundwater is considered not to require specific management or remediation with respect to making the site suitable for the land-uses assessed as part of this investigation.

A limited hazardous ground gas assessment was completed, in which the highest Gas Screening Values (GSV) values recorded during the monitoring event were attributable to methane gas and comprised a value of 0.01 CH_4/hr. Reference to the modified Wilson and Card Classification (EPA 2012), indicated that the reported GSV falls within a 'characteristic gas situation 1' comprising very low risk conditions. From a review of Table 7 in EPA (2012), a characteristic gas situation of 1 does not require any gas protection features within residential buildings, public and commercial buildings or shopping centres.

Natural soil/sediment that may require excavation during potential future redevelopment works will comprise Potential Acid Sulfate Soils (PASS). Fill material conditions were inconsistent with ASS occurrence. Where disturbed during development works, this material will require management in accordance with an ASSMP. Further, if material is to be removed from site, this material will require off-site disposal to a NSW EPA licensed waste facility unless opportunities for a site specific resource recovery exemption may be identified (and approved by the NSW EPA).

It was concluded that there were no indications of significant and/or widespread contamination impacts at the site which might result in remediation requirements/liabilities outside the normal development assessment and approval framework. Subject to further assessment as specific to the finalised design plans and if necessary, the preparation and implementation of a remedial action plan (RAP), it is considered that the site could be made suitable for a mixed residential, open space and commercial development.

5. Site Data Evaluation and Discussion

5.1 Previous Assessments

A review and evaluation of data usability for all currently available reports previously prepared for the Blackwattle Bay Study Area, or parts thereof has been provided in **Section 4**. This evaluation, in conjunction with the desktop evaluation of current site characteristics as presented in **Section 3**, has identified that for the most part, previous data collection activities have been completed and documented in a manner suitable to support the development of a CSM of site contamination potential. Where it has been identified that the available documentation is insufficient to directly rely upon the data, the presented data should still be considered in the development of future detailed site investigation activities to confirm site contamination characteristics.

5.2 Conceptual Site Model

The *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013* (NEPC 2013) identifies a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments.

NEPC (2013) identifies the essential elements of a CSM as including:

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination;
- Potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air);
- Human and ecological receptors;
- Potential and complete exposure pathways; and
- Any potential preferential pathways for migration.

The following sections present these elements for the site which when considered together comprise the site CSM for the purposes of this assessment.

5.2.1 Areas of Known and/or Potential Concern

APECs and COPCs have been identified for areas/properties within the site on the basis of the identified former and current sites uses and available site assessment information. Constituents of Potential Concern have been identified in general accordance with the DUAP (1998[25]) *Appendix A: Industries and Chemicals Used*, with consideration of the specific history of the relevant property.

Table 5.1: Identified Site Areas of Potential Concern and Associated COPCs

Area of Potential Environmental Concern (APEC)	Constituents of Potential Concern (COPCs)
Placed fill and reclaimed land areas across the site	Heavy metals, Per- and polyfluoroalkyl substances (PFAS), TPH/VOCs, PAHs, OCPs, herbicides, PCBs, asbestos, ASS and ground gases
Former coal wharf/loader (Lot 3 DP1064339)	Heavy metals, TPH/VOCs, PAHs, asbestos and TBT
Current and former concrete batching plants	Heavy metals, TPH/VOCs, PAHs, solvents, asbestos and TBT
Current and former industrial areas including petroleum product storage, timber yards, waste transporting, shipping, marine repairs, etc.	Heavy metals, PFAS, TPH/VOCs, PAHs, VOCs, OCPs, herbicides, PCBs, cyanide and asbestos
Marina Areas	Heavy metals, TPH/VOCs, PAHs, asbestos, TBT and solvents

[25] *Managing Land Contamination: Planning Guidelines, SEPP 55-Remediation of Land*. Depart of Urban Affairs and Planning, 1998 (DUAP 1998)

Area of Potential Environmental Concern (APEC)	Constituents of Potential Concern (COPCs)
Known/suspected current and former petroleum based storage and dispensing facilities	TPH/VOCs, PAHs, lead and phenols
Impacted sediments	TRH, PAHs and heavy metals. PASS

5.2.2 Source of Impacts

Heavy Metals and PAHs

Potential heavy metals and PAH sources are detailed in **Table 5.1** above. General potential sources of heavy metals and PAHs across the site include:

- fill used during land reclamation;
- general imported fill materials;
- general industrial land uses;
- ash/slag type waste materials associated with historical wood and coal fired boilers/metal smith workshops as would have been present associated with industries historically located on site and around the Bays; and
- the importation of waste for use as filling sourced from nearby historical industrial use facilities such as the White Bay, Ultimo and Pyrmont Power Stations, railway and marine maintenance and construction activities, emoleum (bitumen) plants, oil terminals, tar pits, gas works and acid baths/scaling works.

Petroleum Hydrocarbons (TRH/TPH)

Potential TPH sources are detailed in **Table 5.1** and may also include the following:

- fill used during land reclamation and general imported fill materials used to create current site levels;
- fuel, oil/lubricant and solvent storage and terminal facilities;
- substations and transformers;
- petroleum storage and dispensing infrastructure including USTs and ASTs and associated bowsers (former and current);
- former bitumen plants;
- specific industrial uses such as marine and vehicle maintenance and construction activities, emoleum/bitumen plants, creosote treatment of timber, tar pits, gas works, timber yards etc; and
- maintenance of industrial machinery/infrastructure associated with former and current industrial operations.

Volatile Organic Compounds (VOCs) including Monocyclic Aromatic (BTEX) Hydrocarbons

Potential VOC sources are detailed in **Table 5.1** and may include the following:

- general industrial land uses including maintenance of industrial machinery and infrastructure;
- fuel, oil/lubricant and solvent storage facilities;
- substations and transformers; and
- metal workings.

Asbestos

Potential asbestos sources are detailed in **Table 5.1** and may include the following:

- fill used during land reclamation and general imported fill materials used to create current site levels;
- general industrial land uses;
- inappropriate waste management during demolition of former buildings and associated infrastructure (Telstra pits, stormwater/fire hydrant pipework, conduits, formwork, etc); and
- specific industrial uses such as marine maintenance and repair works, boiler houses, furnace linings, transformer and substation facilities.

Pesticides and Herbicides (OCPs, OCPs)

Potential herbicides and OCP/OPP sources are detailed in **Table 5.1** and may include the following:

- fill used during land reclamation and general imported fill materials used to create current site levels;
- general industrial land uses;
- site maintenance activities within marina yard, waste storage areas, and parkland areas; and
- Specific spraying activities during/following unloading of cargo including food goods, seafood, timber and other products at the wharves.

PCBs

Potential PCB sources are detailed in **Table 5.1** and may include the following:

- fill materials;
- general industrial land use; and
- transformers.
- the importation of waste for use as filling sourced from specific industrial uses such as the White Bay Power Station, marine maintenance and repair works, transformer and substation facilities.

Organotin Compounds including TBT

Potential TBT sources are detailed in **Table 5.1** and may include the following:

- Marine maintenance activities associated with the use, storage and removal of anti-fouling paints; and
- Presence of marine sediments underlying sites as a result of dredging and/or filling over the top of former marine sediments during reclamation activities during the period following commencement of use of TBT (1950s).

Ground Gases

Potential ground gas sources are detailed in **Table 5.1** and include the following:

- areas of low lying mud flats where organic rich sediments were subsequently isolated by land reclamation activities resulting in anaerobic decomposition of the organic content of the sediment; and
- areas where putrescible waste was buried during land reclamation/filling activities, including potentially waste from land clearing, domestic waste, organic based industrial waste and/or abattoir waste.

Acid Sulfate Soils

Potential acid sulfate soils sources are detailed in **Table 5.1** and may include the following:

- marine and/or alluvial soil deposits that were subsequently isolated by land reclamation and/or filling activities;
- areas where dredging of marine and/or alluvial sediments were completed during land reclamation activities and the dredged material was subsequently placed as fill material; and
- current seabed areas within the waterborne areas of the site.

5.2.3 Potentially Impacted Media

Potentially impacted media have been identified as the following:

- soils;
- sediments;
- groundwater;
- surface water; and
- vapours (indoor and ambient air).

The potential extent and degree to which the identified contamination sources may result in unacceptable impacts to the various media above is a reflection of a range of factors including the total contaminant mass, the lateral and vertical extent of impact, the mobility of the contaminant and opportunities available for migration, etc.

5.2.4 Potential Human and Ecological Receptors

Potential human populations whom may be exposed to contaminant impacts in the future (if they are not remediated or appropriate management is not implemented prior to or during development within specific areas of the Blackwattle Bay Study Area) include:

- Potential future occupants where residential development occurs;
- Future and current recreational users of public open spaces (including road reserves, parkland, public walkways, plazas, etc);
- Future and current recreational users of water bodies located within the site;
- Future and current construction and site maintenance workers;
- Future and current workers present in commercial/industrial developments, community facilities or open spaces; and
- Future and current workers present in sub-surface excavations/infrastructure channels, basement/tunnel/service pit areas, and any other zones comprising potential confined spaces.

Exposure pathways for human receptors are anticipated to occur in the range from inhalation, ingestion or direct (dermal) contact with impacted media present within the site. This may include the potential for dermal contact with and ingestion of impacted soils / groundwater as present at shallow depths and/or accessible by future excavations by site workers, visitor and/or occupants or the potential inhalation of vapours migrating upwards and laterally from fill and/or natural soils.

Potential on-site ecological receptors and exposure pathways include:

- current public open and future public and/or private open spaces that may occur with redevelopment of the site, inclusive of all landscaped areas with soil contact. Land-based ecological receptors may be exposed to environmental impact through direct contact and/or

ingestion of contaminated soil and/or groundwater. These exposure pathways could potentially result in bioaccumulation where higher trophic organisms feed/predate on organisms exposed to environmental impacts (if present) at the site;

- waterbodies and their associated floral and fauna, as may potentially be impacted by sediment and surface water, in addition to migration from land based areas of groundwater, surface water and vapours discharged from land areas. Organisms living within estuarine systems have the ability to bioaccumulate contaminants from both pore waters, groundwater and overlying surface waters, as well as via ingestion of sediment particles and food.

5.2.5 Potential Preferential Pathways for Migration

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses. Man-made preferential pathways are likely present throughout the Site, generally associated with areas of previously disturbed fill material and service easements.

5.3 Evaluation of Existing Characterisation Data to Address CSM

To assess the suitability of the existing data sets as discussed in previous sections to adequately identify potential contamination conditions required to be addressed in a Site Wide Remedial Concept Plan (SWRCP), a qualitative evaluation of the CSM has been completed as summarised in **Table 5.2** following.

Table 5.2: Blackwattle Bay CSM – Data Set Suitability Evaluation

Areas of Potential Environmental Concern (APECs)	Constituents of Potential Concern (COPCs)	Potentially Impacted Media	Data Status	Comment/Conclusion
Fill and reclaimed land	Heavy metals, TPH/VOCs, PAHs, OCPs, herbicides, PFAS, PCBs, asbestos, ASS and ground gases	Fill (source), natural soil/rock, groundwater and vapour	Existing data set characterise broad fill material contaminant risks to media across majority of the Study Area. Limited spatial data gaps remain on private properties and in some instances beneath existing buildings. Fill material has been identified on the sea bed in a number of areas, via previous investigation works targeted to areas of proposed disturbance and/or general characterisation of bay conditions.	Data set suitable to guide the SWRCP on requirements to address contaminated fill material impacts. Impacts associated primarily with heavy metals, PAHs, TRH and to a lesser extent asbestos. Further data gaps remain as primarily related to potential PFAS impacts, which are to be addressed within the framework of the SWRCP.
Former coal wharf	Heavy metals, TPH/VOCs, PAHs, asbestos and TBT	Fill, natural soil/rock, groundwater and vapour	The combined data sets provide sufficient characterisation of broad contaminant conditions at the site in relation to the proposed new fish markets development scheme.	Data set suitable to guide the SWRCP on requirements to address impacts associated with historical site, noting that further detailed discussion of management requirements for this area has been advanced with regard to the new fish markets proposal.
Current and former concrete batch plants	Heavy metals, TPH/VOCs, PAHs, solvents, asbestos and TBT	Fill, natural soil/rock, groundwater and vapour as impacted media.	Limited site characterisation data presented in JBS&G (2015) for RMS leased portions of the Banks St premises. Data gap for all potentially contaminated media associated with this portion. Characterisation of conditions within the Bridge Rd premises has been completed to a sufficient level of detail to enable decision making with regard to the proposed new fish markets development scheme.	Data Gap relating to the Banks St premises. Given the limited scale of the properties, site assessment and remediation principles may be included in the SWRCP to provide guidance on potential requirements for this premises. Data set for the Bridge Rd premises is suitable with regard to the new fish markets proposal.
Current and former industrial areas	Heavy metals, TPH/VOCs, PAHs, VOCs, OCPs, herbicides, PCBs, PFAS and asbestos	Fill, natural soil/rock, groundwater and vapour	The existing collated data set broadly characterises potentially impacted media across the majority of the Stud Area. Limited spatial data gaps remain on private properties. Limited data gaps remain with respect to soil vapour as potentially impacted media in portions of the site.	Data set suitable to guide the SWRCP on requirements to address media known and/or potentially impacted as a result of historical industrial activities, primarily associated with heavy metals, PAHs, TRH/VOCs. Identified data gaps will be further discussed in the SWRCP.
Marina Areas	Heavy metals, TPH/VOCs, PAHs, asbestos, TBT and solvents	Fill, natural soil/rock, groundwater, sediment and vapour	The collated existing data set broadly characterise potentially impacted media within these portions of the Study Area. As identified above, there are a number of spatial data gaps and limited data available on soil vapour conditions, however existing soil, sediment and groundwater data indicates limited presence of volatile COPCs, such that this is not a major concern in relation to development of the SWRCP.	As above, the data set is considered suitable to guide the development of a SWRCP. Acknowledgement of existing data set limitations will be included such that prior to development of a detailed remedial strategy for the relevant areas of the site, appropriate data may be collected to provide for detailed characterisation of current conditions in relation to the proposed future use.

6. Conclusions and Recommendations

Based on the scope of work completed for this assessment and subject to the limitations in **Section 7**, the following conclusions are provided:

- Given the proximity of the Blackwattle Bay Study Area to the Sydney CBD and the initial location of Sydney colony, portions of the Blackwattle Bay Study Area have a long and often varied history of uses that may contribute to current site contamination characteristics. Broadly, the site was subject to land reclamation activities in the period from approximately 1880s to the 1920s. From the 1900s, the eastern portion of the site contained an oil storage and distribution facility as well as various commercial operations that included a timber merchants, abattoirs and a garbage collector's yard. In the 1960s, the oil storage facility was replaced with the current Sydney Fish Market as well as a concrete batching plant and various commercial properties that continue to operate at the present time.
- Assessment of site conditions as based on historical investigations completed across the site has allowed for the broad characterisation of potential site contamination conditions associated with historical activities at the site. As such, it is considered that for the most part, previous data collection activities have been completed and documented in a manner suitable to support the development of a CSM of site contamination potential.
- The CSM presented in **Section 5**, identified several APECs across the site as associated with historically placed fill and reclaimed land, the former coal wharf, current and former concrete batch plants, current and former industrial areas, marine areas, known/suspected current and former petroleum based storage and dispensing facilities as well as impacted sediments.
- The APECs may have caused impacts to site soils, sediments, groundwater, surface water and soil vapour conditions that will require further assessment and if considered necessary based on detailed land use proposals, potential management (during the redevelopment of the individual lots within the Blackwattle Bay Study Area.
- Notwithstanding, the range of potential constituents and media affected are common and typically encountered on brownfield redevelopment sites in the Sydney basin. The potential contamination is unlikely to be of such a scale or occurrence that common and readily available remediation and/or management techniques could not render the site, or portions thereof, suitable for the proposed uses. As such, the potential for contamination to occur at the site is considered not to preclude planning of the future development of the site.
- It is recommended that a SWRCP be prepared for the Blackwattle Bay Study Area in order to establish a suitable framework for management of potentially contaminated media in order to facilitate the staged redevelopment of the Blackwattle Bay Study Area.
- Upon the development of specific development plans for individual site areas, the existing available data set for the relevant areas should be reviewed in conjunction with the overall site remedial strategy, such that a specific assessment of site contamination issues may be completed and remedial actions and/or management plans be developed to demonstrate the respective site portion is, or can be made, suitable for the proposed use.

7. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures

Source: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA

0 375 750 1,500 m

Scale:1:35,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
1	Original Issue - R03	RF	10-12-2020

Legend:

- The Bays Precinct Site Boundary
- Blackwattle Bay Study Area "Site Boundary"

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Figure 1: Site Location

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_01

Source: Base Image - www.nearmap.com - 20170822

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Scale:1:3,540

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area"Site Boundary"
- Cadastre (DFSI, 2020)

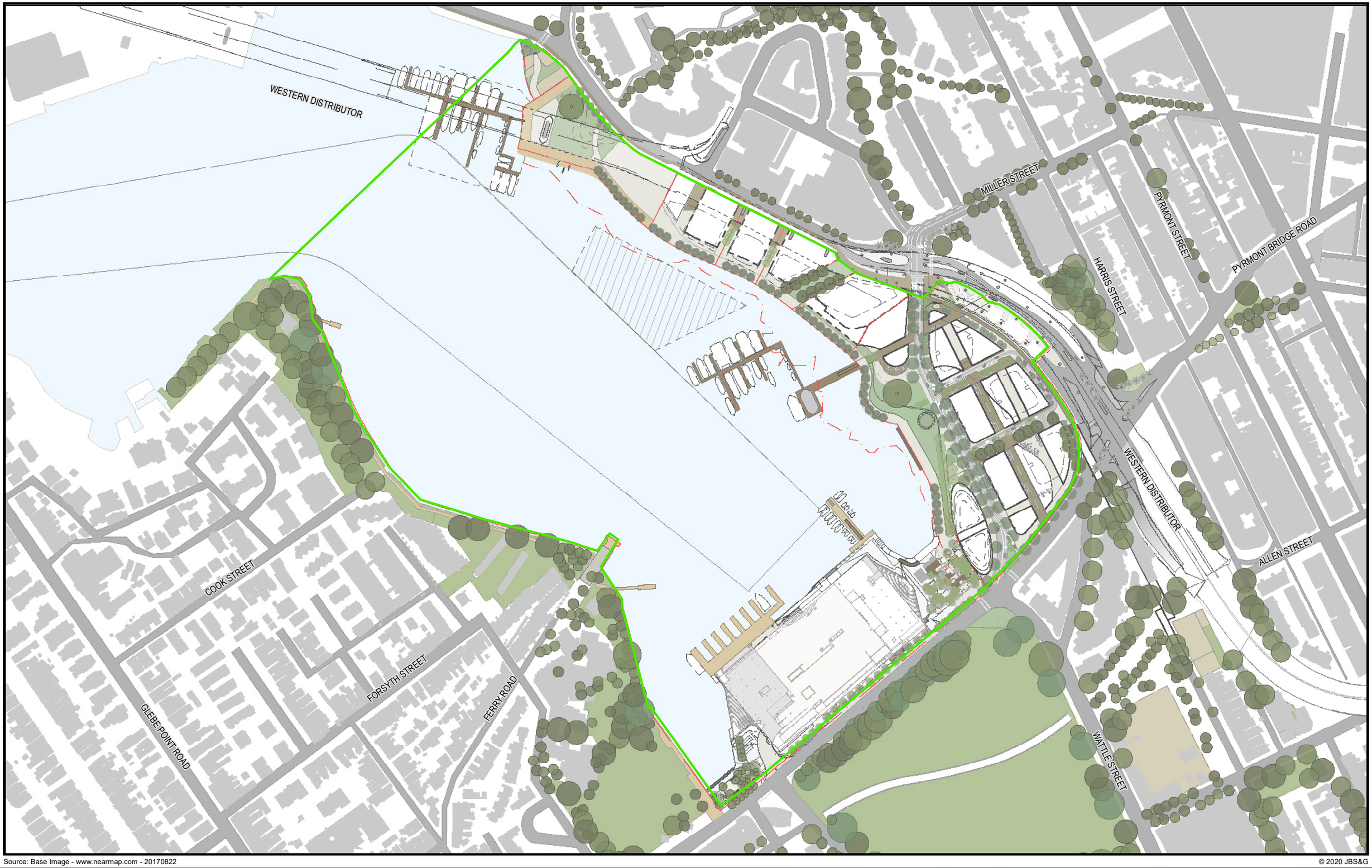
JBS&G

Figure 2a: Current Site Layout

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_02a



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Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"

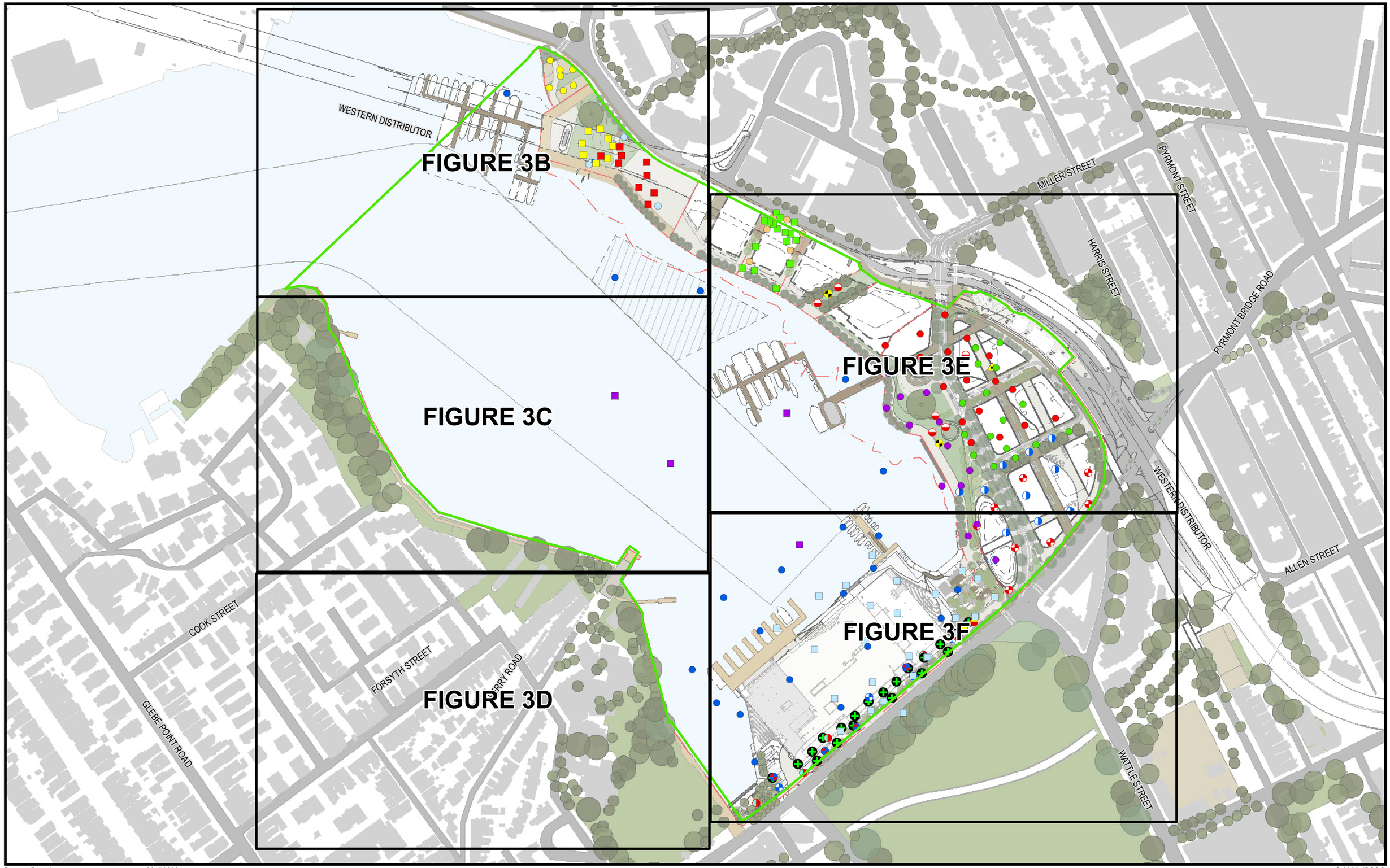
JBS&G

Figure 2b: Proposed Site Layout

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_02b_ProposedSiteLayout



Source: Base Image - www.nearmap.com - 20170822

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Scale:1:3,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"
- Sample Location - EIS (2017)
- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
- Sample Location - EIS (2010a)
- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G (2015)
- Soil Sampling / Monitoring Well - JBS&G (2015)
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G (2015)
- Soil Sampling / Soil Vapour - JBS&G (2015)
- Soil Sample Location (2019a)
- Soil Sample Location (Hand Auger) (2019a)
- Groundwater and Ground Gas and Soil (2019a)
- Groundwater and Ground Gas (2019a)
- Sub-Slab Vapour Sample Location (2019a)
- Borehole Locations - JBS&G (2019b)
- Borehole/Groundwater Monitoring Well Locations - JBS&G (2019)

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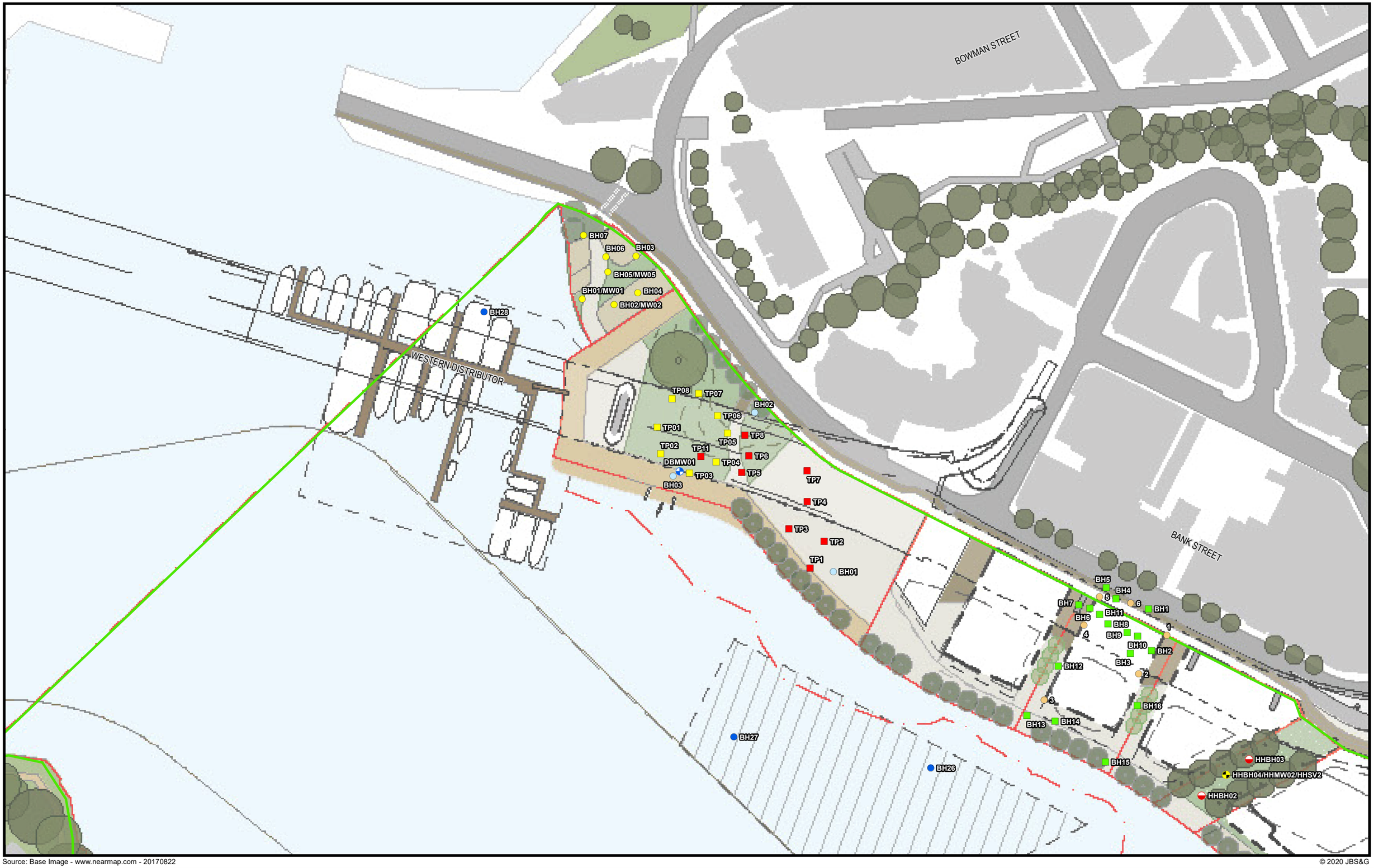
Figure 3A: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03A_PreviousSample



Source: Base Image - www.nearmap.com - 20170822

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Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"
- Sample Location - EIS (2017)
- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
- Sample Location - EIS (2010a)
- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G 2015
- Soil Sampling / Monitoring Well - JBS&G 2015
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G 2015
- Soil Sampling / Soil Vapour - JBS&G 2015
- Soil Sample Location 2019a
- Soil Sample Location (Hand Auger) 2019a
- Groundwater and Ground Gas and Soil 2019a
- Groundwater and Ground Gas 2019a
- Sub-Slab Vapour Sample Location 2019a
- Borehole Locations - JBS&G 2019b
- Borehole/Groundwater Monitoring Well Locations - JBS&G 2019

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Figure 3B: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03B

Source: Base Image - www.nearmap.com - 20170822

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Scale:1:1,650

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"
- Sample Location - EIS (2017)
- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
- Sample Location - EIS (2010a)
- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G (2015)
- Soil Sampling / Monitoring Well - JBS&G (2015)
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G (2015)
- Soil Sampling / Soil Vapour - JBS&G (2015)
- Soil Sample Location (2019a)
- Soil Sample Location (Hand Auger) (2019a)
- Groundwater and Ground Gas and Soil (2019a)
- Groundwater and Ground Gas (2019a)
- Sub-Slab Vapour Sample Location (2019a)
- Borehole Locations - JBS&G (2019b)
- Borehole/Groundwater Monitoring Well Locations - JBS&G (2019)

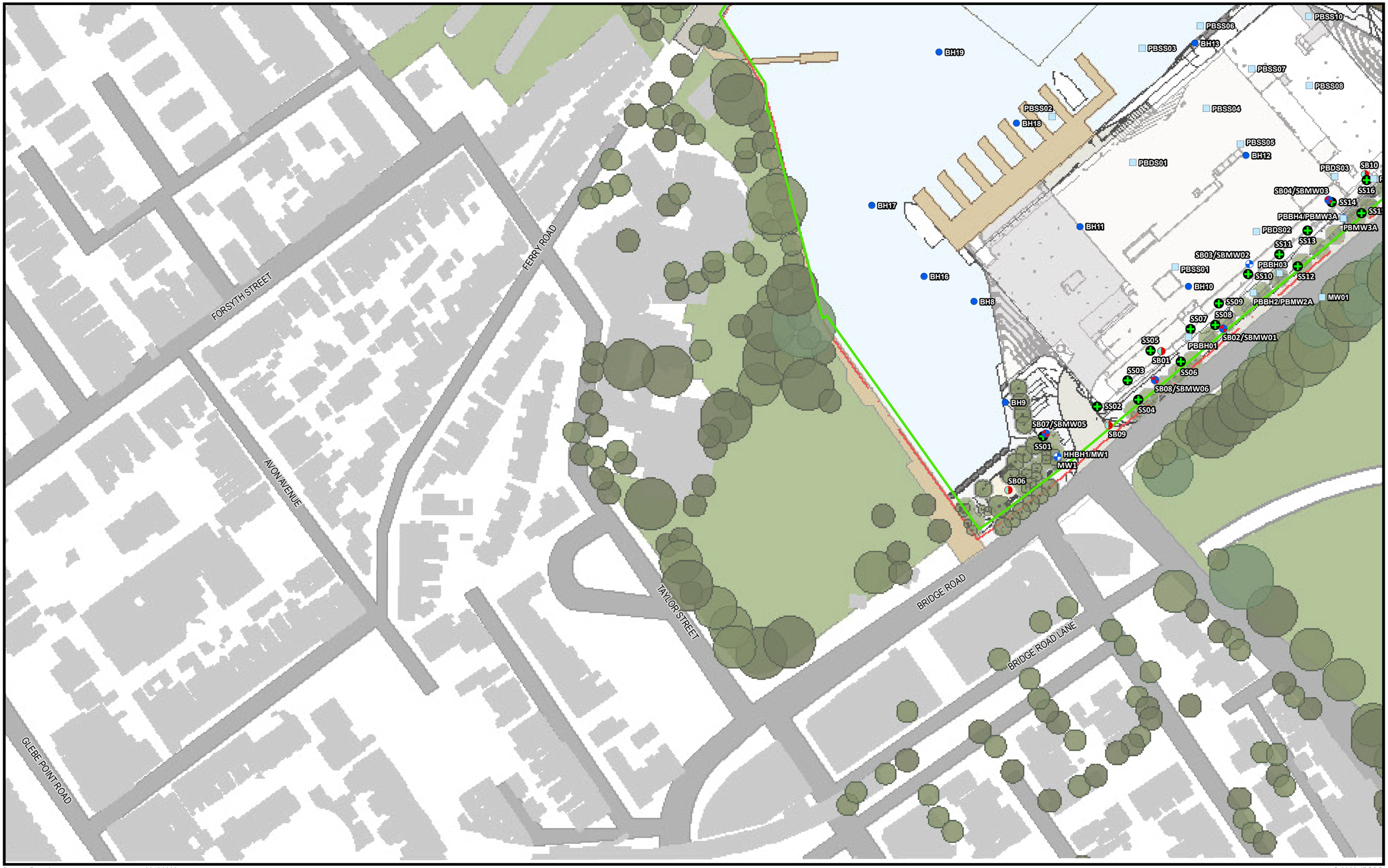
JBS&G

Figure 3C: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03C



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Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"
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- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
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- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G 2015
- Soil Sampling / Monitoring Well - JBS&G 2015
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G 2015
- Soil Sampling / Soil Vapour - JBS&G 2015
- Soil Sample Location 2019a
- Soil Sample Location (Hand Auger) 2019a
- Groundwater and Ground Gas and Soil 2019a
- Groundwater and Ground Gas 2019a
- Sub-Slab Vapour Sample Location 2019a
- Borehole Locations - JBS&G 2019b
- Borehole/Groundwater Monitoring Well Locations - JBS&G 2019

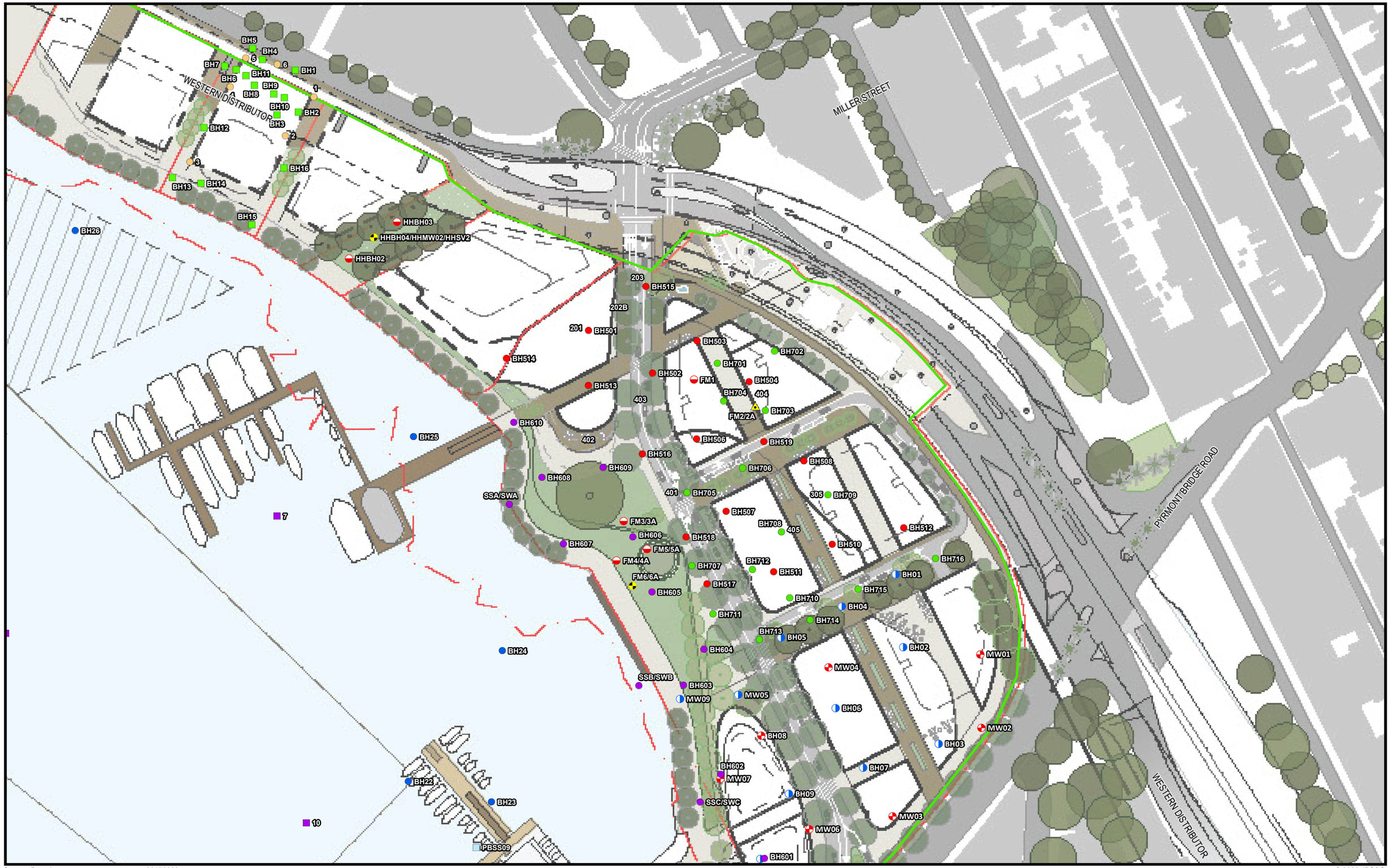
JBS&G

Figure 3D: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03D



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Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R04	RF	10-12-2020

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- Blackwattle Bay Study Area "Site Boundary"
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- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
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- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G (2015)
- Soil Sampling / Monitoring Well - JBS&G (2015)
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G (2015)
- Soil Sampling / Soil Vapour - JBS&G (2015)
- Soil Sample Location (2019a)
- Soil Sample Location (Hand Auger) (2019a)
- Groundwater and Ground Gas and Soil (2019a)
- Groundwater and Ground Gas (2019a)
- Sub-Slab Vapour Sample Location (2019a)
- Borehole Locations - JBS&G (2019b)
- Borehole/Groundwater Monitoring Well Locations - JBS&G (2019)

JBS&G

Figure 3E: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03E

Source: Base Image - www.nearmap.com - 20170822

0 15 30 60 m

Scale:1:1,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
1	Original Issue - R03	RF	10-12-2020

Legend:

- Blackwattle Bay Study Area "Site Boundary"
- Sample Location - EIS (2017)
- Sample Location - DP (2016)
- Sample Location - CDM (2012b)
- Sample Location - E3C (2012)
- Sample Location - EIS (2010a)
- Sample Location - EIS (2010b)
- Sample Location - EIS (2010c)
- Sample Location - RCA (2011)
- Sample Location - NAA (2010)
- Sample Location - PB (2009)
- Sample Location - Umwelt (2008)
- Sample Location - GHD (1997)
- Soil Sampling - JBS&G (2015)
- Soil Sampling / Monitoring Well - JBS&G (2015)
- Soil Sampling / Monitoring Well / Soil Vapour - JBS&G (2015)
- Soil Sampling / Soil Vapour - JBS&G (2015)
- Soil Sample Location (2019a)
- Soil Sample Location (Hand Auger) (2019a)
- Groundwater and Ground Gas and Soil (2019a)
- Groundwater and Ground Gas (2019a)
- Sub-Slab Vapour Sample Location (2019a)
- Borehole Locations - JBS&G (2019b)
- Borehole/Groundwater Monitoring Well Locations - JBS&G (2019b)

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Figure 3F: Previous Site Sampling Locations Plan

Client: Infrastructure NSW

Project: Blackwattle Bay Study Area

Job No: 54162 File Name: 54162_03F

Appendix A – Summary Analytical Tables

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay Precinct
Table A1 - Historical Soil Investigation Data

Location	Depth (m)	DESCRIPTION	Date	Heavy Metals: Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	PAHs: Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	-phthalene	Phenanthrene	Pyrene	Total PAHs
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL				4	0.5	1	1	1	0.1	1	1	0.1	0.1	0.1	0.1	0.05	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-
NEPC 1999 Soil HIL D (minimal access residential)				400	80	400	4000	1200	60	2400	28000					4											80
NEPC 1999 Soil HIL E (Parks and Open Space)				200	40	200	2000	600	30	600	14000					2											40
NEPC 1999 Soil HIL F (commercial/industrial)				500	100	500	5000	1500	75	3000	35000					5											100
EPA 1994																											
GHD (1997)																											
BH1	0.3-0.4	Fill: Ash	Nov-97	8	1	-	75	470	0.41	-	650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH1	0.5-0.7	Fill: Clayey Sand	Nov-97	5.5	<0.5	-	17	310	1.2	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.2-0.3	Fill: Ash	Nov-97	5.5	<0.5	-	48	61	0.05	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.5-0.6	Fill: Ash	Nov-97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	1.9-2.1	Fill: Clayey Sand	Nov-97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0.5-0.6	Fill: Ashy Sand	Nov-97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0.9-1.1	Fill: Clayey Sand	Nov-97	4	<0.5	-	42	870	0.06	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0.3-0.4	Fill: Clayey Sand	Nov-97	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0.8-1.0	Fill: Clayey Sand	Nov-97	4.5	<0.5	-	12	28	0.11	-	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	0.9-1.1	Fill: Sand	Nov-97	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	2.2-2.35	Fill: Sand	Nov-97	3.5	<0.5	-	3	4	0.015	-	9.5	<0.1	<0.1	<0.1	0.16	1.7	-	0.14	0.15	<0.1	0.23	<.1	0.18	-	0.12	0.27	1.7
BH6	0.3-0.4	Fill: Gravelly Sand	Nov-97	8.5	<0.5	-	29	140	0.22	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	0.5-0.7	Fill: Sandy Gravel	Nov-97	4	<0.5	-	9	33	0.14	-	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	2.8-3.1	Natural: Sandstone	Nov-97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	0.15-0.25	Fill: Gravelly Sand	Nov-97	8	1	-	140	230	0.1	-	1000	0.35	0.79	1.1	1.6	2.4	-	1.8	1.5	0.23	3.3	0.95	2	-	2.6	4	53
BH9	0.8-1.0	Fill: Sand	Nov-97	4.5	<0.5	-	35	53	0.42	-	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	0.3-0.4	Fill: Roadbase	Nov-97	5	<0.5	-	35	60	0.07	-	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	0.9-1.1	Fill: Clayey Sand	Nov-97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	0.3-0.4	Fill: Sand	Nov-97	5.5	<0.5	-	48	130	0.61	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.3-0.4	Fill: Ripped Sandstone	Nov-97	5.5	<0.5	-	100	120	0.31	-	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.8-1.0	Fill: Ripped Sandstone	Nov-97	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	1.5-0.6	Fill: Ripped Sandstone	Nov-97	4	<0.5	-	23	85	0.16	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	2.5-2.6	Fill: Ripped Sandstone	Nov-97	4.5	<0.5	-	46	140	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	0.1-0.4	Fill: Concrete Footing	Nov-97	7	1	-	47	450	0.1	-	430	<0.1	0.22	0.22	0.73	0.89	-	0.63	0.73	<0.1	1.2	<0.1	0.63	-	0.54	1.2	8.3
BH14	0.5-0.6	Fill: Clayey Sand	Nov-97	5	0.5	-	15	120	0.34	-	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	0.1-0.2	Fill: Old Pier	Nov-97	61	3	-	1250	1980	0.12	-	12000	<0.1	0.43	0.27	0.46	0.86	-	0.7	0.54	<0.1	0.71	0.1	0.7	-	0.21	0.82	7
BH15	1.2-1.3	Fill: Slag	Nov-97	18	1.5	-	200	690	0.11	-	2850	0.38	0.93	1.9	6.7	3.2	-	5.2	6.6	0.76	11	0.41	5.2	-	4.5	12	75
BH16	0.1-0.2	Fill: Sand	Nov-97	9	1.5	-	165	390	0.03	-	1650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EIS (2010a)																											
BH501	0.5-0.95	Fill: sand	Jun-10	7	<0.5	24	46	140	0.4	19	150	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	5.5
BH501	1.5-1.95	Fill: sand	Jun-10	7	<0.5	23	9	28	0.1	2	26	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	0.05
BH502D	0.3-0.8	Fill: sandy gravel	Jun-10	11	<0.5	9	73	230	0.1	7	160	-	-	-	-	0.043	-	-	-	-	-	-	-	-	-	-	3.4
BH503	0.1-0.4	Fill: gravelly sand	Jun-10	<4	<0.5	11	120	98	0.2	14	160	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	1.5
BH504D	0.2-0.5	Fill: gravelly sand	Jun-10	4	<0.5	13	71	58	<0.1	11	34	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	6.5
BH504	0.5-0.95	Fill: gravelly sand	Jun-10	7	<0.5	11	130	170	0.5	4	93	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	149.7
BH504	1.3-1.6	Fill: sandy gravel	Jun-10	11	0.5	14	600	230	0.3	18	270	-	-	-	-	5.7	-	-	-	-	-	-	-	-	-	-	55.5
BH504	1.6-1.95	Fill: silty sand	Jun-10	1300	1.7	9	300	260	40	6	280	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	0.06
BH506	0.5-1.0	Fill: gravelly sand	Jun-10	<4	<0.5	31	16	9	<0.1	23	22	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH506	1.85-2.05	Fill: gravelly sand	Jun-10	9	<0.5	8	11	52	<0.1	3	7	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	1.6
BH507	0.5-0.8	Fill: gravelly sand	Jun-10	<4	<0.5	60	25	17	<0.1	45	54	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH507	1.6-2.05	Fill: gravelly sand	Jun-10	<4	<0.5	13	76	130	0.3	8	340	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	7.7
BH507	3.0-3.45	Silty sand	Jun-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH508D	0.3-0.5	Fill: gravelly sand	Jun-10	5	<0.5	15	110	130	0.2	20	120	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5.7
BH508	1.5-1.95	Fill: silty sand	Jun-10	<4	<0.5	9	50	39	<0.1	4	110	-	-	-	-	0.09	-	-	-	-	-	-	-	-	-	-	0.29
BH510	1.0-1.45	Fill: gravelly sand	Jun-10	11	<0.5	19	47	170	2	6	72	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	27.8
BH510	3.0-3.45	Fill: gravelly sand	Jun-10	5	1.8	15	120	210	1.1	8	160	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	18.1
BH511	0.3-0.8	Fill: gravelly sand	Jun-10	4	<0.5	52	62	87	0.3	43	97	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	1.3
BH511	1.5-1.95	Fill: gravelly sand	Jun-10	4	<0.5	7	58	110	0.3	3	68	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	8
BH511	3.0-3.45	Fill: gravelly sand	Jun-10	25	<0.5	85	74	390	1.6	31	140	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	9.5
BH511	4.5-4.95	Silty sand	Jun-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH512	0.32-0.4	Fill: gravelly sand	Jun-10	<4	<0.5	2	33	71	0.2	1	130	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	6.1
BH512	0.9-1.0	Fill: gravelly sand	Jun-10	6	<0.5	8	100	300	1.7	4	160	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	14.1
BH512	1.4-1.5	Fill: sand	Jun-10	<4	0.5	6	25	56	0.4	1	330	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	15.3
BH512	2.9-3.0	Fill: sandy clay	Jun-10	5	0.9	11	65	230	0.4	9	1500	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	11.8
BH513	1.1-1.5	Fill: silty clayey sand	Jun-10	<4	<0.5	5	6	24	<0.1	1	5	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH514	0.5-0.9	Fill: clayey gravelly sand	Jun-10	5	<0.5	14	16	45	0.4	4	41	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	2.2
BH514	1.0-1.45	Fill: silty sand	Jun-10	<4	<0.5	8	7	21	<0.1	6	44	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH515	0.5-0.95	Fill: gravelly sand	Jun-10	<4	<0.5	8	13	31	0.1	3	31	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH516	0.5-0.9	Fill: silty sand	Jun-10	5	<0.5	25	31	85	0.2	25	280	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	2.57
BH516	1.1-1.4	sand	Jun-10	<4	<0.5	10	3	16	<0.1	2	40	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	1.98
BH517	0.2-0.5	Fill: gravelly sand	Jun-10	<4	<0.5	22	49	5	<0.1	150	49	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH517	0.5-0.95	Fill: sand	Jun-10	6	<0.5	3	<1	1	<0.1	1	2	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH517	1.5-1.95	Fill: gravelly sand	Jun-10	<4	<0.5	12	150	68	0.3	4	240	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH517	3.0-3.45	Fill: silty sand	Jun-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH517	4.5-4.95	Silty sand	Jun-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH517	5.5-6.0	Silty sand	Jun-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH518	0.5-0.8	Fill: sandy gravel	Jun-10	4	<0.5	11	10	42	<0.1	5	110	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	1.2
BH518	1.0-1.6	Fill: sandy gravel	Jun-10	<4	<0.5	83	26	11	<0.1	20	58	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH519	0.5-0.8	Fill: sandy gravel	Jun-10	9	0.7	40	94	180	0.9	36	190	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	22.6
EIS (2010b)																											
BH601	0.3-0.5	Fill: Silty sandy clay	Aug-10	<4	<0.5	14	90	150	1.5	13	180	-	-	-	-	6.1	-	-	-	-	-	-	-	-	-	-	46.3
BH601	0.6-0.95	Fill: Silty clayey sand	Aug-10	8	<0.5	11	56	640	1.2	9	110	-	-	-	-	3.4	-	-	-	-	-	-	-	-	-	-	26.1
BH601	3.2-3.45	Fill: Silty sand	Aug-10	<4	<0.5	4	<1	3	<0.1	<1	3	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH602	0.3-0.5	Fill: Silty sandy clay	Aug-10	12	<0.5	25	34	31	0.1	17	70	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	6.6
BH602	1.7-1.92	Fill: Silty sand	Aug-10	7	<0.5	15	33	97	0.1	7	81	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	20.6
BH602	2.8-3.0	Fill: Silty sand	Aug-10	<4	<0.5	8	5	25	<0.1	2	45	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	0.3
BH603	0.3-0.5	Fill: Sandy gravel	Aug-10	<4	<0.5	120	61	6	<0.1	97	54	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.2
BH603	0.9-1.2	Fill: Silty sand	Aug-10	<4	<0.5	7	3	3	<0.1	6	9	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH604	0.3-0.5	Fill: Sandy gravel	Aug-10	6	1.5	41	260	520	2.6	24	840	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	5.6
BH604	1.7-1.95	Fill: Silty clayey sand	Aug-10	<4	<0.5	25	26	44	0.2	4	37	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.1
BH604	3.2-3.45	Silty sand	Aug-10	5	<0.5	7	6	21	<0.1	3	28	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH605	0.7-0.95	Fill: Silty sand	Aug-10	<4	<0.5	4	3	16	0.1	<1	53	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH605	1.3-1.5	Fill: Silty gravel	Aug-10	12	<0.5	20	38	120	0.2	18	140	-	-	-	-	0.09	-	-	-	-	-	-	-	-	-	-	2.29
BH605	3-3.45	Silty sand	Aug-10	<4	<0.5	4	4	8	<0.1	1	4	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH606	0.3-0.5	Fill: Silty clayey sand	Aug-10	<4	<0.5	16	30	78	0.2	5	42	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	0.08
BH606	0.7-0.95	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH606D	1.7-1.95	Fill: Silty clayey sand	Aug-10	<4	<0.5	8	3	15	<0.1	4	28	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	4.9
BH606	2.2-2.5	Fill: Silty clayey sand	Aug-10	16	<0.5	14	61	58	0.3	4	220	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	250
BH606	2.8-3.2	Sandstone	Aug-10	<4	<0.5	4	1	4	<0.1	<1	4	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	2.4
BH607	0.1-0.2	Fill: Gravelly silty sand	Aug-10	<4	<0.5	30	71	46	<0.1	30	41	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	0.8
BH607	0.5-0.7	Fill: Sandy clay	Aug-10	29	<0.5	12	16	40	0.2	2	29	-	-	-	-	4.7	-	-	-	-	-	-	-	-	-	-	47.9
BH607	1.7-1.9	Fill: Sandy clay	Aug-10	16	<0.5	74	1	11	0.1	<1	5	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH608DL	0.3-0.5	Fill: Silty sand	Aug-10	<4	<0.5	8	23	27	<0.1	4	58	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	0.07
BH608	0.7-0.95	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH608	1.3-1.5	Fill: Silty sand	Aug-10	<4	<0.5	2	1	5	<0.1	1	620	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH609	0.2-0.5	Fill: Gravelly sand	Aug-10	30	<0.5	8	35	33	<0.1	3	64	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	0.26
BH610	0.2-0.4	Fill: Gravelly sand	Aug-10	<4	<0.5	11	82	58	0.1	32	63	-	-	-	-	3.5	-	-	-	-	-	-	-	-	-	-	33.7
BH610	0.7-0.95	Fill: Silty clayey sand	Aug-10	<4	<0.5	5	29	88	0.2	8	250	-	-	-	-	5.9	-	-	-	-	-	-	-	-	-	-	40.9
BH610	1.7-1.95	Fill: Silty clay	Aug-10	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL

Location	Depth (m)	Phenol: Phenolics	TPH (NEPC 1999): C6-C9	C10-C14	C15-C28	C29-C36	C10 -C36	BTEX Compounds: Benzene	Toluene	Ethyl Benzene	Xylene (m & p)	Xylene (o)	Total Xylenes	Organochlorine Pesticides: Aldrin and Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL		0.1	25	50	100	100	100	0.5	0.5	1	2	1	1	0.1	0.1	0.1	0.1
NEPC 1999 Soil HIL D (minimal access residential)														40	200	800	40
NEPC 1999 Soil HIL E (Parks and Open Space)														20	100	400	20
NEPC 1999 Soil HIL F (commercial/industrial)														50	250	1000	50
EPA 1994			65				1000	1	1.4	3.1			14				
GHD (1997)																	
BH1	0.3-0.4	<0.1	<20	240	3800	950	-	<0.5	<0.5	<0.5	-	-	<1.5	<0.1	<0.1	<0.1	<0.1
BH1	0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.5-0.6	-	<20	1300	8100	3400	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH2	1.9-2.1	-	<20	<20	95	54	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH3	0.5-0.6	-	<20	100	3200	1200	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH3	0.9-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0.3-0.4	-	<20	<20	<50	<50	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH4	0.8-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	0.9-1.1	-	<20	<20	<50	<50	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH5	2.2-2.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	0.3-0.4	-	<20	<20	180	73	-	<0.5	<0.5	<0.5	-	-	<1.5	<0.1	<0.1	0.49	<0.1
BH7	0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	2.8-3.1	-	<20	<20	<50	<50	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH8	0.15-0.25	<0.1	1300	2700	1100	100	-	<0.5	<0.5	<0.5	-	-	<1.5	<0.1	<0.1	<0.1	<0.1
BH9	0.8-1.0	-	<20	<20	830	300	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH10	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	0.9-1.1	-	<20	<20	120	<50	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH12	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.8-1.0	-	<20	<20	<50	<50	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH13	1.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	2.5-2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	0.1-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	0.1-0.2	<0.1	-	-	-	-	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH15	1.2-1.3	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
BH16	0.1-0.2	-	-	-	-	-	-	<0.5	<0.5	<0.5	-	-	<1.5	-	-	-	-
EIS (2010a)																	
BH501	0.5-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	1.3	<0.1
BH501	1.5-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH502D	0.3-0.8	-	<25	<50	340	480	820	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH503	0.1-0.4	-	<25	<50	400	1100	1500	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH504D	0.2-0.5	-	<25	<50	260	650	910	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH504	0.5-0.95	-	<25	<50	520	380	900	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH504	1.3-1.6	-	<25	<50	430	250	680	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH504	1.6-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH506	0.5-1.0	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH506	1.85-2.05	-	<25	110	280	<100	390	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH507	0.5-0.8	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH507	1.6-2.05	-	310	1400	340	<100	1740	<0.5	<0.5	<1	-	-	2.1	<0.1	<0.1	<0.1	<0.1
BH507	3.0-3.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH508D	0.3-0.5	-	<25	130	430	510	1070	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH508	1.5-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH510	1.0-1.45	-	<25	<50	310	250	560	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH510	3.0-3.45	-	<25	<50	150	<100	150	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH511	0.3-0.8	-	<25	<50	180	240	420	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH511	1.5-1.95	-	82	4900	2400	1100	8400	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH511	3.0-3.45	-	480	2100	1300	410	3810	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH511	4.5-4.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH512	0.32-0.4	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH512	0.9-1.0	-	<25	<50	220	150	370	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH512	1.4-1.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH512	2.9-3.0	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH513	1.1-1.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH514	0.5-0.9	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH514	1.0-1.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH515	0.5-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH516	0.5-0.9	-	<25	<50	190	<100	190	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH516	1.1-1.4	-	<25	180	540	<100	720	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH517	0.2-0.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH517	0.5-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH517	1.5-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH517	3.0-3.45	-	450	11000	4100	270	15370	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH517	4.5-4.95	-	<25	190	<100	<100	190	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH517	5.5-6.0	-	<25	160	<100	<100	160	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH518	0.5-0.8	-	<25	<50	550	<100	550	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH518	1.0-1.6	-	<25	51	150	<100	201	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH519	0.5-0.8	-	<25	<50	210	300	510	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	44	<0.1
EIS (2010b)																	
BH601	0.3-0.5	-	<25	<50	330	380	710	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH601	0.6-0.95	-	<25	<50	120	170	290	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH601	3.2-3.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH602	0.3-0.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH602	1.7-1.92	-	<25	<50	280	320	600	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH602	2.8-3.0	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH603	0.3-0.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH603	0.9-1.2	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH604	0.3-0.5	-	<25	630	2000	2000	4630	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH604	1.7-1.95	-	<25	140	490	160	790	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH604	3.2-3.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH605	0.7-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH605	1.3-1.5	-	<25	120	1500	<100	1620	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH605	3-3.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH606	0.3-0.5	-	<25	<50	220	110	330	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH606	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH606D	1.7-1.95	-	<25	380	850	<100	1230	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH606	2.2-2.5	-	<25	7000	13000	2100	22100	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH606	2.8-3.2	-	<25	120	230	<100	350	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH607	0.1-0.2	-	<25	<50	630	1800	2430	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH607	0.5-0.7	-	<25	<50	200	130	330	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH607	1.7-1.9	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH608DL	0.3-0.5	-	<25	<50	440	1100	1540	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH608	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH608	1.3-1.5	-	<25	76	150	<100	226	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH609	0.2-0.5	-	<25	53	<100	<100	53	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH610	0.2-0.4	-	<25	<50	320	620	940	<0.5	<0.5	<1	-	-	<1	<0.1	<0.1	<0.1	<0.1
BH610	0.7-0.95	-	<25	<50	150	160	310	<0.5	<0.5	<1	-	-	<1	-	-	-	-
BH610	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location	Depth (m)	4,4-DDE	DDD	DDT	a-BHC	Aldrin	Dieldrin	b-BHC	Chlordane (trans)	d-BHC	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor epoxide	Methoxychlor	Hexachlorobenzene	OCPs (Total)	PCBs: Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Total PCBs	Asbestos: Asbestos Fibres	TPH Speciation: Aromatics >C16-C35	Aliphatics C16-C35
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg
LOR / PQL / EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	50	1000
NEPC 1999 Soil HIL D (minimal access residential)																												20		360	22400
NEPC 1999 Soil HIL E (Parks and Open Space)																												40		180	11200
NEPC 1999 Soil HIL F (commercial/industrial)																												50		450	2800
EPA 1994																															
GHD (1997)																															
BH1	0.3-0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
BH1	0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	1.9-2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0.9-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0.8-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	0.9-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	2.2-2.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	0.3-0.4	<0.1	<0.1	0.49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
BH7	0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	2.8-3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	0.15-0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
BH9	0.8-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	0.9-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0.8-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	1.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	2.5-2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	0.1-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	1.2-1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EIS (2010a)																															
BH501	0.5-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH501	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH502D	0.3-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH503	0.1-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH504D	0.2-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH504	0.5-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH504	1.3-1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH504	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH506	0.5-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH506	1.85-2.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH507	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH507	1.6-2.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH507	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH508D	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH508	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH510	1.0-1.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH510	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH511	0.3-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH511	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH511	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH511	4.5-4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH512	0.32-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH512	0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH512	1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH512	2.9-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH513	1.1-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH514	0.5-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH514	1.0-1.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH515	0.5-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH516	0.5-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH516	1.1-1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH517	0.2-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH517	0.5-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH517	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH517	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH517	4.5-4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH517	5.5-6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH518	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH518	1.0-1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH519	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
EIS (2010b)																															
BH601	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH601	0.6-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH601	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH602	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH602	1.7-1.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH602	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH603	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH603	0.9-1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH604	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH604	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH604	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH605	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH605	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH605	3-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH606	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH606	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH606D	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH606	2.2-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH606	2.8-3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH607	0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH607	0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH607	1.7-1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH608DL	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH608	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH608	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH609	0.2-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH610	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH610	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BH610	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay Precinct
Table A1 - Historical Soil Investigation Data

JBS&G

Heavy Metals

				Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL				4	0.5	1	1	1	0.1	1	1
NEPC 1999 Soil HIL D (minimal access residential)				400	80	400	4000	1200	60	2400	28000
NEPC 1999 Soil HIL E (Parks and Open Space)				200	40	200	2000	600	30	600	14000
NEPC 1999 Soil HIL F (commercial/industrial)				500	100	500	5000	1500	75	3000	35000
EPA 1994											
EIS (2010c)											
BH701	0.5-0.8	Fill: Sandy gravel	Aug-10	24	-	-	-	-	-	-	-
BH701	1.3-1.5	Fill: Silty sand	Aug-10	<4	-	-	-	-	-	-	-
BH701	1.7-1.95	Fill: Silty sand	Aug-10	<4	-	-	-	-	-	-	-
BH701	3.2-3.45	Silty clayey sand	Aug-10	<4	-	-	-	-	-	-	-
BH702	0.3-0.5	Fill: Silty sand	Aug-10	15	-	-	-	-	-	-	-
BH702	1.2-1.5	Fill: Silty clayey sand	Aug-10	11	-	-	-	-	-	-	-
BH702	1.5-1.95	Fill: Silty sand	Aug-10	<4	-	-	-	-	-	-	-
BH702	2.8-3.0	Fill: Silty sand	Aug-10	<4	-	-	-	-	-	-	-
BH702	3.3-3.45	Silty clayey sand	Aug-10	<4	-	-	-	-	-	-	-
BH704	0.1-0.3	Fill: Silty sand	Aug-10	<4	-	-	-	-	-	-	-
BH704	0.7-1.0	Fill: Silty sand	Aug-10	100	-	-	-	-	-	-	-
BH704	1.6-1.95	Fill: Silty sand	Aug-10	**580**	-	-	-	-	-	-	-
BH704	2.8-3.0	Fill: Silty sand	Aug-10	53	-	-	-	-	-	-	-
BH704	3.2-3.45	Silty sand	Aug-10	6	-	-	-	-	-	-	-
BH705	1.3-1.5	Fill: Silty sand	Aug-10	10	<0.5	29	19	58	0.2	5	130
BH705	1.8-1.95	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH706	1.7-1.95	Fill: Silty clayey sand	Aug-10	<4	<0.5	8	8	27	<0.1	3	53
BH706	2.8-3.0	Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH707	1.5-1.55	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH707	2.3-2.5	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH707	4.0-4.5	Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH708	0.7-0.95	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH708	1.6-1.95	Fill: Silty sand	Aug-10	5	<0.5	9	79	**900**	1.1	4	210
BH709	0.9-1.15	Fill: Silty sand	Aug-10	5	<0.5	10	30	350	1.9	3	170
BH709	1.7-1.95	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH710	0.3-0.5	Fill: Gravelly sand	Aug-10	<4	<0.5	50	52	52	0.2	48	70
BH711	1.3-1.5	Fill: Clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH711	1.7-1.95	Fill: Clayey gravel	Aug-10	-	-	-	-	-	-	-	-
BH711	3.3-3.45	Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH712	1.3-1.5	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH712	1.6-1.95	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH712	3.0-3.45	Fill: Silty sandy gravel	Aug-10	-	-	-	-	-	-	-	-
BH713	0.4-0.6	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH713	1.7-1.95	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH713	4.7-4.95	Silty clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH714	0.8-1.0	Fill: Clayey sand	Aug-10	<4	<0.5	20	59	90	1.8	13	140
BH714	1.7-1.95	Fill: Clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH715	0.6-0.95	Fill: Clayey sand	Aug-10	8	<0.5	10	25	29	0.1	6	53
BH715	1.5-1.95	Fill: Clayey sand	Aug-10	-	-	-	-	-	-	-	-
BH716	0.5-0.8	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-	-
BH716	1.7-1.95	Fill: Silty sand	Aug-10	9	<0.5	18	120	600	1.7	27	120
E3C (2012)											
BH01	0.5-0.7	-	22/12/2011	<4	<0.5	7	84	24	<0.1	11	30
BH01	1.6-1.8	-	22/12/2011	150	1.7	11	120	**880**	1.1	13	490
BH02	1.2-1.4	-	22/12/2011	8	<0.5	27	91	49	0.2	11	73
QA01 (Intralab BH02 (1.2-1.4))		-	22/12/2011	<4	<0.5	7	78	38	0.5	10	94
BH02	2	-	22/12/2011	<4	<0.5	7	23	18	0.1	5	20
BH03	0.4-0.6	-	22/12/2011	<4	<0.5	6	7	36	0.1	1	12
BH03	1.9-2.1	-	22/12/2011	<4	<0.5	15	7	14	<0.1	6	25
PB (2009)											
PBBH01	0.0-0.3	-	17/12/2008	3	0.1	11	27	71	0.15	9	78
PBBH01	4.0-4.1	-	17/12/2008	4	<0.1	18	6	11	<0.05	2	21
PBBH02	0.0-0.1	-	18/12/2008	2	<0.1	11	25	41	0.05	11	49
PBBH02	4.0-4.1	-	18/12/2008	4	0.1	10	31	79	0.23	6	80
PBBH03	1.0-1.1	-	18/12/2008	11	0.1	16	18	63	0.15	10	71
PBBH03	6.0-6.1	-	18/12/2008	4	<0.1	10	25	60	0.09	1	31
PBBH04	0.5-0.6	-	17/12/2008	5	<0.1	8	22	53	0.1	16	67
PBBH04	4.0-4.1	-	17/12/2008	4	<0.1	19	43	121	0.25	15	136
PBBH05	0.0-0.3	-	17/12/2008	4	0.2	11	86	425	0.9	17	201
PBBH05	6.0-6.1	-	17/12/2008	11	<0.1	18	21	46	0.25	7	54
PBHA01	0.0-0.1	-	12/01/2009	3	0.3	12	40	216	0.23	15	153
PBHA01	0.3-0.4	-	12/01/2009	2	0.4	8	37	77	0.17	60	181
PBHA02	0.0-0.1	-	12/01/2009	2	<0.1	4	41	559	0.09	9	82
CDM (2012b)											
BH01	0-0.15	-	25/10/2012	6	<0.5	11	150	370*	0.4	13	150
BH01	4.4-4.7	-	25/10/2012	11	0.6	6	70	**2100**	0.4	16	820
BH02	0.5-0.6	-	25/10/2012	14	0.7	9	110	**3000**	2.5	14	540
BH02	3.4-3.7	-	25/10/2012	<4	<0.5	9	14	15	<0.1	6	24
BH03	0.18-0.26	-	25/10/2012	6	<0.5	5	190	86	0.2	17	120
BH03	0.5-0.7	-	25/10/2012	4	<0.5	5	8	22	<0.1	4	13
BH04	0.14-0.2	-	25/10/2012	14	<0.5	21	76	190	0.9	18	160
BH04	0.5-0.7	-	25/10/2012	10	<0.5	4	38	71	2.3	14	110
BH05	1-1.1	-	25/10/2012	18	<0.5	14	83	500*	0.2	24	330
BH05	3-3.2	-	25/10/2012	<4	<0.5	6	<1	11	<0.1	<1	6
BH05	3.5-3.8	-	25/10/2012	<4	<0.5	4	<1	8	<0.1	<1	6
BH06	0.15-0.2	-	25/10/2012	19	1.7	6	75	110	0.5	19	2800
BH06	1.5-1.9	-	25/10/2012	<4	<0.5	7	<1	5	<0.1	<1	5
BH07	0.3-0.4	-	25/10/2012	17	0.6	19	63	210	0.8	23	290
RCA (2011)											
LOR				*1*	*0.1*	*2*	*2*	*2*	*0.05*	*1*	*5*
TP1A	-	-	29/04/2011	1.7	0.4	4.7	46	19	< 0.05	6.2	15
TP2A	-	-	29/04/2011	5.1	< 0.1	11	21	35	0.06	4.8	46
TP3A	-	-	29/04/2011	4.8	< 0.1	8.8	9.2	49	< 0.05	4.6	53
TP4A Soil	-	-	29/04/2011	3.3	< 0.1	40	11	29	< 0.05	25	35
TP5A	-	-	29/04/2011	3.2	0.1	7.4	15	31	< 0.05	9.1	57
TP6A	-	-	29/04/2011	3.8	< 0.1	9.2	14	19	< 0.05	4	47
TP7A	-	-	29/04/2011	5.4	0.1	6.1	20	43	< 0.05	8.9	80
TP8A	-	-	29/04/2011	5.1	0.1	5.8	16	73	0.06	4.6	80
TP9A	-	-	29/04/2011	7.4	< 0.1	6	21	54	< 0.05	14	86
TP11A	-	-	29/04/2011	3	< 0.1	6	16	42	0.13	5.9	88
TP11B	-	-	29/04/2011	3.1	< 0.1	9.9	21	42	< 0.05	12	63
TP2A+TP6A (C(	-	-	29/04/2011	-	-	-	-	-	-	-	-
TP13A	-	-	29/04/2011	2.8	0.3	6.1	11	26	< 0.05	4.7	55
TP9A+TP13A ((	-	-	29/04/2011	-	-	-	-	-	-	-	-
NAA (2010)											
LOR				*4*	*<0.5*	*1*	*1*	*1*	*0.1*	*1*	*1*
TP01	0.2	-	18/06/2010	<4	<0.5	8	9	23	<0.1	5	45
TP02	0.5	-	18/06/2010	6	<0.5	7	54	96	0.2	9	91
TP03	0.6	-	18/06/2010	8	<0.5	8	45	89	1.2	7	130
TP04	0.1	-	18/06/2010	<4	<0.5	23	13	110	<0.1	6	96
TP05	0.4	-	18/06/2010	<4	<0.5	3	39	21	<0.1	8	51
TP06	0.5	-	18/06/2010	13	<0.5	4	46	97	<0.1	11	92
TP07	0.3	-	18/06/2010	<4	<0.5	11	27	61	<0.1	11	100
TP08	0.3	-	18/06/2010	<4	<0.5	3	16	39	<0.1	5	170
BR01 (TP06)	0.5	-	18/06/2010	6	<0.5	4	24	80	<0.1	7	55

PAHs

		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	-phthalene	Phenanthrene	Pyrene	Total PAHs
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL		0.1	0.1	0.1	0.1	0.05	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-
NEPC 1999 Soil HIL D (minimal access residential)						4											80
NEPC 1999 Soil HIL E (Parks and Open Space)						2											40
NEPC 1999 Soil HIL F (commercial/industrial)						5											100
EPA 1994																	
EIS (2010c)																	
BH701	0.5-0.8	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	0.9
BH701	1.3-1.5	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	0.15
BH701	1.7-1.95	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH701	3.2-3.45	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH702	0.3-0.5	-	-	-	-	**13**	-	-	-	-	-	-	-	-	-	-	**164**
BH702	1.2-1.5	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	0.5
BH702	1.5-1.95	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH702	2.8-3.0	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH702	3.3-3.45	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH704	0.1-0.3	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	3.1
BH704	0.7-1.0	-	-	-	-	20D	-	-	-	-	-	-	-	-	-	-	**119.4 D**
BH704	1.6-1.95	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH704	2.8-3.0	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH704	3.2-3.45	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH705	1.3-1.5	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	6.7
BH705	1.8-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH706	1.7-1.95	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	LPQL
BH706	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	1.5-1.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	2.3-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH708	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH708	1.6-1.95	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	0.05
BH709	0.9-1.15	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	1.8
BH709	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH710	0.3-0.5	-	-	-	-	**4.1**	-	-	-	-	-	-	-	-	-	-	28.8
BH711	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH711	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH711	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	4.7-4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH714	0.8-1.0	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	11.8
BH714	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH715	0.6-0.95	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	5.2
BH715	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH716	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH716	1.7-1.95	-	-	-	-	**5.9**	-	-	-	-	-	-	-	-	-	-	**51.6**
E3C (2012)																	
BH01	0.5-0.7	<1	1	1.5	6.7	**9.9**	14	6.9	6.6	<1	11	<1	6.6	<1	3.1	14	**81.3**
BH01	1.6-1.8	0.4	1.9	3	8.5	**7.3**	11	3.8	6.2	0.7	18	1.3	4.3	0.3	11	15	**92.7**
BH02	1.2-1.4	<0.1	<0.1	0.4	1.9	**2.3**	3.8	1.9	2	0.2	5.5	<0.1	1.9	<0.1	2	4.8	26.7
QA01 (Intralab BH02 (1.2-1.4))		<0.1	<0.1	<0.1	<0.1	0.09	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.09
BH02	2	<0.1	<0.1	<0.1	0.3	0.31	0.5	0.3	0.3	<0.1	0.8	<0.1	0.2	<0.1	0.3	0.7	3.71
BH03	0.4-0.6	0.2	<0.1	1.2	7.5	**8.8**	14	7	7.3	0.9	18	0.1	7.7	<0.1	4.1	17	**93.8**
BH03	1.9-2.1	<0.1	<0.1	<0.1	0.2	0.17	0.3	0.2	0.2	<0.1	0.5	<0.1	0.1	<0.1	0.2	0.5	2.37
PB (2009)																	
PBBH01	0.0-0.3	<0.5	<0.5	0.5	2.2	**2**	3	1	2.3	<0.5	3.9	<0.5	0.9	<0.5	1.7	4.1	21.6
PBBH01	4.0-4.1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<8
PBBH02	0.0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.2
PBBH02	4.0-4.1	<0.5	<0.5	<0.5	1.7	1	0.8	<0.5	0.7	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	1.2	0.5
PBBH03	1.0-1.1	<0.5	<0.5	<0.5	0.5	0.6	<1	<0.5	0.6	<0.5	0.9	<0.5	<0.5	<0.5	0.5	1.2	4.3
PBBH03	6.0-6.1	0.6	<0.5	0.7	1.1	0.9	1	<0.5	1	<0.5	2.3	0.5	<0.5	0.5	2	2.4	13
PBBH04	0.5-0.6	<0.5	<0.5	<0.5	0.6	0.6	1	<0.5	0.7	<0.5	1.1	<0.5	<0.5	<0.5	0.5	1.1	5.6
PBBH04	4.0-4.1	<0.5	<0.5	<0.5	0.6	0.8	1	0.5	0.7	<0.5	1	<0.5	<0.5	<0.5	<0.5	1.1	5.7
PBBH05	0.0-0.3	<0.5	<0.5	<0.5	1	0.8	1	<0.5	1.1	<0.5	1.9	<0.5	<0.5	<0.5	0.5	1.9	8.2
PBBH05	6.0-6.1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<8
PBHA01	0.0-0.1	<0.5	<0.5	0.6	1.5	1.3	2	0.9	1.7	<0.5	2.7	<0.5	0.7	<0.5	1.9	2.6	15.9
PBHA01	0.3-0.4	<0.5	<0.5	<0.5	<0.5	0.5	<1	1.1	0.6	<0.5	0.7	<0.5	0.7	<0.5	0.6	0.7	4.9
PBHA02	0.0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<8
CDM (2012b)																	
BH01	0-0.15	4	0.4	6	13	**17**	23	8.6	12	1.8	29	2.8	10	0.8	19	29	**176**
BH01	4.4-4.7	<0.1	<0.1	<0.1	0.3	0.72	1.2	1.1	0.3	0.1	0.4	<0.1	1.3	<0.1	0.2	0.4	6.02
BH02	0.5-0.6	0.5	0.7	1.6	6.1	**7.5**	11	4.5	6	0.9	13	0.6	5.3	0.4	6.9	12	**77**
BH02	3.4-3.7	<0.1	<0.1	<0.1	0.1	0.17	0.3	<0.1	0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	0.2	1.17
BH03	0.18-0.26	<0.1	0.2	0.3	1.6	**2.4**	3.8	1.5	1.8	0.4	2.5	<0.1	1.6	0.1	1	2.6	19.8
BH03	0.5-0.7	<0.1	<0.1	<0.1	<0.1	0.06	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.06
BH04	0.14-0.2	0.2	0.2	0.8	4.5	**5.3**	7.3	2.4	4.3	0.5	7.9	0.2	3	<0.1	2.9	8.6	**48.1**
BH04	0.5-0.7	<0.1	<0.1	<0.1	0.1	0.13	0.2	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.2	0.2	1.13
BH05	1-1.1	<0.1	<0.1	0.3	1.1	1.4	2.1	0.8	1	0.2	1.8	<0.1	1	<0.1	1	1.6	12.3
BH05	3-3.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0
BH05	3.5-3.8	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1
BH06	0.15-0.2	<0.1	<0.1	<0.1	0.3	0.35	0.6	0.3	0.3	<0.1	0.5	<0.1	0.4	<0.1	0.3	0.5	3.55
BH06	1.5-1.9	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0
BH07	0.3-0.4	<0.1	<0.1	<0.1	0.4	0.44	0.7	0.2	0.4	<0.1	0.7	<0.1	0.3	<0.1	0.4	0.8	4.34
RCA (2011)																	
LOR		*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*1*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	
TP1A	-	< 0.5	< 0.5	1.2	2.2	**2.9**	4.5	3	2.5	0.8	4.8	< 0.5	1.8	< 0.5	2.7	4.9	31.3
TP2A	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0
TP3A	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0
TP4A Soil	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0
TP5A	-	0.8	< 0.5	2.6	5.2	**3.7**	7.1	3.2	5.4	1.2	19	0.8	3	< 0.5	12	15	79
TP6A	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0
TP7A	-	< 0.5	< 0.5	< 0.5	1.1	1.3	2.4	1.8	1.4	0.6	2.7	< 0.5	1.5	< 0.5	0.8	2.3	15.9
TP8A	-	< 0.5	< 0.5	< 0.5	1	1.2	2	1.3	1.1	0.6	2.1	< 0.5	1.2	< 0.5	< 0.5	1.9	12.4
TP9A	-	< 0.5	< 0.5	< 0.5	1.5	1.7	2.7	1.8	1.6	0.6	3.4	< 0.5	1.4	< 0.5	1.1	3	18.8
TP11A	-	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 1	0.6	0.5	< 0.5	1.2	< 0.5	0.5	< 0.5	< 0.5	1	4.3
TP11B	-	9.6	1.4	40	150	**120**	220	110	130	41	490	7.8	96	1.1	170	450	**2037**
TP2A+TP6A (C(	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13A	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
TP9A+TP13A ((	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NAA (2010)																	
LOR		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
TP01	0.2	<0.1	<0.1	<0.1	0.2	0.2	0.4	0.2	0.2	<0.1	0.3	<0.1	0.2	<0.1	<0.1	0.3	2.7
TP02	0.5	<0.1	<0.1	0.1	1	1.3	2.2	1	1	0.1	2.4	<0.1	1	<0.1	0.5	2.2	13.3
TP03	0.6	0.2	0.1	1.3	6.1	**7.5**	11	4.6	5.6	0.5	17	0.2	4.6	<0.1	5.2	15	**79**
TP04	0.1	<0.1	<0.1	<0.1	0.2	0.3	0.4	0.2	0.2	<0.1	0.4	<0.1	0.2	<0.1	0.2	0.4	3.1
TP05	0.4	0.9	0.1	4	25	**41**	54	29	22	3	75	0.5	24	<0.1	18	66	**363**
TP06	0.5	0.4	<0.1	3	14	**22**	30	15	15	1.8	47	0.4	14	<0.1	14	40	**217**
TP07	0.3	2.4	0.1	8.5	24	**34**	47	21	24	3	69	2	20	0.3	36	63	**333**
TP08	0.3	0.3	0.1	1.8	14	**19**	29	13	14	1.7	40	0.2	12	<0.1	7.1	37	**189**
BR01 (TP06)	0.5	0.7	<0.1	2.8	14	**21**	30	16	15	2.4	46	0.4	14	<0.1	14	40	**216**

Phenol / TPH (NEPC 1999) / BTEX Compounds

		Phenolics	C6-C9	C10-C14	C15-C28	C29-C36	C10 -C36	Benzene	Toluene	Ethyl Benzene	Xylene (m & p)	Xylene (o)	Total Xylenes
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL		0.1	25	50	100	100	100	0.5	0.5	1	2	1	1
NEPC 1999 Soil HIL D (minimal access residential)													
NEPC 1999 Soil HIL E (Parks and Open Space)													
NEPC 1999 Soil HIL F (commercial/industrial)													
EPA 1994			65				1000	1	1.4	3.1			14
EIS (2010c)													
BH701	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-
BH701	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-
BH701	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-
BH701	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-
BH702	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BH702	1.2-1.5	-	-	-	-	-	-	-	-	-	-	-	-
BH702	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-
BH702	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-
BH702	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-	-
BH704	0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-
BH704	0.7-1.0	-	-	-	-	-	-	-	-	-	-	-	-
BH704	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-	-
BH704	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-
BH704	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-
BH705	1.3-1.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH705	1.8-1.95	-	36	1700	4200	810	**6710**	<0.5	<0.5	<1	-	-	<1
BH706	1.7-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH706	2.8-3.0	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH707	1.5-1.55	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH707	2.3-2.5	-	**1100**	6200	1700	190	**8090**	<0.5	<0.5	<1	-	-	<1
BH707	4.0-4.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH708	0.7-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH708	1.6-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH709	0.9-1.15	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH709	1.7-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH710	0.3-0.5	-	<25	<50	110	100	210	<0.5	<0.5	<1	-	-	<1
BH711	1.3-1.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH711	1.7-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH711	3.3-3.45	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH712	1.3-1.5	-	37	800	660	210	**1670**	<0.5	<0.5	<1	-	-	<1
BH712	1.6-1.95	-	**230**	3000	1500	<100	**4500**	<0.5	<0.5	<1	-	-	2
BH712	3.0-3.45	-	**72**	730	360	<100	**1090**	<0.5	<0.5	<1	-	-	<1
BH713	0.4-0.6	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH713	1.7-1.95	-	**89**	3200	1800	<100	**5000**	<0.5	<0.5	<1	-	-	<1
BH713	4.7-4.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH714	0.8-1.0	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH714	1.7-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH715	0.6-0.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH715	1.5-1.95	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH716	0.5-0.8	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1	-	-	<1
BH716	1.7-1.95	-	<25	<50	190	190	380	<0.5	<0.5	<1	-	-	<1
E3C (2012)													
BH01	0.5-0.7	-	<25	<50	800	2400	**3200**	<0.2	<0.5	<1	<2	<1	<3
BH01	1.6-1.8	-	<25	<50	370	140	510	<0.2	<0.5	<1	<2	<1	<3
BH02	1.2-1.4	-	<25	<50	<100	<100	NC	<0.2	<0.5	<1	<2	<1	<3
QA01 (Intralab BH02 (1.2-1.4))		-	<25	<50	<100	<100	NC	<0.2	<0.5	<1	<2	<1	<3
BH02	2	-	<25	<50	<100	<100	NC	<0.2	<0.5	<1	<2	<1	<3
BH03	0.4-0.6	-	<25	<50	120	110	230	<0.2	<0.5	<1	<2	<1	<3
BH03	1.9-2.1	-	<25	<50	<100	<100	NC	<0.2	<0.5	<1	<2	<1	<3
PB (2009)													
PBBH01	0.0-0.3	-	<10	<50	170	130	300	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH01	4.0-4.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH02	0.0-0.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH02	4.0-4.1	-	<10	<50	<100	<100	<250	0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH03	1.0-1.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH03	6.0-6.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH04	0.5-0.6	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH04	4.0-4.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH05	0.0-0.3	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBBH05	6.0-6.1	-	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBHA01	0.0-0.1	-	<10	<50	610	1560	**2170**	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBHA01	0.3-0.4	-	<10	<50	210	880	**1090**	<0.2	<0.5	<0.5	<1	<0.5	<1.5
PBHA02	0.0-0.1	-	<10	<50	130	940	**1070**	<0.2	<0.5	<0.5	<1	<0.5	<1.5
CDM (2012b)													
BH01	0-0.15	-	<25	<50	1300	1200	**2500**	<0.2	<0.5	<1	<2	<1	<3
BH01	4.4-4.7	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH02	0.5-0.6	-	<25	<50	1500	550	**2050**	<0.2	<0.5	<1	<2	<1	<3
BH02	3.4-3.7	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH03	0.18-0.26	-	<25	<50	190	990	**1180**	<0.2	<0.5	<1	<2	<1	<3
BH03	0.5-0.7	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH04	0.14-0.2	-	<25	<50	210	200	410	<0.2	<0.5	<1	<2	<1	<3
BH04	0.5-0.7	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH05	1-1.1	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH05	3-3.2	-	<25	<50	1600	<100	**1600**	<0.2	<0.5	<1	<2	<1	<3
BH05	3.5-3.8	-	<25	550	1800	<100	**2350**	<0.2	<0.5	<1	<2	<1	<3
BH06	0.15-0.2	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH06	1.5-1.9	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
BH07	0.3-0.4	-	<25	<50	<100	<100	<200	<0.2	<0.5	<1	<2	<1	<3
RCA (2011)													
LOR			*10*	*50*	*100*	*100*	*100*	*0.5*	*0.5*	*0.5*	*1*	*0.5*	*0.15*
TP1A	-	-	< 10	< 50	180	1500	**1700**	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP2A	-	-	< 10	< 50	< 100	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP3A	-	-	< 10	< 50	< 100	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP4A Soil	-	-	< 10	< 50	< 100	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP5A	-	-	< 10	< 50	140	110	250	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP6A	-	-	< 10	< 50	110	190	300	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP7A	-	-	< 10	< 50	< 100	140	140	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP8A	-	-	< 10	< 50	< 100	120	120	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP9A	-	-	< 10	< 50	< 100	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP11A	-	-	< 10	< 50	< 100	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP11B	-	-	< 10	< 50	3000	2000	**5000**	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP2A+TP6A (C(	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13A	-	-	< 10	< 50	< 100	210	210	< 0.5	< 0.5	< 0.5	< 1	< 0.5	<1.5
TP9A+TP13A ((	-	-	-	-	-	-	-	-	-	-	-	-	-
NAA (2010)													
LOR			*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.5*	*0.5*	*1*	*-*	*-*	*1*
TP01	0.2	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1.0	-	-	<1.0
TP02	0.5	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1.0	-	-	<1.0
TP03	0.6	-	<25	<50	140	100	290	<0.5	<0.5	<1.0	-	-	<1.0
TP04	0.1	-	<25	<50	<100	<100	<100	<0.5	<0.5	<1.0	-	-	<1.0
TP05	0.4	-	<25	<50	480	580	**1110**	<0.5	<0.5	<1.0	-	-	<1.0
TP06	0.5	-	<25	<50	330	260	640	<0.5	<0.5	<1.0	-	-	<1.0
TP07	0.3	-	<25	<50	520	470	**1040**	<0.5	<0.5	<1.0	-	-	<1.0
TP08	0.3	-	<25	<50	300	280	630	<0.5	<0.5	<1.0	-	-	<1.0
BR01 (TP06)	0.5	-	<25	<50	330	280	660	<0.5	<0.5	<1.0	-	-	<1.0

Organochlorine Pesticides

		Aldrin and Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	4,4-DDE	DDD	DDT	a-BHC	Aldrin	Dieldrin	b-BHC	Chlordane (trans)	d-BHC	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor epoxide	Methoxychlor	Hexachlorobenzene	OCPs (Total)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR / PQL / EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPC 1999 Soil HIL D (minimal access residential)		40	200	800	40																			
NEPC 1999 Soil HIL E (Parks and Open Space)		20	100	400	20																			
NEPC 1999 Soil HIL F (commercial/industrial)		50	250	1000	50																			
EPA 1994																								
EIS (2010c)																								
BH701	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH701	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH701	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH701	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH702	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH702	1.2-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH702	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH702	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH702	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH704	0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH704	0.7-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH704	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH704	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH704	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH705	1.3-1.5	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH705	1.8-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH706	1.7-1.95	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH706	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	1.5-1.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	2.3-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH707	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH708	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH708	1.6-1.95	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH709	0.9-1.15	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH709	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH710	0.3-0.5	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH711	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH711	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH711	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH712	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH713	4.7-4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH714	0.8-1.0	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH714	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH715	0.6-0.95	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH715	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH716	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH716	1.7-1.95	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E3C (2012)																								
BH01	0.5-0.7	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH01	1.6-1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	1.2-1.4	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QA01 (Intralab BH02 (1.2-1.4))		<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH02	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	0.4-0.6	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH03	1.9-2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PB (2009)																								
PBBH01	0.0-0.3	-	<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	<0.2	<0.05	-
PBBH01	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH02	0.0-0.1	-	<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	<0.2	<0.05	-
PBBH02	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH03	1.0-1.1	-	<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	<0.2	<0.05	-
PBBH03	6.0-6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH04	0.5-0.6	-	<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	<0.2	<0.05	-
PBBH04	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH05	0.0-0.3	-	<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	<0.2	<0.05	-
PBBH05	6.0-6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBHA01	0.0-0.1	-	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.001	-
PBHA01	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBHA02	0.0-0.1	-	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.005	<0.001	-
CDM (2012b)																								
BH01	0-0.15	2.5	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	1.4	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH01	4.4-4.7	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH02	0.5-0.6	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH02	3.4-3.7	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH03	0.18-0.26	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH03	0.5-0.7	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH04	0.14-0.2	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--
BH04	0.5-0.7	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH05	1-1.1	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH05	3-3.2	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH05	3.5-3.8	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH06	0.15-0.2	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH06	1.5-1.9	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH07	0.3-0.4	1.05	2	<0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	<0.1	2.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	<0.1	<0.1	-
RCA (2011)																								
LOR			*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*	*0.2*	*0.05*	
TP1A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP3A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP4A Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP5A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP6A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP7A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP8A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP9A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP2A+TP6A (C(	-	-	< 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	< 0.2	< 0.05	-
TP13A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP9A+TP13A ((	-	-	< 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	< 0.2	< 0.05	-
NAA (2010)																								
LOR		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP01	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BR01 (TP06)	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PCBs / Asbestos / TPH Speciation

		Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Total PCBs	Asbestos Fibres	Aromatics >C16-C35	Aliphatics C16-C35
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg
LOR / PQL / EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	50	1000
NEPC 1999 Soil HIL D (minimal access residential)									20		360	22400
NEPC 1999 Soil HIL E (Parks and Open Space)									40		180	11200
NEPC 1999 Soil HIL F (commercial/industrial)									50		450	2800
EPA 1994												
EIS (2010c)												
BH701	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-
BH701	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-
BH701	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-
BH701	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-
BH702	0.3-0.5	-	-	-	-	-	-	-	-	-	-	-
BH702	1.2-1.5	-	-	-	-	-	-	-	-	-	-	-
BH702	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-
BH702	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-
BH702	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-
BH704	0.1-0.3	-	-	-	-	-	-	-	-	-	-	-
BH704	0.7-1.0	-	-	-	-	-	-	-	-	-	-	-
BH704	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-
BH704	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-
BH704	3.2-3.45	-	-	-	-	-	-	-	-	-	-	-
BH705	1.3-1.5	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH705	1.8-1.95	-	-	-	-	-	-	-	-	-	**8800**	<1000
BH706	1.7-1.95	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH706	2.8-3.0	-	-	-	-	-	-	-	-	-	-	-
BH707	1.5-1.55	-	-	-	-	-	-	-	-	-	-	-
BH707	2.3-2.5	-	-	-	-	-	-	-	-	-	-	-
BH707	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-
BH708	0.7-0.95	-	-	-	-	-	-	-	-	-	-	-
BH708	1.6-1.95	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH709	0.9-1.15	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH709	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-
BH710	0.3-0.5	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH711	1.3-1.5	-	-	-	-	-	-	-	-	-	-	-
BH711	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-
BH711	3.3-3.45	-	-	-	-	-	-	-	-	-	-	-
BH712	1.3-1.5	-	-	-	-	-	-	-	-	-	**190**	<1000
BH712	1.6-1.95	-	-	-	-	-	-	-	-	-	-	-
BH712	3.0-3.45	-	-	-	-	-	-	-	-	-	-	-
BH713	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-
BH713	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-
BH713	4.7-4.95	-	-	-	-	-	-	-	-	-	-	-
BH714	0.8-1.0	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH714	1.7-1.95	-	-	-	-	-	-	-	-	-	-	-
BH715	0.6-0.95	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
BH715	1.5-1.95	-	-	-	-	-	-	-	-	-	-	-
BH716	0.5-0.8	-	-	-	-	-	-	-	-	-	-	-
BH716	1.7-1.95	-	-	-	-	-	-	-	<0.1	No Asbestos Detected	-	-
E3C (2012)												
BH01	0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
BH01	1.6-1.8	-	-	-	-	-	-	-	-	-	-	-
BH02	1.2-1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
QA01 (Intralab BH02 (1.2-1.4))		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
BH02	2	-	-	-	-	-	-	-	-	-	-	-
BH03	0.4-0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-
BH03	1.9-2.1	-	-	-	-	-	-	-	-	-	-	-
PB (2009)												
PBBH01	0.0-0.3	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
PBBH01	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-
PBBH02	0.0-0.1	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
PBBH02	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-
PBBH03	1.0-1.1	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
PBBH03	6.0-6.1	-	-	-	-	-	-	-	-	-	-	-
PBBH04	0.5-0.6	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
PBBH04	4.0-4.1	-	-	-	-	-	-	-	-	-	-	-
PBBH05	0.0-0.3	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
PBBH05	6.0-6.1	-	-	-	-	-	-	-	-	-	-	-
PBHA01	0.0-0.1	-	-	-	-	-	-	-	-	-	-	-
PBHA01	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-
PBHA02	0.0-0.1	-	-	-	-	-	-	-	-	-	-	-
CDM (2012b)												
BH01	0-0.15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3.5	-	-	-
BH01	4.4-4.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH02	0.5-0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3.5	-	-	-
BH02	3.4-3.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH03	0.18-0.26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH03	0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH04	0.14-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH04	0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH05	1-1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH05	3-3.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH05	3.5-3.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH06	0.15-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH06	1.5-1.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.7	-	-	-
BH07	0.3-0.4	<1	<1	<1	<1	<1	<1	<1	<7	-	-	-
RCA (2011)												
LOR		*0.5*		*0.5*	*0.5*	*0.5*	*0.5*	*0.5*				
TP1A	-	-		-	-	-	-	-	-	-	-	-
TP2A	-	-		-	-	-	-	-	-	-	-	-
TP3A	-	-		-	-	-	-	-	-	-	-	-
TP4A Soil	-	-		-	-	-	-	-	-	-	-	-
TP5A	-	-		-	-	-	-	-	-	-	-	-
TP6A	-	-		-	-	-	-	-	-	-	-	-
TP7A	-	-		-	-	-	-	-	-	-	-	-
TP8A	-	-		-	-	-	-	-	-	-	-	-
TP9A	-	-		-	-	-	-	-	-	-	-	-
TP11A	-	-		-	-	-	-	-	-	-	-	-
TP11B	-	-		-	-	-	-	-	-	-	-	-
TP2A+TP6A (C(	-	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3	-	-	-
TP13A	-	-		-	-	-	-	-	-	-	-	-
TP9A+TP13A ((	-	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<3	-	-	-
NAA (2010)												
LOR		-	-	-	-	-	-	-	-	-	-	-
TP01	0.2	-	-	-	-	-	-	-	-	-	-	-
TP02	0.5	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
TP03	0.6	-	-	-	-	-	-	-	-	-	-	-
TP04	0.1	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
TP05	0.4	-	-	-	-	-	-	-	-	-	-	-
TP06	0.5	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
TP07	0.3	-	-	-	-	-	-	-	-	-	-	-
TP08	0.3	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-
BR01 (TP06)	0.5	-	-	-	-	-	-	-	-	-	-	-

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Resu
Table A1 - Historical Soil Investigation Data

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Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Resu
Table A1 - Historical Soil Investigation Data

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Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Resu
Table A1 - Historical Soil Investigation Data

| | | | | semi-Volatile Organic Compounds | | | |

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Resu
Table A1 - Historical Soil Investigation Data

| | | | | semi-Volatile Organic Compounds | | | |

Table A2: Soil Analytical Results

Metals & Metalloids

Field_ID	Sampled_Date-Time	Matrix_Type	Arsenic (Total)	Cadmium	Chromium (Total)	Chromium (VI)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Dibutyltin	Tributyltin
			mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2.00	0.40	1.00		1.00	1.00	0.05	1.00	1.00	0.0005	0.0005
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse													
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse													
NEPM 2013 Soil HIL B			500[#3]	150	500[#4]		30000	1200[#5]	120[#6]	1200	60000		
NEPM 2013 Soil HIL C			300[#3]	90	300[#4]		17000	600[#5]	80[#6]	1200	30000		
NEPM 2013 Soil HIL D			3000[#3]	900	3600[#4]		240000	1500[#5]	730[#6]	6000	400000		
NEPM 2013 Soil HSL B - Sensitive Setting													
NEPM 2013 Soil HSL C - Sensitive Setting													
NEPM 2013 Soil HSL C for Vapour Intrusion - Sand 0 to <1m													
NEPM 2013 Soil HSL D - Sensitive Setting													
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m													
NEPM 2013 EIL/ESL Commercial Industrial (generic, coarse)			160		310		85	1800		55	110		
JBS&G (2015)													
FM1 0.1-0.2	17/06/2015	SOIL	5.2	<0.4	19		110	100	0.09	10	100		
FM2 0.1-0.2	17/06/2015	SOIL	-	-	-		-	-	-	-	-		
FM2 0.9-1.0	17/06/2015	SOIL	19	0.7	17		1700	1300	0.45	16	790		
FM2 1.9-2.0	17/06/2015	SOIL	8.2	<0.4	270		91	190	0.62	<5	340		
FM3 0.9-1.0	16/06/2015	SOIL	22	<0.4	10		22	83	0.5	<5	140		
FM3 1.9-2.0	16/06/2015	SOIL	2.7	<0.4	7.4		7.9	5.6	<0.05	<5	28		
FM4 1.9-2.0	16/06/2015	SOIL	4.5	<0.4	12		43	61	0.11	11	45		
FM4 2.9-3.0	16/06/2015	SOIL	-	-	-		-	-	-	-	-		
FM5 0.3-0.4	16/06/2015	SOIL	20	0.5	6.4		65	160	0.43	7.9	380		
FM5 1.9-2.0	16/06/2015	SOIL	4.2	<0.4	7.5		16	220	1	<5	81		
FM5 2.9-3.0	16/06/2015	SOIL	-	-	-		-	-	-	-	-		
FM6 0.3-0.4	17/06/2015	SOIL	<2	<0.4	7.3		24	52	0.49	<5	19		
FM6 0.9-1.0	17/06/2015	SOIL	21	0.7	7.3		59	190	2.1	<5	460		
FM6 3.5-3.6	17/06/2015	SOIL	-	-	-		-	-	-	-	-		
HH BH01 0.12-0.2	14/08/2015	SOIL	-	-	-		-	-	-	-	-		
HH BH01 0.5-0.6	14/08/2015	SOIL	<2	<0.4	25		25	65	0.09	22	82		
HH BH01 3.0-3.1	14/08/2015	SOIL	5.5	<0.4	12		28	93	0.14	6.4	55		
HH QC01	14/08/2015	SOIL	4.5	<0.4	17		24	150	0.24	9	99		
HHQC01A	14/08/2015	SOIL	15	<0.4	20		21	69	0.1	12	66		
HH BH01 4.0-4.1	14/08/2015	SOIL	-	-	-		-	-	-	-	-		
HH BH01 6.0-6.1	14/08/2015	SOIL	-	-	-		-	-	-	-	-		
HH BH03 0.2-0.3	14/08/2015	SOIL	-	-	-		-	-	-	-	-		
HH BH03 0.4-0.5	14/08/2015	SOIL	7.9	<0.4	14		59	180	1	8.9	120		
HH BH03 2.0-2.1	14/08/2015	SOIL	<2	<0.4	7.8		19	19	0.09	<5	17		
HH BH04 0.18-0.25	14/08/2015	SOIL	<2	<0.4	9		92	100	0.33	7.6	97		
HH BH04 3.5-3.6	14/08/2015	SOIL	<2	<0.4	7.1		29	35	0.18	12	66		
DP (2016)													
1_0.16-0.35	25/05/2016	Coarse	9	0.6	14		85	110	0.4	16	220		
1_0.36-0.46	25/05/2016	Coarse	4	<0.4	11		29	530	0.4	4	84		
1_0.56-0.8	25/05/2016	Fine	<4	<0.4	9		6	38	<0.1	3	23		
2_0.37-0.5	25/05/2016	Coarse	5	<0.4	6		80	61	0.2	14	100		
2_1.8-2	25/05/2016	Coarse	<4	<0.4	9		8	20	<0.1	9	60		
3_0.21-0.3	24/05/2016	Fine	9	0.6	14		110	210	0.8	34	460		
3_0.7	24/05/2016	Fine	6	0.9	8		88	180	0.3	25	710		
4_0.4-0.8	24/05/2016	Coarse	<4	<0.4	3		6	5	<0.1	2	100		
4_0.9-1.3	24/05/2016	Bedrock	5	<0.4	5		19	39	<0.1	12	110		
5_0.16-0.46	24/05/2016	Coarse	9	0.6	18		290	180	0.2	13	680		
5_0.5-0.8	24/05/2016	Fine	5	<0.4	14		2	8	<0.1	3	8		
6_0.16-0.5	24/05/2016	Coarse	<4	0.5	7		81	330	0.2	11	490		
6_0.6-0.7	24/05/2016	Fine	<4	<0.4	12		23	400	0.3	4	160		
EIS (2017)													
BH8 1.25-1.75	29/05/2017	Fine	21	4.1	58		-	890	2.3	29	-		
BH8 3.2-3.65	29/05/2017	Fine	<4	<0.4	13		-	14	<0.1	2	-		
BH8 12.42-12.6	29/05/2017	Coarse	<4	<0.4	<1		-	<1	<0.1	<1	-		
BH9 0-0.3	2/06/2017	Coarse	<4	<0.4	15		-	96	<0.1	8	-		
BH9 3.75-4.2	2/06/2017	Fine	<4	<0.4	23		-	12	<0.1	2	-		
BH9 9.38-9.5	2/06/2017	Coarse	<4	<0.4	1		-	<1	<0.1	<1	-		
BH10 11.37-11.5	1/06/2017	Coarse	<4	<0.4	15		-	9	<0.1	<1	-		
BH10 1.9-2.35	1/06/2017	Coarse	10	2	26		-	500	1.5	12	-		
BH10 4.55-5.0	1/06/2017	Fine	5	<0.4	9		-	17	<0.1	2	-		
BH11 1.6-2.05	31/05/2017	Fine	<4	<0.4	14		-	11	<0.1	3	-		
BH11 9.14-9.25	31/05/2017	Coarse	<4	<0.4	7		-	3	<0.1	<1	-		
BH12 3.95-4.4	31/05/2017	Fine	<4	<0.4	17		-	69	<0.1	3	-		
BH12 8.75-9.2	31/05/2017	Fine	9	0.5	13		-	14	<0.1	9	-		
BH12 15.05-15.15	31/05/2017	Coarse	<4	<0.4	<1		-	2	<0.1	<1	-		
BH13 0.3-0.8	30/05/2017	Fine	18	1	47		-	400	2	17	-		
BH13 3.2-3.7	30/05/2017	Fine	<4	<0.4	20		-	17	<0.1	4	-		
BH13 13.96-14.05	30/05/2017	Coarse	<4	<0.4	<1		-	1	<0.1	<1	-		
BH14 0.55-1.05	5/06/2017	Fine	4	0.8	9		-	190	1	9	-		
BH14 4.0-4.35	5/06/2017	Fine	19	2	15		-	410	2.8	14	-		
BH14 7.73-7.85	5/06/2017	Coarse	<4	<0.4	<1		-	<1	<0.1	<1	-		
BH15 4.72-5.17	14/02/2017	Coarse	<4	<0.4	7		-	13	<0.1	1	-		
BH15 5.49-5.6	14/02/2017	Coarse	<4	<0.4	1		-	8	<0.1	<1	-		
BH16 0.85-1.3	6/02/2017	Fine	<4	<0.4	8		-	18	<0.1	1	-		
BH16 3.9-4.25	6/02/2017	Fine	<4	<0.4	7		-	8	<0.1	1	-		
BH16 14.13-14.25	6/02/2017	Coarse	<4	<0.4	6		-	13	<0.1	<1	-		
BH17 1.85-2.0	7/02/2017	Fine	17	2	31		-	320	2.5	12	-		
BH17 5.6-6.0	7/02/2017	Fine	<4	<0.4	19		-	4	<0.1	4	-		
BH17 7.21-7.35	7/02/2017	Coarse	<4	<0.4	2		-	10	<0.1	<1	-		
BH18 0.37-0.82	8/02/2017	Fine	<4	<0.4	12		-	7	<0.1	4	-		
BH18 13.6-13.75	9/02/2017	Coarse	<4	<0.4	1		-	4	<0.1	<1	-		
BH19 0.95-1.4	8/02/2017	Fine	21	<0.4	24		-	11	<0.1	3	-		
BH19 7.5-7.95	8/02/2017	Coarse	<4	<0.4	13		-	2	<0.1	1	-		
BH19 9.86-9.95	13/02/2017	Coarse	<4	<0.4	13		-	4	<0.1	<1	-		
BH20 0.0-0.05	9/02/2017	Fine	25	<0.4	34		-	69	0.4	11	-		
BH20 1.2-1.65	9/02/2017	Coarse	8	<0.4	8		-	7	<0.1	2	-		
BH20 15.59-13.7	10/02/2017	Coarse	<4	<0.4	1		-	4	<0.1	<1	-		
BH20 15.59-13.7	10/02/2017	Coarse	<4	<0.4	1		-	4	<0.1	<1	-		
BH21 0.0-0.1	13/02/2017	Fine	16	<0.4	22		-	190	1.7	10	-		
BH21 0.4-0.5	13/02/2017	Fine	14	<0.4	29		-	19	<0.1	6	-		
BH21 12.51-12.61	13/02/2017	Coarse	<4	<0.4	2		-	18	<0.1	<1	-		
BH22 0.0-0.05	10/02/2017	Fine	29	3	65		-	640	4.4	26	-		
BH22 0.4-0.5	13/02/2017	Fine	25	<0.4	23		-	7	<0.1	4	-		
BH22 9.4-9.55	10/02/2017	Coarse	<4	<0.4	2		-	9	<0.1	<1	-		
BH23 0.0-0.1	13/02/2017	Coarse	7	<0.4	10		-	50	0.3	4	-		
BH23 1.5-1.95	13/02/2017	Fine	<4	<0.4	25		-	17	<0.1	7	-		
BH23 10.01-10.15	13/02/2017	Coarse	<4	<0.4	3		-	10	<0.1	5	-		
BH24 0.0-0.5	15/02/2017	Fine	<4	0.7	27		-	270	1.2	9	-		
BH24 1.0-1.5	15/02/2017	Coarse	<4	<0.4	12		-	9	<0.1	2	-		
BH24 5.71-5.81	15/02/2017	Coarse	<4	<0.4	12		-	16	<0.1	7	-		
BH25 0.0-0.3	15/02/2017	Coarse	<4	<0.4	9		-	22	<0.1	3	-		
BH25 3.01-3.15	15/02/2017	Coarse	<4	<0.4	4		-	4	<0.1	<1	-		
BH26 0.8-1.25	14/02/2017	Fine	4	2	34		-	500	<0.1	10	-		
BH26 1.9-2.35	14/02/2017	Fine	<4	<0.4	22		-	52	<0.1	2	-		
BH26 9.2-9.3	14/02/2017	Coarse	<4	<0.4	5		-	2	<0.1	<1	-		
BH27 0.0-0.5	16/02/2017	Fine	21	1	33		-	250	2.2	12	-		
BH27 1.5-1.95	16/02/2017	Coarse	<4	<0.4	9		-	5	<0.1	1	-		
BH27 5.38-5.5	16/02/2017	Coarse	<4	<0.4	4		-	3	<0.1	<1	-		
BH28 0.0-0.5	17/02/2017	Coarse	13	0.8	22		-	360	<0.1	12	-		
BH28 2.0-2.45	17/02/2017	Fine	17	<0.4	25		-	10	<0.1	7	-		
BH28 8.01-8.15	17/02/2017	Coarse	<4	<0.4	<1		-	<1	<0.1	<1	-		

Polycyclic Aromatic Hydrocarbons

Field_ID	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ Calc (zero)	Benzo(a)pyrene TEQ Calc (half)	Benzo(a)pyrene TEQ Calc (PQL)	Benzo(b,j)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Carcinogenic PAHs as B(a)P TEQ	Phenanthrene	Pyrene	PAHs (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.10	0.50	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	0.50
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																									
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																									
NEPM 2013 Soil HIL B						4	4	4	4	4	4														400[#7]
NEPM 2013 Soil HIL C						3	3	3	3	3	3														300[#7]
NEPM 2013 Soil HIL D						40	40	40	40	40	40														4000[#7]
NEPM 2013 Soil HSL B - Sensitive Setting																					3[#11]				
NEPM 2013 Soil HSL C - Sensitive Setting																					NL[#14]				
NEPM 2013 Soil HSL C for Vapour Intrusion - Sand 0 to <1m																					NL				
NEPM 2013 Soil HSL D - Sensitive Setting																					NL[#19]				
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																					NL				
NEPM 2013 EIL/ESL Commercial Industrial (generic, coarse)					1.4																370				
JBS&G (2015)																									
FM1 0.1-0.2	<0.5	<0.5	<0.5	0.7	0.6	0.8	1.1	1.3	-	-	-	0.5	-	<0.5	0.6	0.5	<0.5	1	<0.5	<0.5	<0.5		<0.5	1.1	5
FM2 0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5		-	-	-
FM2 0.9-1.0	<0.5	0.7	1.3	3.3	2.6	3.6	3.8	4.1	-	-	-	2.9	-	1.6	2	2.3	<0.5	6.3	0.9	1.3	<0.5 - 1.1		3.8	6.3	35
FM2 1.9-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
FM3 0.9-1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
FM3 1.9-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
FM4 1.9-2.0	<0.5	<0.5	1.2	1.9	0.5	0.9	1.2	1.4	-	-	-	0.7	-	0.9	0.6	0.9	<0.5	3.9	6.5	0.7	<0.5		11	3.4	32
FM4 2.9-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6		-	-	-
FM5 0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
FM5 1.9-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5		<0.5	0.6	1.2
FM5 2.9-3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5		-	-	-
FM6 0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
FM6 0.9-1.0	<0.5	<0.5	1.6	6.9	5.1	7.2	7.4	7.7	-	-	-	7.5	-	2.9	3.3	4.3	<0.5	11	<0.5	2.5	<0.5		3.4	10	59
FM6 3.5-3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5		-	-	-
HH BH01 0.12-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
HH BH01 0.5-0.6	<0.5	<0.5	<0.5	1.6	1.6	2.2	2.5	2.7	-	-	-	2.1	-	1.4	1.5	1.4	<0.5	2.3	<0.5	0.8	<0.5		1.6	2.4	17
HH BH01 3.0-3.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
HH QC01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5		<0.5	0.7	1.4
HHQC01A	<0.1	<0.1	<0.1	0.2	0.2	-	-	-	-	-	-	-	0.3	0.1	-	0.2	<0.1	0.4	<0.1	0.1	<0.1		0.2	0.4	2.1
HH BH01 4.0-4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
HH BH01 6.0-6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
HH BH03 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
HH BH03 0.4-0.5	1.2	<0.5	1.3	3.7	3.2	4.3	4.6	4.8	-	-	-	3.3	-	2	2.6	2.8	<0.5	6.1	0.6	1.4	1.6 - 2.2		3.1	6.6	40
HH BH03 2.0-2.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
HH BH04 0.18-0.25	0.9	0.8	1.3	4.5	4	5.9	5.9	5.9	-	-	-	2.4	-	3.2	2.1	2.8	0.7	7.5	1	2.2	2.2		4.2	9.3	49
HH BH04 3.5-3.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
DP (2016)																									
1_0.16-0.35	-	-	-	-	170	240	240	240	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	1600
1_0.36-0.46	-	-	-	-	0.2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	2.3
1_0.56-0.8	-	-	-	-	<0.05	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	-
2_0.37-0.5	-	-	-	-	100	150	150	150	-	-	-	-	-	-	-	-	-	-	-	-	230		-	-	1900
2_1.8-2	-	-	-	-	2.5	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	-	-	2		-	-	53
3_0.21-0.3	-	-	-	-	2.3	3.6	3.6	3.6	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	19
3_0.7	-	-	-	-	1.7	2.7	2.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	20
4_0.4-0.8	-	-	-	-	<0.05	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	-
4_0.9-1.3	-	-	-	-	<0.05	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	-
5_0.16-0.46	-	-	-	-	41	59	59	59	-	-	-	-	-	-	-	-	-	-	-	-	49		-	-	800
5_0.5-0.8	-	-	-	-	<0.05	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	-
6_0.16-0.5	-	-	-	-	37	53	53	53	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	450
6_0.6-0.7	-	-	-	-	8.5	12	12	12	-	-	-	-	-	-	-	-	-	-	-	-	<1		-	-	120
EIS (2017)																									
BH8 1.25-1.75	0.1	0.1	0.3	1.9	2	-	-	-	2.9	2.9	2.9	-	-	-	-	1.5	0.2	3.5	0.1	-	0.1		1	4.8	21.2
BH8 3.2-3.65	<0.1	<0.1	<0.1	0.1	0.07	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	0.2	<0.1	-	<0.1		<0.1	0.2	0.57
BH8 12.42-12.6	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH9 0-0.3	<0.1	0.1	0.3	2	1.6	-	-	-	2.3	2.3	2.3	-	-	-	-	1.5	0.1	3.3	<0.1	-	<0.1		0.6	3.2	16.7
BH9 3.75-4.2	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH9 9.38-9.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH10 11.37-11.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH10 1.9-2.35	<0.1	<0.1	0.2	1	1.4	-	-	-	2	2	2	-	-	-	-	0.7	0.1	1.5	0.1	-	0.2		0.6	3.1	12.7
BH10 4.55-5.0	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH11 1.6-2.05	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH11 9.14-9.25	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH12 3.95-4.4	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH12 8.75-9.2	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH12 15.05-15.15	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH13 0.3-0.8	0.1	0.3	0.6	2.6	2.7	-	-	-	3.8	3.8	3.8	-	-	-	-	1.9	0.3	5	0.4	-	0.1		3.7	6.7	31.2
BH13 3.2-3.7	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH13 13.96-14.05	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH14 0.55-1.05	0.3	0.2	1	3.3	3.1	-	-	-	4.5	4.5	4.5	-	-	-	-	2.6	0.4	6.1	0.3	-	0.3		2.5	8.6	36.7
BH14 4.0-4.35	5.3	0.5	16	23	13	-	-	-	21	21	21	-	-	-	-	21	2	59	7.9	-	5.2		52	57	297.4
BH14 7.73-7.85	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH15 4.72-5.17	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH15 5.49-5.6	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH16 0.85-1.3	<0.1	<0.1	<0.1	0.1	0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	0.1	<0.1	0.2	<0.1	-	<0.1		<0.1	0.5	1.4
BH16 3.9-4.25	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH16 14.13-14.25	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH17 1.85-2.0	0.3	<0.1	0.5	1.3	2	-	-	-	3.1	3.1	3.1	-	-	-	-	1.4	0.3	2.6	0.1	-	0.1		0.9	4	22.2
BH17 5.6-6.0	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH17 7.21-7.35	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH18 0.37-0.82	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH18 13.6-13.75	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH19 0.95-1.4	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH19 7.5-7.95	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH19 9.86-9.95	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH20 0.0-0.05	0.2	<0.1	0.3	0.6	0.82	-	-	-	1.3	1.3	1.3	-	-	-	-	0.6	0.1	1.6	<0.1	-	<0.1		0.4	2.7	10.82
BH20 1.2-1.65	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH20 15.59-13.7	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH20 15.59-13.7	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH21 0.0-0.1	0.3	<0.1	0.6	0.9	1	-	-	-	1.7	1.7	1.7	-	-	-	-	1.1	0.2	2.7	0.2	-	0.1		1.1	3	15.8
BH21 0.4-0.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH21 12.51-12.61	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH22 0.0-0.05	0.8	<0.1	0.9	2.2	4.7	-	-	-	7.4	7.4	7.4	-	-	-	-	2.1	0.7	4	0.3	-	0.3		1.6	7.3	45.7
BH22 0.4-0.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH22 9.4-9.55	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH23 0.0-0.1	<0.1	<0.1	<0.1	<0.1	0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	0.1	<0.1	0.1	<0.1	-	<0.1		<0.1	0.2	1.1
BH23 1.5-1.95	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH23 10.01-10.15	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH24 0.0-0.5	0.7	<0.1	0.7	1.9	1.6	-	-	-	2.5	2.5	2.5	-	-	-	-	1.9	0.2	4.5	0.3	-	0.3		1.6	5	23.5
BH24 1.0-1.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	0.1	0.1
BH24 5.71-5.81	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH25 0.0-0.3	<0.1	<0.1	<0.1	<0.1	0.06	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	0.2	<0.1	-	<0.1		<0.1	0.2	0.46
BH25 3.01-3.15	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH26 0.8-1.25	0.4	<0.1	0.3	1.1	1.3	-	-	-	1.9	1.9	1.9	-	-	-	-	1.1	0.2	2.2	0.1	-	<0.1		0.7	3.6	15
BH26 1.9-2.35	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH26 9.2-9.3	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH27 0.0-0.5	0.7	<0.1	0.4	1.3	1.9	-	-	-	2.8	2.8	2.8	-	-	-	-	1.2	0.3	2.1	0.1	-	0.1		0.8	3.1	17.5
BH27 1.5-1.95	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH27 5.38-5.5	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH28 0.0-0.5	0.1	<0.1	<0.1	0.2	0.3	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	0.3	<0.1	0.5	<0.1	-	<0.1		0.3	0.6	3.4
BH28 2.0-2.45	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1
BH28 8.01-8.15	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1		<0.1	<0.1	<0.1

Table A2: Soil Analytical Results

			Arsenic (Total)	Cadmium	Chromium (Total)	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Dibutyltin	Tributyltin	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[a]pyrene TEQ (lower bound)*	Benzo[a]pyrene TEQ (medium bound)*	Benzo[a]pyrene TEQ (upper bound)*	Benzo[a]pyrene TEQ Calc (zero)	Benzo[a]pyrene TEQ Calc (half)	Benzo[a]pyrene TEQ Calc (PQL)	Benzo[b,j]fluoranthene	Benzo[b,k]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-c,d]pyrene	Naphthalene	Carcinogenic PAHs as B[a]P TEQ	Phenanthrene	Pyrene	PAHs (Total)
			mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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			2.00	0.40	1.00		1.00	1.00	0.05	1.00	1.00	0.0005	0.0005	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.10	0.50	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	0.50
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																																						
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																						
NEPM 2013 Soil HIL B			500[HIL]	150	500[HIL]		30000	1200[HIL]	120[HIL]	1200	60000								4	4	4	4	4	4													400[HIL]
NEPM 2013 Soil HIL C			300[HIL]	90	300[HIL]		17000	600[HIL]	80[HIL]	1200	30000								3	3	3	3	3	3													300[HIL]
NEPM 2013 Soil HIL D			3000[HIL]	900	3600[HIL]		240000	1500[HIL]	730[HIL]	6000	400000								40	40	40	40	40	40													4000[HIL]
NEPM 2013 Soil HSL B - Sensitive Setting																																						3[HSL]
NEPM 2013 Soil HSL C - Sensitive Setting																																						NL[HSL]
NEPM 2013 Soil HSL C for Vapour Intrusion - Sand 0 to <1m																																						NL
NEPM 2013 Soil HSL D - Sensitive Setting																																						NL[HSL]
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																																						NL
NEPM 2013 EIL/ESL Commercial Industrial (generic, coarse)			160		310		85	1800		55	110							1.4																				370
PB (2009)																																						
PBBH01 0.0-0.3	17/12/2008	SOIL	3	0.1	11		27	71	0.15	9	78			<0.5	<0.5	0.5	2.2	2	-	-	-	-	-	-	-	3	1	2.3	-	<0.5	3.9	<0.5	0.9	<0.5		1.7	4.1	21.6
PBBH01 4.0-4.1	17/12/2008	SOIL	4	<0.1	18		6	11	<0.05	2	21			<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<8
PBBH02 0.0-0.1	18/12/2008	SOIL	2	<0.1	11		25	41	0.05	11	49			<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	<0.5	0.5	<0.5	<0.5	<0.5		<0.5	0.7	1.2
PBBH02 4.0-4.1	18/12/2008	SOIL	4	0.1	10		31	79	0.23	6	80			<0.5	<0.5	<0.5	1.7	1	-	-	-	-	-	-	-	0.8	<0.5	0.7	-	<0.5	<0.5	<0.5	0.9	<0.5		<0.5	1.2	0.5
PBBH03 1.0-1.1	18/12/2008	SOIL	11	0.1	16		18	63	0.15	10	71			<0.5	<0.5	<0.5	0.5	0.6	-	-	-	-	-	-	-	<1	<0.5	0.6	-	<0.5	0.9	<0.5	<0.5	<0.5		0.5	1.2	4.3
PBBH03 6.0-6.1	18/12/2008	SOIL	4	<0.1	10		25	60	0.08	1	31			0.6	<0.5	0.7	1.1	0.9	-	-	-	-	-	-	-	1	<0.5	1	-	<0.5	2.3	0.5	<0.5	0.5		2	2.4	13
PBBH04 0.5-0.6	17/12/2008	SOIL	5	<0.1	8		22	53	0.1	16	67			<0.5	<0.5	<0.5	0.6	0.6	-	-	-	-	-	-	-	1	<0.5	0.7	-	<0.5	1.1	<0.5	<0.5	<0.5		0.5	1.1	5.6
PBBH04 4.0-4.1	17/12/2008	SOIL	4	<0.1	19		43	121	0.25	15	136			<0.5	<0.5	<0.5	0.6	0.8	-	-	-	-	-	-	-	1	0.5	0.7	-	<0.5	1	<0.5	<0.5	<0.5		<0.5	1.1	5.7
PBBH05 0.0-0.3	17/12/2008	SOIL	4	0.2	11		86	425	0.9	17	201			<0.5	<0.5	<0.5	1	0.8	-	-	-	-	-	-	-	1	<0.5	1.1	-	<0.5	1.9	<0.5	<0.5	<0.5		0.5	1.9	8.2
PBBH05 6.0-6.1	17/12/2008	SOIL	11	<0.1	18		21	46	0.25	7	54			<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<8
PBHA01 0.0-0.1	12/01/2009	SOIL	3	0.3	12		40	216	0.23	15	153			<0.5	<0.5	0.6	1.5	1.3	-	-	-	-	-	-	-	2	0.9	1.7	-	<0.5	2.7	<0.5	0.7	<0.5		1.9	2.6	15.9
PBHA01 0.3-0.4	12/01/2009	SOIL	2	0.4	8		37	77	0.17	60	181			<0.5	<0.5	<0.5	<0.5	0.5	-	-	-	-	-	-	-	<1	1.1	0.6	-	<0.5	0.7	<0.5	0.7	<0.5		0.6	0.7	4.9
PBHA02 0.0-0.1	12/01/2009	SOIL	2	<0.1	4		41	559	0.09	9	82			<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<8
IBS&G (2018)																																						
SB01 0.4-0.5	18/10/2018	SOIL	-	-	-		-	-	-	-	-	0.0033	<0.0005	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB01 0.4-1.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB01 0.9-1.0	18/10/2018	SOIL	4.2	<0.4	9.1		21	68	0.1	7.2	71	-	-	<0.5	<0.5	<0.5	1.1	1.1	1.4	1.7	1.9				0.8		0.7	0.7	1.1	<0.5	1.8	<0.5	0.7	<0.5	1.698	0.6	2	10.6
SB02 0.3-1.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB02 1.0-2.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB02 1.9-2.0	18/10/2018	SOIL	<2	<0.4	11		<5	6.7	<0.1	<5	6.2	0.0073	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB02 3.9-4.0	18/10/2018	SOIL	5.4	<0.4	18		<5	12	<0.1	<5	<5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB03 0.4-1.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB03 2.9-3.0	18/10/2018	SOIL	10	<0.4	17		31	180	0.3	10	150	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB03 3.9-4.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB03 4.9-5.0	18/10/2018	SOIL	5.2	<0.4	7.7		120	330	0.2	30	150	-	-	3.1	0.8	12	16	14	21	21	21				11		7.1	9.4	14	2.9	38	5.2	7.1	<0.5	21.46	34	33	207.6
SB04 0.5-1.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB04 1.0-2.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB04 1.9-2.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB04 2.9-3.0	18/10/2018	SOIL	7.6	<0.4	13		29	80	0.3	6.9	150	0.018	0.00062	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB04 3.9-4.0	18/10/2018	SOIL	5.8	<0.4	12		8.5	69	0.2	<5	53	0.0067	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB05 0.0-1.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB05 0.5-0.6	18/10/2018	SOIL	6.1	<0.4	16		230	190	0.7	11	210	-	-	0.9	1.4	6.2	22	24	37	37	37				16		17	15	21	5.5	40	0.9	17	<0.5 - 0.7	36.88	26	41	254.6
SB05 1.0-2.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB05 1.9-2.0	18/10/2018	SOIL	3.9	<0.4	11		51	36	<0.1	<5	28	-	-	<0.5	1.6	4.3	7.5	7.1	11	11	11				5.3		3.6	4.7	6	1.3	16	2	3.2	<0.5	10.57	13	17	92.6
SB05 4.9-5.0	18/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB05 0.3-0.4	11/02/2019	SOIL	4	<0.4	14		55	260	0.2	12	130	-	-	<0.5	<0.5	<0.5	<0.5	1.2	1.5	1.8	2.1				1.8		1.8	<0.5	0.5	<0.5	1.3	<0.5	1.2	<0.5	-	0.9	1.4	10.1
SB05 0.5-0.6	11/02/2019	SOIL	3.3	<0.4	9.9		49	140	0.4	12	94	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				0.6		0.7	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	-	<0.5	0.8	2.7
SB05 0.6-0.7	11/02/2019	SOIL	2.3	<0.4	8.2		43	110	0.1	11	80	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				0.6		0.7	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	-	<0.5	0.7	2.5
SB06 0.2-1.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB06 0.9-1.0	27/10/2018	SOIL	6.1	<0.4	12		9	37	<0.1	<5	56	0.0079	<0.0005	<0.5	<0.5	<0.5	0.8	0.7	0.9	1.2	1.5				0.5		<0.5	0.6	1	<0.5	2	<0.5	<0.5	<0.5	1.178	1.4	2	9
SB06 1.0-2.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB06 2.9-3.0	27/10/2018	SOIL	15	<0.4	33		39	110	0.2	14	70	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB07 0.4-0.5	27/10/2018	SOIL	2.7	<0.4	110		40	9.5	<0.1	120	110	<0.0005	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB07 0.4-0.7	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB07 1.0-2.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB07 1.9-2.0	27/10/2018	SOIL	11	<0.4	23		390	610	0.5	16	180	-	-	<0.5	<0.5	<0.5	0.8	0.8	0.9	1.2	1.5				<0.5		<0.5	<0.5	0.9	<0.5	2	<0.5	<0.5	<0.5	1.217	0.9	1.9	7.3
SB08 0.1-0.2	27/10/2018	SOIL	2.4	<0.4	110		27	6.1	<0.1	110	73	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
SB08 1.9-3.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
QS02 (Duplicate pair SB0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
QS02 A (Triplicate pair SB	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB08 3.9-4.0	27/10/2018	SOIL	8.4	<0.4	8.8		36	350	0.3	<5	130	<0.0005	<0.0005	<0.5	0.7	1.4	3.6	4.1	5.9	5.9	5.9				2.5		2.3	2.7	3.7	0.7	7.8	<0.5	1.8	<0.5	5.92	3.2	10	44.5
QS01 (Duplicate pair SB0	27/10/2018	SOIL	6.7	<0.4	9.9		65	110	0.5	<5	120	<0.0005	<0.0005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<1.21	1	1.6	4
QS01 A (Triplicate pair SB	27/10/2018	SOIL	7	<0.4	10		39	130	0.7	4	120	-	<0.0005	<0.1	0.3	0.5	2	2.3	3.2	3.2	3.2				-		1.1	-	1.6	0.3	3.6	0.1	0.9	<1 - 0.1	-	1.4	3.6	-
SB08 4.9-5.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB08 6.9-7.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB09 0.2-0.3	27/10/2018	SOIL	3	<0.4	100		33	10	<0.1	110	77	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
QS03 (Duplicate pair SB0	27/10/2018	SOIL	2.4	<0.4	76		30	9.9	<0.1	80	62	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
QS03 A (Triplicate pair SB	27/10/2018	SOIL	<4	<0.4	65		25	8	<0.1	61	48	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5				-		<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-
SB09 0.2-1.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
QS04 (Duplicate pair SB0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
QS04 A (Triplicate pair SB	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB09 0.9-1.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB10 0.5-0.6	27/10/2018	SOIL	4.7	<0.4	24		48	86	0.2	31	150	-	-	<0.5	<0.5	<0.5	0.6	0.7	0.8	1.1	1.4				<0.5		<0.5	<0.5	0.7	<0.5	1.1	<0.5	<0.5	<0.5	1.095	<0.5	1.2	4.3
SB10 0.5-1.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB10 1.0-2.0	27/10/2018	SOIL	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-		-	-	-
SB10 2.9-3.0	27/10/2018	SOIL	13	<0.4	43		110	390	0.8	19	680	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2				<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<1.21	<0.5	<0.5	<0.5
JBS&G (2019)																																						
BH01_0.3-0.4	16/05/2019	SOIL	<2	<0.4	6.2	-	<5	<5	<0.1	<5	5.3	<0.0005	<0.0005	<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
BH01_2.0-2.1	16/05/2019	SOIL	4.5	<0.4	5.1	-	<5	<5	<0.1	<5	5.9	<0.0005	<0.0005	<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
BH02_0.4-0.5	16/05/2019	SOIL	4.8	<0.4	19	-	11	22	<0.1	<5	71	<0.0005	<0.0005	<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	1
BH02_4.0-4.1	16/05/2019	SOIL	5.4	<0.4	19	-	12	29	0.3	40	36	-	-	<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
BH03_1.0-1.1	15/05/2019	SOIL	8.9	1.2	34	-	60	160	1	38	260	<0.0005	<0.0005	<0.5	<0.5	<0.5	1.2	1.3	-	2	-	-	-	-	0.8	-	0.9	1.1	1.3	<0.5	2.4	<0.5	1.3	<0.5	-	1.3	2.6	14.2
BH03_2.0-2.1	15/05/2019	SOIL	5.2	<0.4	22	-	39	120	0.6	11	74	-	-	<0.5	<0.5	1.2	1.6	1.6	-	2.4	-	-	-	-	1.3	-	0.7	1.6	1.8	<0.5	4.3	<0.5	0.7	<0.5	-	2.4	4	21.2
BH04_1.0-1.1	16/05/2019	SOIL	6	<0.4	<5	-	<5	<5	<0.1	<5	6.5	<0.0005	<0.0005	<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
BH04_2.0-2.1	16/05/2019	SOIL	5.9	<0.4	<5	-	<5	<5	<0.1	<5	5.6	-	-	<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
BH05_1.0-1.1	16/05/2019	SOIL	<2	<0.4	5.9	-	<5	<5	<0.1	<5	5.1	-	-	<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
BH05_2.0-2.1	16/05/2019	SOIL	2.7	<0.4	<5	-	<5	<5	<0.1	<5	<5	<0.0005	<0.0005	<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
BH06_0.4-0.5	16/05/2019	SOIL	9.5	<0.4	17	-	94	410	2.9	10	290	-	-	<0.5	1	1.4	5.8	5.9	-	8.3	-	-	-	-	5.7	-	3.4	3.4	5.8	0.5	12	<0.5	3.4	<0.5 - 1	-	5.4	14	68.7
BH06_2.0-2.1	16/05/2019	SOIL	3.3	<0.4	15	-	15	8.9	<0.1	6.7	26	-	-	<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
QC20190516	16/05/2019	SOIL	3.6	<0.4	19	-	13	15	<0.1	6.3	25	-	-	<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
QA20190516	16/05/2019	SOIL	5	0.6	9	-	11	16	<0.1	4	18	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.5	-	-	-	-	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-
BH06_3.0-3.1	16/05/2019	SOIL	3.3	<0.4	11	-	18	85	0.2	5.5	55	-	-	<0.5	<0.5	<0.5	0.7	1	-	1.5	-	-	-	-	0.6	-	<0.5	0.7	0.9	<0.5	1.2	<0.5	<0.5	<0.5	-	<0.5	1.2	6.3
BH07_0.2-3.0	16/05/2019	SOIL	4.2	<0.4	7.9	-	26	14	<0.1	5	39	<0.0005	<0.0005	<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
BH07_1.0-1.1	16/05/2019	SOIL	8.3	0.6	17	-	260	520	1.6	14	490	-	-	9.4	2.4	33	92	81	-	130	-	-	-	-	51	-	34	58	86	22	160	8.3	38	1.1 - 1.9	-	110	180	966.2
BH08_2.0-2.1	15/05/2019	SOIL	6.9	<0.4	<5	-	<5	<5	<0.1	<5	<5	<0.0005	<0.0005	<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

Table A2: Soil Analytical Results

			Arsenic (Total)	Cadmium	Chromium (Total)	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Dibutyltin	Tributyltin	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[a]pyrene TEQ (lower bound)*	Benzo[a]pyrene TEQ (medium bound)*	Benzo[a]pyrene TEQ (upper bound)*	Benzo[a]pyrene TEQ Calc (zero)	Benzo[a]pyrene TEQ Calc (half)	Benzo[a]pyrene TEQ Calc (PQL)	Benzo[b,j]fluoranthene	Benzo[b,k]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-c,d]pyrene	Naphthalene	Carcinogenic PAHs as B[a]P TEQ	Phenanthrene	Pyrene	PAHs (Total)
			mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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			2.00	0.40	1.00		1.00	1.00	0.05	1.00	1.00	0.0005	0.0005	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.10	0.50	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	0.50
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																																						
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																						
NEPM 2013 Soil HIL B			500[HS]	150	500[HS]		30000	1200[HS]	120[HS]	1200	60000								4	4	4	4	4	4														400[CT]
NEPM 2013 Soil HIL C			300[HS]	90	300[HS]		17000	600[HS]	80[HS]	1200	30000								3	3	3	3	3	3														300[CT]
NEPM 2013 Soil HIL D			3000[HS]	900	3600[HS]		240000	1500[HS]	730[HS]	6000	400000								40	40	40	40	40	40														4000[CT]
NEPM 2013 Soil HSL B - Sensitive Setting																																						
NEPM 2013 Soil HSL C - Sensitive Setting																																						
NEPM 2013 Soil HSL C for Vapour Intrusion - Sand 0 to <1m																																						
NEPM 2013 Soil HSL D - Sensitive Setting																																						
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																																						
NEPM 2013 EIL/ESL Commercial Industrial (generic, coarse)			160		310		85	1800		55	110							1.4																				
BH08_3.0-3.1	15/05/2019	SOIL	8.6	<0.4	22	-	27	620	0.6	5.7	55	-	-	<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
BH09_0.2-0.3	15/05/2019	SOIL	3.4	<0.4	88	-	190	190	0.2	75	120	<0.0005	<0.0005	1	<0.5	2.9	5.3	5.5	-	10	-	-	-	-	8.3	-	4.5	4.5	4.9	2	12	1.1	6.1	<0.5 - 1.1	-	9.7	12	80.9
BH09_2.0-2.1	15/05/2019	SOIL	3.6	<0.4	24	-	32	820	0.6	10	49	-	-	<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	1
BH10_2.0-2.1	16/05/2019	SOIL	2.5	<0.4	10	-	15	18	<0.1	<5	16	<0.0005	<0.0005	<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
QC20190515	15/05/2019	SOIL	2.9	<0.4	9.2	-	19	34	<0.1	<5	17	<0.0005	<0.0005	<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
QA20190515	15/05/2019	SOIL	<4	<0.4	9	-	10	12	<0.1	2	13	-	-	<0.1	<0.1	<0.1	0.2	0.2	-	<0.5	-	-	-	-	0.2	-	0.3	<0.1	0.5	<0.1	0.1	<0.1	0.3	0.5	-	0.3	0.5	-
MW01_0.7-1.0	16/05/2019	SOIL	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01_1.0-1.1	16/05/2019	SOIL	7.7	<0.4	17	-	7.8	52	0.1	<5	54	<0.0005	<0.0005	<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
MW01_3.0-3.1	16/05/2019	SOIL	8.8	<0.4	20	-	41	230	1.6	23	62	-	-	<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
MW02_0.5-0.6	13/05/2019	SOIL	5.5	<0.4	18	-	52	180	0.8	14	190	<0.0005	<0.0005	<0.5	1.4	3.7	9.4	7.7	-	12	-	-	-	-	5	-	3.6	6.6	8.3	1.2	17	1.3	5.6	<0.5 - 0.6	-	16	19	106.4
MW02_2.0-2.1	13/05/2019	SOIL	4.2	<0.4	13	-	13	81	0.4	<5	29	-	-	<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
MW03_1.0-1.1	15/05/2019	SOIL	4.7	<0.4	17	-	33	170	0.7	9.8	92	-	-	<0.5	<0.5	1.5	1.5	1.4	-	2.2	-	-	-	-	1.2	-	0.7	1.6	1.7	<0.5	3.6	<0.5	0.7	<0.5	-	3.2	3.1	20.2
MW03_2.0-2.1	15/05/2019	SOIL	5.9	<0.4	14	-	41	200	0.4	<5	140	<0.0005	<0.0005	<0.5	<0.5	<0.5	0.7	0.5	-	0.9	-	-	-	-	<0.5	-	<0.5	<0.5	0.6	<0.5	1.2	<0.5	<0.5	<0.5	-	0.7	1.2	4.9
MW04_1.0-1.1	14/05/2019	SOIL	7.3	0.4	15	-	86	870	2.5	8.5	420	<0.0005	<0.0005	0.7	0.7	1.9	12	23	-	31	-	-	-	-	11	-	10	13	17	3.2	36	<0.5	14	<0.5	-	15	41	198.5
MW04_3.0-3.1	14/05/2019	SOIL	15	<0.4	15	-	140	1200	1.4	28	560	-	-	<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
MW05_0.7-0.8	15/05/2019	SOIL	5.8	<0.4	19	-	82	310	1	23	420	<0.0005	<0.0005	<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
MW05_2.0-2.1	15/05/2019	SOIL	7.8	<0.4	110	<1	110	200	0.4	90	210	-	-	<0.5	<0.5	0.9	2.3	3.2	-	4.9	-	-	-	-	2.5	-	2.1	3	2.5	0.7	4.7	<0.5	1.7	<0.5	-	1.2	5.2	30
MW06_0.4-0.5	14/05/2019	SOIL	13	0.5	18	-	180	310	0.7	16	320	-	-	<0.5	<0.5	<0.5	2.6	3.8	-	7	-	-	-	-	6.3	-	3.4	6.5	2.9	1.4	4.4	<0.5	2.4	<0.5	-	1.8	4.7	40.2
MW06_4.0-4.1	14/05/2019	SOIL	6.6	<0.4	20	-	54	310	1.1	15	160	<0.0005	<0.0005	<0.5	<0.5	1.3	1.3	1.1	-	1.7	-	-	-	-	0.6	-	<0.5	0.7	1.2	<0.5	2.9	0.9	0.6	<0.5	-	3.7	2.9	17.2
MW07_1.0-1.1	14/05/2019	SOIL	5.7	<0.4	10	-	26	73	0.2	6.9	72	<0.0005	<0.0005	<0.5	<0.5	<0.5	<0.5	0.6	-	1	-	-	-	-	<0.5	-	<0.5	0.5	<0.5	<0.5	0.6	<0.5	0.6	<0.5	-	<0.5	0.8	3.1
MW07_3.0-3.1	14/05/2019	SOIL	2.4	<0.4	9.6	-	8.1	34	<0.1	<5	49	-	-	<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
MW07_6.0-6.1	14/05/2019	SOIL	2.3	<0.4	22	-	8.4	46	<0.1	5.8	28	-	-	<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
MW08_0.4-0.5	14/05/2019	SOIL	4.7	<0.4	28	-	42	60	0.2	21	72	-	-	<0.5	<0.5	<0.5	<0.5	0.7	-	1.1	-	-	-	-	0.6	-	0.6	0.7	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	-	<0.5	0.7	3.9
MW08_4.0-4.1	14/05/2019	SOIL	7.2	0.6	26	-	200	370	1.3	16	450	<0.0005	<0.0005	<0.5	<0.5	<0.5	1.4	2.2	-	3	-	-	-	-	1.2	-	1.1	1.4	1.6	<0.5	2.7	<0.5	1.4	<0.5	-	0.9	3	16.9
MW09_1.0-1.1	15/05/2019	SOIL	<2	<0.4	15	-	5.7	9.1	<0.1	7.8	19	<0.0005	<0.0005	<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

Table A2: Soil Analytical Results

| Chlorinated Alkanes | | |

Table A2: Soil Analytical Results

1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	dibromochloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	1,1-dichloropropene	2-chlorotoluene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Chlorobenzene	Vinyl Chloride	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	C6-C10 Fraction	>C10-C16 Fraction	>C10-C16 Fraction (Silica Gel Cleanup)	>C16-C34 Fraction	>C16-C34 Fraction (Silica Gel Cleanup)	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C34-C40 Fraction (Silica Gel Cleanup)	C6 - C10 less BTEX (F1)	>C10 - C16 less Naphthalene (F2)	Benzene
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg
0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	20.00	20.00	50.00	50.00	50.00	20.00	50.00	50.00	100.00	100.00	100.00		100.00	20.00	50.00	0.10
																																					700[#1]	1000[#2]	1000[#2]	3500	3500	10000		10000			
																																					700[#1]	1000[#2]	1000[#2]	2500	2500	10000		10000			
																																													45[#9]	110[#10]	0.5[#11]
																																													NL[#12]	NL[#13]	NL[#14]
																																													NL[#15]	NL[#16]	NL
																																													250[#17]	NL[#18]	3[#19]
																																													260[#15]	NL[#16]	3
																																								1700		3300			215	170	75
-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	<50	170	130	300	-	-	-	-	-	-		-	-	-	<0.2
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																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	290	200	490	<20	<50	-	450	-	120	570	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<25	<50	<100	<100	-	<25	<50	-	<100	-	<100	<50	-	<25	<50	<0.2
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	6000	2500	8500	<20	140	-	7600	-	1300	9040	-	<20	138.1	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1

Table A2: Soil Analytical Results

1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	dibromochloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	1,1-dichloropropene	2-chlorotoluene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Chlorobenzene	Vinyl Chloride	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	C6-C10 Fraction	>C10-C16 Fraction	>C10-C16 Fraction (Silica Gel Cleanup)	>C16-C34 Fraction	>C16-C34 Fraction (Silica Gel Cleanup)	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C34-C40 Fraction (Silica Gel Cleanup)	C6 - C10 less BTEX (F1)	>C10 - C16 less Naphthalene (F2)	Benzene
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg
0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	20.00	20.00	50.00	50.00	50.00	20.00	50.00	50.00	100.00	100.00	100.00		100.00	20.00	50.00	0.10
																																					700[#1]	1000[#2]	1000[#2]	3500	3500	10000		10000			
																																					700[#1]	1000[#2]	1000[#2]	2500	2500	10000		10000			
																																													45[#9]	110[#10]	0.5[#11]
																																													NL[#12]	NL[#13]	NL[#14]
																																													NL[#15]	NL[#16]	NL
																																													250[#17]	NL[#18]	3[#19]
																																													260[#15]	NL[#16]	3
																																								1700		3300			215	170	75
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	780	540	1320	<20	<50	-	1200	-	310	1510	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<25	<50	<100	<100	-	<25	<50	-	<100	-	<100	<50	-	<25	<50	<0.2
																																-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	440	120	560	<20	<50	-	510	-	<100	510	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	78	<50	78	<20	<50	-	110	-	<100	110	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	460	170	630	<20	<50	-	590	-	<100	590	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	190	150	340	<20	<50	-	320	-	<100	320	-	<20	<50	<0.1
																																<20	<20	670	600	1270	<20	<50	-	1100	-	360	1460	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1
																																<20	<20	69	67	136	<20	<50	-	120	-	<100	120	-	<20	<50	<0.1
																																<20	<20	340	250	590	<20	<50	-	520	-	180	700	-	<20	<50	<0.1
																																<20	<20	<50	<50	<50	<20	<50	-	<100	-	<100	<100	-	<20	<50	<0.1

Table A2: Soil Analytical Results

BTEX					Monocyclic Aromatic Hydrocarbons										Phenols		Chlorinated Benzenes						Miscellaneous Hydrocarbons									Polychlorinated Biphenyls								
Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	tert-butyl benzene	Phenols (Total)	Phenolics (Total)	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	Carbon disulfide	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Normalised PCBs (Total)	PCBs (Total)
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.10	0.10	0.20	0.10	0.30	0.50	0.50		0.50	0.50				0.50		0.10	0.10			0.50	0.50	0.50	0.05	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.10		0.10	0.10	0.10	0.10	0.10			0.10
															45,000							15																	1[#6]
															40,000							10																1[#6]
															240,000							80																7[#6]
160[#11]	55[#11]			40[#11]																																			
NL[#14]	NL[#14]			NL[#14]																																			
NL	NL			NL																																			
NL[#19]	NL[#19]			230[#19]																																			
NL	NL			230																																			
135	165			180																																			

<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	<0.1	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	<0.1	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
<1	<1	<2	<1	<3	<5	<5	-	<5	<5	-	-	-	<5	-	0.2	-	-	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	-	-	-	-	-	-	-	-	-
0.4	0.3	1.6	<0.1	0.8	0.9	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<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	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<1	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
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<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.5	<1	-	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0769	0.3
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<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0513	0.2
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1
<0.5	-	-	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LOR	<0.1

Table A2: Soil Analytical Results

Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Phenols (Total)	Phenolics (Total)	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	Carbon disulfide	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Normalised PCBs (Total)	PCBs (Total)
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg
0.10	0.10	0.20	0.10	0.30	0.50	0.50		0.50	0.50				0.50		0.10	0.10			0.50	0.50	0.50	0.05	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.10		0.10	0.10	0.10	0.10	0.10		0.10
															45,000							15																		1[#8]
															40,000							10																		1[#8]
															240,000							80																		7[#8]
160[#11]	55[#11]			40[#11]																																				
NL[#14]	NL[#14]			NL[#14]																																				
NL	NL			NL																																				
NL[#19]	NL[#19]			230[#19]																																				
NL	NL			230																																				
135	165			180																																				
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
<0.5	<0.5	<1	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
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-	-	-	-	-																																				
<0.1	<0.1	<0.2	<0.1	<0.3																																				
<0.1	<0.1	<0.2	<0.1	<0.3																																				
<0.5	<1	<2	<1	<1																																				
-	-	-	-	-																																				
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<0.1	<0.1	<0.2	<0.1	<0.3																																				
<0.5	<1	<2	<1	<1																																				
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-	-	-	-	-																																				
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-	-	-	-	-																																				
<0.1	<0.1	<0.2	<0.1	<0.3																																				
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.5	<1	<2	<1	<1																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																											-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1

Table A2: Soil Analytical Results

Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Phenols (Total)	Phenolics (Total)	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	Carbon disulfide	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Normalised PCBs (Total)	PCBs (Total)
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.10	0.10	0.20	0.10	0.30	0.50	0.50		0.50	0.50				0.50		0.10	0.10			0.50	0.50	0.50	0.05	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.10		0.10	0.10	0.10	0.10	0.10		0.10
															45,000							15																		1[99]
															40,000							10																	1[99]
															240,000							80																	7[99]
160[#11]	55[#11]			40[#11]																																			
NL[#14]	NL[#14]			NL[#14]																																			
NL	NL			NL																																			
NL[#15]	NL[#15]			260[#15]																																			
NL	NL			230																																			
135	165			180																																			
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.5	<1	<2	<1	<1																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
-	-	-	-	-																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
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<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
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<0.1	<0.1	<0.2	<0.1	<0.3																												-	-	-	-	-	-	-		-
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<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
<0.1	<0.1	<0.2	<0.1	<0.3																												<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1

Table A2: Soil Analytical Results

Organochlorine Pesticides																										
Aldrin	Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	o,p'-+p,p DDD	p,p'-DDE	DDT	alpha-BHC	beta-BHC	DDT+DDE+DDD (Sum of Total)	delta-BHC	Chlordane	Chlordane (trans)	alpha-Chlordane	gamma-Chlordane	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Heptachlorobenzene	Lindane	Methoxychlor	Toxaphene
mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.05		0.05	0.05	0.10	0.05	0.05	0.05	0.05	0.05	0.10				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.10	1.00	1.00
10										90							20			10				500	30	
10										70							20			10				400	30	
45										530							100			50				2500	160	
						640																				

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<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.1		<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	-	-
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-		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1
<0.05		<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.2	<1	<1

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-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
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-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
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-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
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-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	
-		<0.1	-	<0.1	<0.1	<0.1	-	-	-	-		<0.1		-	-	-	-	<0.1	-	-	-	-		-	-	-	

Table A2: Soil Analytical Results

Aldrin	Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	o.p-+p.p DDD	4,4-DDE	DDT	alpha-BHC	beta-BHC	DDT+DDE+DDD (Sum of Total)	delta-BHC	Chlordane	Chlordane (trans)	alpha-Chlordane	gamma-Chlordane	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Heptachlorobenzene	Lindane	Methoxychlor	Toxaphene
mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.05		0.05	0.05	0.10	0.05	0.05	0.05	0.05	0.05	0.10				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.10	1.00	1.00
10										90							20			10				500	30	
10										70							20			10				400	30	
45										530							100			50				2500	160	
						640																				
<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		<0.2	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<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		<0.2	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<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		<0.2	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<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		<0.2	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<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		<0.2	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<0.001		<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001		<0.005	-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
<0.001		<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001		<0.005	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1

Table A2: Soil Analytical Results

Aldrin	Aldrin + Dieldrin (Sum of Total)	Dieldrin	DDD	o,p-+p,p DDD	4,4-DDE	DDT	alpha-BHC	beta-BHC	DDT+DDE+DDD (Sum of Total)	delta-BHC	Chlordane	Chlordane (trans)	alpha-Chlordane	gamma-Chlordane	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Heptachlorobenzene	Lindane	Methoxychlor	Toxaphene
mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0.05		0.05	0.05	0.10	0.05	0.05	0.05	0.05	0.05	0.10				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.10	1.00	1.00
10										90							20			10				500	30	
10										70							20			10				400	30	
45										530							100			50				2500	160	
						640																				
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.1	<0.2[ns]	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.05	0.11	0.11	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1

Table A3: Soil Asbestos Analytical Results

			Asbestos										Asbestos - Comments				
			Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																	
NEPM 2013 Soil HIL B												0.001					
NEPM 2013 Soil HIL C												0.001					
NEPM 2013 Soil HIL D						0.01						0.001					
Field_ID	**Sampled_Date-Time**	**Matrix_Type**															
JBS&G (2015)																	
HH BH01 0.12-0.2	14/08/2015	SOIL	1021	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
HH BH03 0.2-0.3	14/08/2015	SOIL	860	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
HH BH04 0.18-0.25	14/08/2015	SOIL	896	0	0	0	0	0	0.0009	0.0009	0.0009	0.0001	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	Chrysotile asbestos detected in the form of loose fibre bundles.	Organic fibre detected.	NIL
FM6 0.3-0.4	17/06/2015	SOIL	312	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.002% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
DP (2016)																	
1_0.16-0.35	25/05/2016	SOIL	30	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
1_0.36-0.46	25/05/2016	SOIL	65	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
1_0.56-0.8	25/05/2016	SOIL	30	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
2_0.37-0.5	25/05/2016	SOIL	30	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
2_1.8-2	25/05/2016	SOIL	45	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
3_0.21-0.3	24/05/2016	SOIL	55	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
3_0.7	24/05/2016	SOIL	35	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
4_0.4-0.8	24/05/2016	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
4_0.9-1.3	24/05/2016	SOIL	75	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
5_0.16-0.46	24/05/2016	SOIL	45	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
5_0.5-0.8	24/05/2016	SOIL	50	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
6_0.16-0.5	24/05/2016	SOIL	50	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
6_0.6-0.7	24/05/2016	SOIL	45	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
EIS (2017)																	
BH16 0.85-1.3	6/02/2017	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH17 1.85-2.0	7/02/2017	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH18 0.37-0.82	8/02/2017	SOIL	30	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH19 0.95-1.4	8/02/2017	SOIL	20	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH20 0.0-0.05	9/02/2017	SOIL	15	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH20 1.2-1.65	9/02/2017	SOIL	35	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH21 0.0-0.1	13/02/2017	SOIL	15	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH22 0.0-0.05	10/02/2017	SOIL	20	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH23 0.0-0.1	13/02/2017	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH8 1.25-1.75	29/05/2017	SOIL	15	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH9 0-0.3	2/06/2017	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH10 1.9-2.35	1/06/2017	SOIL	20	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH11 1.6-2.05	31/05/2017	SOIL	40	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH12 3.95-4.4	31/05/2017	SOIL	35	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH13 0.3-0.8	30/05/2017	SOIL	10	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
BH14 0.55-1.05	5/06/2017	SOIL	25	-	-	-	-	-	-	-	-	-	No asbestos detected at the reporting limit of 0.1g/kg	NIL	NIL	Organic Fibres detected	-
PB (2009)																	
PBBH01	17/12/2008	SOIL	-	-	-	-	-	-	-		-	-	No Asbestos Detected	-	-	-	-
PBBH01	17/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH02	18/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-	-	-
PBBH02	18/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH03	18/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-	-	-
PBBH03	18/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH04	17/12/2008	SOIL	-	-	-	-	-	-	-		-	-	No Asbestos Detected	-	-	-	-
PBBH04	17/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBBH05	17/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	No Asbestos Detected	-	-	-	-
PBBH05	17/12/2008	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBHA01	12/01/2009	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBHA01	12/01/2009	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBHA02	12/01/2009	SOIL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A3: Soil Asbestos Analytical Results

			Approx. Sample Mass	Mass ACM	Mass Asbestos in ACM	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment
			g	g	g	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment
EQL																	
NEPM 2013 Soil HIL B												0.001					
NEPM 2013 Soil HIL C												0.001					
NEPM 2013 Soil HIL D						0.01						0.001					
JBS&G (2018)																	
SB01 0.4-1.0	18/10/2018	SOIL	607	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
SB02 0.3-1.0	18/10/2018	SOIL	591	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
SB02 1.0-2.0	18/10/2018	SOIL	602	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
SB03 0.4-1.0	18/10/2018	SOIL	609	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	-	-	-	-
SB04 0.5-1.0	18/10/2018	SOIL	609	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB04 1.0-2.0	18/10/2018	SOIL	578	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB05 0.0-1.0	18/10/2018	SOIL	546	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB05 1.0-2.0	18/10/2018	SOIL	649	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB06 0.2-1.0	27/10/2018	SOIL	638	0	0	0	0	0	0.0008	0.0008	0.0008	0.0001	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	Chrysotile asbestos detected in the form of loose fibre bundles.	Organic Fibres detected	No respirable fibres detected
SB06 1.0-2.0	27/10/2018	SOIL	662	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB07 0.4-0.7	27/10/2018	SOIL	528	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB07 1.0-2.0	27/10/2018	SOIL	506	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB08 1.9-3.0	27/10/2018	SOIL	587	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
QS02 (Duplicate pair SB	27/10/2018	SOIL	569	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB09 0.2-1.0	27/10/2018	SOIL	591	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
QS04 (Duplicate pair SB	27/10/2018	SOIL	702	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB10 0.5-1.0	27/10/2018	SOIL	460	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
SB10 1.0-2.0	27/10/2018	SOIL	628	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	NIL	NIL	Organic fibre detected.	No respirable fibres detected
JBS&G (2019)																	
BH01_0.3-1.0 (BAG)	16/05/2019	SOIL	662	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH01_1.0-2.0 (BAG)	16/05/2019	SOIL	571	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH02_0.4-1.0 (BAG)	16/05/2019	SOIL	630	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH02_1.0-2.0 (BAG)	16/05/2019	SOIL	688	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH03_0.5-1.0 (BAG)	15/05/2019	SOIL	593	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH03_1.0-2.0 (BAG)	15/05/2019	SOIL	651	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH04_0.3-1.0 (BAG)	16/05/2019	SOIL	631	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH04_1.0-2.0 (BAG)	16/05/2019	SOIL	599	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH05_0.3-1.0 (BAG)	16/05/2019	SOIL	720	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH05_1.0-2.0 (BAG)	16/05/2019	SOIL	693	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH06_0.4-1.0 (BAG)	16/05/2019	SOIL	589	0	0	0	0	0	0.0043	0.0043	0.0043	0.0007	Total estimated asbestos concentration in AF = 0.00073% w/w.	Nil	AF: Chrysotile and amosite asbestos detected in the form of loose fibre bundles.	Organic fibres detected.	No respirable fibres detected.
BH06_1.0-2.0 (BAG)	16/05/2019	SOIL	586	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH08_0.2-1.0 (BAG)	15/05/2019	SOIL	623	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH08_1.0-2.0 (BAG)	15/05/2019	SOIL	721	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH08_2.0-3.0 (BAG)	15/05/2019	SOIL	500	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH09_0.2-1.0 (BAG)	15/05/2019	SOIL	823	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH09_1.0-2.0 (BAG)	15/05/2019	SOIL	504	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH10_0.3-1.0 (BAG)	15/05/2019	SOIL	789	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
BH10_2.0-3.0 (BAG)	15/05/2019	SOIL	561	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
QA20190515	15/05/2019	SOIL	562	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
QC20190515	15/05/2019	SOIL	585	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW01_1.0-2.0 (BAG)	16/05/2019	SOIL	312	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
QC20190516-1	16/05/2019	SOIL	455	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
QA20190516-1	16/05/2019	SOIL	382	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW02_0.5-1.0	13/05/2019	SOIL	758	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW02_1.0-2.0	13/05/2019	SOIL	656	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW03_0.4-1.0 (BAG)	15/05/2019	SOIL	655	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW03_1.0-2.0 (BAG)	15/05/2019	SOIL	551	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW04_0.4-1.0	14/05/2019	SOIL	596	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW04_1.0-2.0	14/05/2019	SOIL	401	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW05_1.0-2.0 (BAG)	15/05/2019	SOIL	393	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW06_0.4-1.0	14/05/2019	SOIL	468	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW06_1.0-2.0	14/05/2019	SOIL	651	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW07_0.25-1.0	14/05/2019	SOIL	662	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW07_1.0-2.0	14/05/2019	SOIL	508	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW08_0.4-1.0	14/05/2019	SOIL	463	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW08_1.0-2.0	14/05/2019	SOIL	607	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW09_0.4-1.0 (BAG)	15/05/2019	SOIL	634	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW09_1.0-2.0 (BAG)	15/05/2019	SOIL	559	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.
MW09_2.0-2.8 (BAG)	15/05/2019	SOIL	952	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.	Nil	Nil	Organic fibres detected.	No respirable fibres detected.

Evaluation of Existing Site Characterisation Data

Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay Precinct

Table B1 - Historical Groundwater Investigation Data

		Field Measurements *					Miscellaneous Inorga		Heavy Metals									Petroleum Hydrocarbons					PH (silica gel cleanup)			Volatile Organic Contaminants (VOCs)2								
		Dissolved oxygen	Redox potential	pH	Conductivity	Temperature ©	pH	Electrical Conductivity	Arsenic (As III)	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Phenolics (Total)	C6-C9	C10-C14	C15-C28	C29-C36	Total TPHs (C10-C36)	C10-C14	C15-C28	C29-C36	Benzene	Toluene	Ethyl Benzene	Total xylenes	o-xylene	m+p-xylene	Isopropylbenzene	n-Propylbenzene	tert -Butylbenzene	sec - Butylbenzene
unit		ppm	mV		mS/cm	C		(mS/cm)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
LOR		-	-	-	-	-	0.1	0.001	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.01	0.05	0.1	0.1		0.05	0.1	0.1	0.001	0.001	0.001	0.003	0.001	0.002	0.001	0.001	0.001	0.001
EPA (1994)																						0.6				0.3	0.3	0.14	0.38	0.38					
ANZECC 2000 (95% Eco Marine Waters)									0.013	0.0007	0.0044	0.0013	0.0044	0.00001	0.007	0.015										0.5	0.18	0.005		0.35	0.75				
NEPC (2013) HSL Vapour intrusion																		1	1							0.8	NL	NL	NL	NL	NL				
Sample ID	Date																																		
EIS 2010a																																			
BH13	Nov-97	-	-	-	-	-	-	-	<0.01	<0.0002	-	0.002	0.001	<0.0001	-	0.027	<0.05	<0.04	<0.1	<0.2	<0.2	-	-	-	-	<0.001	<0.001	<0.001	-	-	<0.003				
EIS 2010a																																			
MW508	Jun-10	0.3	129.2	6.75	1.2	22.9	6.3	1.1	0.005	<0.0001	<0.001	<0.001	<0.001	<0.0001	**0.018**	**0.022**	-	<0.01	<0.05	0.19	<0.1	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW512	Jun-10	0.3	134.6	7.05	0.8	19.4	6.8	0.8	0.005	<0.0001	<0.001	<0.001	0.001	<0.0001	0.006	**0.055**	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW513	Jun-10	0.2	44.7	6.63	0.77	22.1	6.7	0.69	<0.001	<0.0001	0.001	<0.001	<0.001	<0.0001	**0.011**	0.009	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW516	Jun-10	-	-	-	-	-	-	-	0.002	<0.0001	<0.001	**0.002**	**0.071**	<0.0001	0.003	**0.031**	-	<0.01	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW517D	Jun-10	0.2	90.1	7.09	1.3	24	6.8	1.1	0.012	<0.0001	<0.001	<0.001	<0.001	<0.0001	0.005	**0.084**	-	0.19	0.83	0.47	<0.1	**1.3**	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.024	0.011	0.0027	0.013
EIS 2010b																																			
MW605D	Aug-10	0.2	35.9	6.9	1.4	20.9	7	1.2	0.004	<0.0001	<0.001	<0.001	<0.001	<0.0001	0.002	0.005	-	<0.01	0.06	0.35	<0.1	0.41	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0033	0.0013	<0.001	<0.001
MW606	Aug-10	0.3	121.2	6.78	2	20.3	6.9	1.8	0.004	<0.0001	<0.001	<0.001	<0.001	<0.0001	0.006	0.03	-	<0.01	0.41	0.74	<0.1	**1.15**	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW608	Aug-10	0.7	272.9	5.41	11.9	20.8	5.7	8.9	0.003	0.0004	0.002	**0.057**	**0.008**	<0.0001	**0.022**	**0.17**	-	<0.01	0.058	0.45	0.13	**0.638**	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
EIS 2010c																																			
MW517	Aug-10	0.4	-61.9	6.97	1.2	19.8	6.7	1.3	-	-	-	-	-	-	-	-	-	0.032	0.37	0.24	<0.1	**0.61**	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
MW708	Aug-10	0.2	29.6	6.39	1.2	20.7	6.6	1.2	-	-	-	-	-	-	-	-	-	0.019	0.21	0.17	<0.1	0.38	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
MW712	Aug-10	0.3	61.7	6.81	1.6	19	6.8	1.6	-	-	-	-	-	-	-	-	-	0.078	0.5	0.27	<0.1	**0.77**	0.17	0.15	<0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
MW713	Aug-10	0.2	236.9	5.91	1.9	18.1	6.1	2	-	-	-	-	-	-	-	-	-	0.012	0.77	0.58	<0.1	**1.35**	0.19	0.21	<0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
E3C (2012)																																			
BH03	17/01/2012	4.54	12.1		42.54	20.7	6.72		<0.001	<0.0001	<0.001	**0.046**	<0.001	<0.00005	0.002	**0.068**	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.002	-	-	-	-
PB (2009)																																			
									0.001	*0.0001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.002*	-	*0.02*	*0.05*	*0.1*	*0.05*	-	-	-	-	*0.005*	*0.005*	*0.002*	-	*0.002*	*0.002*	-	-	-	-
MW01	12/01/2009	-	-	-	-	-	-	-	**<0.02**	<0.0002	**<0.005**	<0.01	0.001	<0.0001	**<0.01**	**0.186**	-	<0.05	<0.05	<0.2	<0.05	-	-	-	-	<0.001	<0.001	<0.001	-	<0.002	<0.001	-	-	-	-
PBMW02a	12/01/2009	-	-	-	-	-	-	-	**<0.02**	<0.0001	**<0.005**	<0.01	<0.001	**<0.0005**	**<0.01**	<0.01	-	<0.05	<0.05	<0.2	<0.05	-	-	-	-	<0.001	<0.001	<0.001	-	<0.002	<0.001	-	-	-	-
PBMW03a	12/01/2009	-	-	-	-	-	-	-	**<0.02**	<0.0002	**<0.005**	<0.01	0.002	<0.0001	**<0.01**	**0.041**	-	<0.05	<0.05	<0.2	<0.05	-	-	-	-	<0.001	<0.001	<0.001	-	<0.002	<0.001	-	-	-	-
PBMW04a	12/01/2009	-	-	-	-	-	-	-	**<0.02**	<0.0002	**<0.005**	<0.01	<0.001	<0.0001	**<0.01**	<0.01	-	<0.05	<0.05	<0.2	<0.05	-	-	-	-	<0.001	<0.001	<0.001	-	<0.002	<0.001	-	-	-	-
CDM (2012)																																			
MW1	11/06/2012	4.30	78	7.35	45237	19.2	-	-	0.001	0.0001	<0.001	**0.004**	**0.006**	<0.00005	0.001	**0.16**	-	<0.01	<0.05	<0.1	<0.1	<0.2	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.002	-	-	-	-
MW2	11/06/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW5	11/06/2015	1.69	-62.4	6.42	809	20.5	-	-	0.005	<0.0001	<0.001	<0.001	<0.001	<0.00005	<0.001	0.009	-	0.32	0.81	2.5	<0.1	**3.31**	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.002	-	-	-	-

Evaluation of Existing Site Characterisation Data

Appendix A - Summary of Historical Site Investig

Table B1 - Historical Groundwater Investigation I

				Polycyclic Aromatic Hydrocarbons (PAHs)																				
		n-Butylbenzene	Total VOCs	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(a)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-c,d)pyrene	Total PAHs	Hardness	Total Cyanide	Oil and Grease
unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				mg/L	mg/CaC03/L	mg/L	mg/L
LOR		0.001	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002				-	1	0.005	5
EPA (1994)																								
ANZECC 2000 (95% Eco Marine Waters)				0.05				0.0006	0.0001	0.001				0.0001										
NEPC (2013) HSL Vapour intrusion				NL																				
Sample ID	Date																							
EIS 2010a																								
BH13	Nov-97																							
EIS 2010a																								
MW508	Jun-10	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	ALPQL	304	-	<5
MW512	Jun-10	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	ALPQL	186	-	<5
MW513	Jun-10	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	ALPQL	236	-	<5
MW516	Jun-10	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
MW517D	Jun-10	0.0016	0.0523	0.0012	0.0001	0.004	0.004	**0.0042**	0.001	0.001	0.0007	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	0.0163	315	-	57
EIS 2010b																								
MW605D	Aug-10	<0.001	0.0046	0.0003	0.0001	0.0036	0.0027	**0.0029**	0.0006	0.0002	0.0001	0.0001	-	-	<0.0001	0.0019	-	-	-	-	-	387	<0.005	<5
MW606	Aug-10	<0.001	<0.001	0.0008	0.0003	0.0023	0.0027	**0.0008**	0.0003	0.0004	0.0003	0.0001	-	-	-	-	-	-	-	-	-	503	<0.005	<5
MW608	Aug-10	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-	-	-	-	1346	<0.005	<5
EIS 2010c																								
MW517	Aug-10	-	-	0.0004	<0.0001	0.0028	0.0025	**0.0024**	0.0004	0.0005	0.0003	<0.0001	<0.0001	<0.0001	-	-	<0.0002				-	-	-	<5
MW708	Aug-10	-	-	0.0001	<0.0001	0.0003D	0.0004D	0.0006D	0.0001	0.0003D	0.0002D	<0.0001	<0.0001	<0.0001	-	-	<0.0002				-	-	-	11D
MW712	Aug-10	-	-	0.0052	<0.0001	0.0003	0.0003	0.0002	<0.0001	0.0001	0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0002				-	-	-	<5
MW713	Aug-10	-	-	0.0003	0.0001	0.0007	0.0008	**0.0012**	0.0003	0.001	0.0009	0.0003	0.0002	**0.0002**	-	-	0.0002				-	-	-	<5
E3C (2012)																								
BH03	17/01/2012	-	-	<0.001	<0.001	<0.001	<0.001	**<0.001**	**<0.001**	<0.001	<0.001	<0.001	<0.001	**<0.001**			<0.002	<0.001	<0.001	<0.001	-	-	-	-
PB (2009)																								
		-	-	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0002*	*0.0002*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0006*	1	0.005	5
MW01	12/01/2009	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.002	<0.001	<0.001	<0.001	-	-	-	-
PBMW02a	12/01/2009	-	-	<0.001	<0.001	<0.001	<0.001	**0.004**	<0.001	**0.004**	0.003	<0.001	<0.001	<0.001	-	-	<0.002	<0.001	<0.001	<0.001	0.011	-	-	-
PBMW03a	12/01/2009	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	0.003	<0.001	<0.001	<0.001	0.003	-	-	-
PBMW04a	12/01/2009	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.002	<0.001	<0.001	<0.001	-	-	-	-
CDM (2012)																								
MW1	11/06/2012	-	<1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.002	<0.001	<0.001	<0.001	NC	-	-	-
MW2	11/06/2012	-																				-	-	-
MW5	11/06/2015	-	<1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.002	<0.001	<0.001	<0.001	NC	-	-	-

Table B2: Groundwater Analytical Results

	Heavy Metals								TPHs (NEPC 1999)					TRHs (NEPC 2013)						Non-Metallic Inorganics				Major Cations				BT		
	Arsenic (Total) (Filtered)	Cadmium (Filtered)	Chromium (Total) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Inorganic) (Filtered)	Nickel (Filtered)	Zinc (Filtered)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	C6-C10 Fraction	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	C6 - C10 less BTEX (F1)	>C10 - C16 less Naphthalene (F2)	Nitrate & Nitrite (as N)	Total Nitrogen (as N)	Phosphorus	Total Kjeldahl Nitrogen (as N)	Calcium	Potassium	Magnesium	Hardness as CaCO3	Benzene	Toluene	Ethylbenzene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.000	0.001	0.001	0.001	0.00005	0.001	0.001	0.010	0.050	0.100	0.100	0.100	0.010	0.050	0.100	0.100	0.010	0.050	0.050	0.200	0.100	0.200	0.500	0.500	0.500	1.000	0.001	0.001	0.001
ANZG (2018) Marine water 95% toxicant DGVs		0.0055		0.0013	0.0044	0.0004	0.07	0.015																				0.7		
NEPM 2013 GIL - Drinking Water	0.01	0.002[#1]		2[#1]	0.01[#1]	0.001	0.02[#1]																					0.001	0.8	0.3
NEPM 2013 Groundwater HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																		1[#1]	1[#1]									0.8	NL	NL
NEMP 2018 PFAS Tier 1 Screening Values - Interim Marine 95% species protection																														
NHMRC (2011) (as amended December 2014) (Factor 10)	0.1	0.02		20	0.1	0.01	0.2																					0.001[#1]	0.8[#1]	0.3[#1]
NEMP (HEPA 2018) - Health (Recreational Water)																														
Sample ID	**Sample Date**																													
JBS&G (2015)																														
BH606	2/07/2015	0.005	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.004	0.06	0.41	0.8	<0.1	1.2	0.17	0.64	0.6	<0.1	0.17	0.64	<0.05	0.7	<5	0.7	110	43	79	600	0.002	<0.001	<0.001
BH608	2/07/2015	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.002	<0.02	<0.05	0.1	<0.1	0.1	<0.02	<0.05	0.1	<0.1	<0.02	<0.05	0.07	0.5	<5	0.4	180	180	490	2500	<0.001	<0.001	<0.001
BH713	2/07/2015	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.003	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	0.07	<0.1	<0.1	<0.02	0.07	<0.05	3.9	<0.5	3.9	110	24	24	370	<0.001	<0.001	<0.001
BH716	2/07/2015	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.011	0.026	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05	<0.05	0.4	<0.5	0.4	5.9	1.5	24	120	<0.001	<0.001	<0.001
DB MW01	11/09/2015	<0.005	<0.0003	-	<0.005	<0.005	<0.0001	<0.005	0.026	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05	0.29	0.3	<0.1	<0.2	410	370	1400	6800	<0.001	<0.001	<0.001
FM6	1/07/2015	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.002	<0.02	0.21	0.7	0.2	1.1	0.04	0.39	0.6	<0.1	0.04	0.39	<0.05	13	<5	13	120	45	130	820	<0.001	<0.001	<0.001
RH MW02	11/09/2015	<0.005	<0.0003	-	<0.005	<0.005	<0.0001	<0.005	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05	<0.05	2.1	<0.1	2.1	80	15	38	360	<0.001	<0.001	<0.001
RHMW01	14/09/2015	0.005	<0.0001	<0.001	0.002	<0.001	<0.0001	0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05	<0.05	11	2.2	11	300	310	1300	6100	<0.001	<0.001	<0.001
DP (2016)																														
3	7/06/2016	<0.001	0.0004	<0.001	<0.001	<0.001	<0.00005	0.003	0.009	-	-	-	-	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
4	7/06/2016	0.006	<0.0001	<0.001	<0.001	<0.001	<0.00005	0.017	0.016	-	-	-	-	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
BH13	7/06/2016	0.001	<0.0001	<0.001	<0.003	<0.001	<0.00005	<0.001	0.018	-	-	-	-	-	<0.01	<0.05	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
PB (2009)																														
MW01	12/01/2009	<0.02	<0.0002	<0.005	<0.01	0.001	<0.0001	<0.01	0.186	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-					<0.001	<0.001	<0.001
PBMW02a	12/01/2009	<0.02	<0.0001	<0.005	<0.01	<0.01	<0.0005	<0.01	<0.01	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-					<0.001	<0.001	<0.001
PBMW03a	12/01/2009	<0.02	<0.0002	<0.005	<0.01	0.002	<0.0001	<0.01	0.041	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-					<0.001	<0.001	<0.001
PBMW04a	12/01/2009	<0.02	<0.0002	<0.005	<0.01	<0.001	<0.0001	<0.01	<0.01	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-					<0.001	<0.001	<0.001
JBS&G (2018)																														
MW1	3/11/2018	0.004	<0.0002	<0.001	0.002	<0.001	<0.0001	<0.001	0.008	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
PBMW 2A	26/10/2018	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
PBMW 3A	26/10/2018	0.001	<0.0002	<0.001	0.004	<0.001	<0.0001	<0.001	0.011	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
PBMW 4A	26/10/2018	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
SBMW 01	25/10/2018	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	0.032	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
DW01 (duplicate pair SBMW	25/10/2018	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	0.032	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
DW01A (triplicate pair SBM	25/10/2018	<0.001	<0.0001	<0.001	0.006	<0.001	<0.00005	0.002	0.039	<0.01	<0.05	<0.1	<0.1	-	<0.01	<0.05	<0.1	<0.1	<0.01	<0.05									<0.001	<0.001	<0.001
SBMW 02	25/10/2018	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
SBMW 03	26/10/2018	0.001	<0.0002	<0.001	0.004	<0.001	<0.0001	<0.001	0.013	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
SBMW 04	26/10/2018	0.002	<0.0002	<0.001	0.004	0.011	<0.0001	0.002	0.073	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
SBMW05	1/11/2018	0.002	<0.0002	<0.001	0.003	0.001	<0.0001	0.002	0.024	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
SBMW06	1/11/2018	<0.001	<0.0002	<0.001	0.002	0.001	<0.0001	0.002	0.067	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
JBS&G (2019)																														
BH08	22/05/2019	0.002	<0.0002	<0.001	<0.001	0.004	<0.0001	0.002	0.007	<0.02	0.24	0.5	<0.1	0.74	<0.02	0.22	0.5	<0.1	<0.02	0.22									<0.001	<0.001	<0.001
MW01	22/05/2019	0.002	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	0.008	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
MW02	22/05/2019	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
QC20190522	22/05/2019	0.003	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
QA20190522	22/05/2019	0.003	<0.0001	<0.001	<0.001	<0.001	<0.00005	<0.001	0.031	<0.01	<0.05	<0.1	<0.1	-	<0.01	<0.05	<0.1	<0.1	<0.01	<0.05									<0.001	<0.001	<0.001
MW03	22/05/2019	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
MW04	22/05/2019	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	0.013	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
MW06	22/05/2019	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
MW07	23/05/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									-	-	-
MW07	28/05/2019	0.003	<0.0002	<0.001	0.006	0.001	<0.0001	0.001	0.09	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001
MW08	23/05/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									-	-	-
MW08	28/05/2019	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.013	<0.02	<0.05	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.1	<0.02	<0.05									<0.001	<0.001	<0.001

Env Stds Comments

#1 Adopted from ANZECC

Table B2: Groundwater Analytical Results

EX			Chlorinated Alkanes																				Chlorinated Alkenes												
Xylene (m & p)	Xylene (o)	Xylene (Total)	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	dibromochloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	1,1-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
0.002	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001		0.001	0.001	0.001		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
						1.9																												
		0.6								0.003				$0.25^{\#5}$	0.003		$0.25^{\#5}$		$0.25^{\#5}$		0.004		0.05	0.03										0.0003
		NL																																
		6								0.03				2.5	0.03		2.5		2.5		0.04		0.5	0.3									$0.2^{\#3}$	0.003
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.001	<0.002	-	-	-	-	-	-	-	<0.001																									
<0.001	<0.002	-	-	-	-	-	-	-	<0.001																									
<0.001	<0.002	-	-	-	-	-	-	-	<0.001																									
<0.001	<0.002	-	-	-	-	-	-	-	<0.001																									
<0.002	<0.001	<0.003																																
<0.002	<0.001	<0.003																																
<0.002	<0.001	<0.003																																
<0.002	<0.001	<0.003																																
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<0.002	<0.001	<0.003																																
<0.002	<0.001	<0.003																																
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.001	<0.01		<0.01		<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
-	-	-	-	-	-	-	-	-		-	-	-			-	-	-	-	-	-	-	-		-			-	-	-	-	-	-	-	-
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
-	-	-	-	-	-	-	-	-		-	-	-			-	-	-	-	-	-	-	-		-			-	-	-	-	-	-	-	-
<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Table B2: Groundwater Analytical Results

| Chlorinated Benzenes | | | | | Monocyclic Aromatic Hydrocarbons | | | | | | | | | Polycyclic Aromatic Hydrocarbons | | | | | | | | |

Table B2: Groundwater Analytical Results

PFAS																							
Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorodecanoic acid (PFDA)	Perfluoroddecanoic acid (PFDoA)	Perfluoropentanoic acid (PFPeA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorooctanesulfonamide (FOSA)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroundecanoic acid (PFUnA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
0.01	0.01	0.05	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1
							220												0.13				
							5.6													0.7			

0.02#1	<0.01	<0.05	<0.05	<0.01	<0.01	0.03	0.02#1	<0.01	<0.01	<0.05	<0.01	0.01#1	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.04	0.05	0.1	0.1
0.02#1	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.12#1	<0.01	<0.01	<0.01	<0.01	<0.01	0.16	0.28	0.16	0.28	0.3	0.3
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
							<0.01					<0.01						<0.01	<0.01	<0.01			
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.03	0.03	0.03	<0.05	<0.1
0.02#1	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.1#1	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	0.17	0.07	0.17	0.19	0.19
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.03#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.03	<0.05	<0.1
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.01#1	<0.01	<0.05	<0.05	<0.01	<0.01	0.01	0.01#1	<0.01	<0.01	<0.05	<0.01	0.01#1	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.03	0.04	0.06	<0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	0.03#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.03	<0.05	<0.1
<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.01#1	<0.01	<0.05	<0.05	<0.01	<0.01	0.01	0.01#1	<0.01	<0.01	<0.05	<0.01	0.01#1	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.03	0.04	0.06	<0.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay Precinct
Table C - Historical Surface Water Investigation Data

			Field Measurements					Heavy Metals								Petroleum Hydrocarbons				Volatile Organic Contaminants (VOCs)2							Polycyclic Aromatic Hydrocarbons (PAHs)					Organotin Compounds			Misc
			Dissolved oxygen	Redox potential	pH	Conductivity	Temperature	Arsenic (As III)	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	C6-C9	C10-C14	C15-C28	C29-C36	Benzene	Toluene	Ethyl Benzene	Total xylenes	o-xylene	m+p-xylene	Total VOCs	Naphthalene	Phenanthrene	Anthracene	Fluoranthene	Benzo(a)pyrene	Monobutyltin (mg/L Sn)	Dibutyltin (mg/L Sn)	Tributyltin (mg/L Sn)	Total Cyanide
LOR			(ppm)	(mV)		(mS/cm)	©	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L Sn	mg/L Sn	mg/L Sn	mg/L
PQL Envirolab			-	-	-	-	-	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.001	0.01	0.05	0.1	0.1	0.001	0.001	0.001	0.003	0.001	0.002	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.000002	0.000002	0.000002	0.005
EPA (1994)																				0.3	0.3	0.14	0.38	0.38											
ANZECC 2000 (95% Eco Marine Waters)								0.013	0.0007	0.0044	0.0013	0.0044	0.00001	0.007	0.015					0.5	0.18	0.005		0.35	0.75		0.05	0.0006	0.0001	0.001	0.0001			0.000006	
NEPC (2013) HSL Vapour intrusion																1	1			0.8	NL	NL	NL	NL	NL		NL							
Sample ID	**Date**	**Description**																																
EIS (2010b)																																		
SWAD	Aug-10	Surface Water	6.7	255.4	7.32	33.8	12	0.002	0.0002	LPQL	0.012	LPQL	LPQL	LPQL	**0.026**	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	ALPQL	LPQL	LPQL	LPQL	LPQL	LPQL	-	-	-	LPQL
SWB	Aug-10	Surface Water	6.9	260.8	7.85	33.9	12.3	0.002	0.0001	LPQL	0.008	LPQL	LPQL	LPQL	**0.024**	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	ALPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
SWC	Aug-10	Surface Water	7.7	249.1	7.86	33.2	12.9	0.002	0.0002	LPQL	0.008	LPQL	LPQL	0.001	**0.029**	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	ALPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.0000049	LPQL	LPQL	LPQL

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay
Table C - Historical Sediment Investigation Data

			Heavy Metals								Petroleum Hydrocarbons					TRHs		MAHs						PAHs																	
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	C6-C9	C10-C14	C15-C28	C29-C36	TPH C10-C36	**C6 - C10 less BTEX (F1)**	**>C10 - C16 less Naphthalene (F2)**	Benzene	Toluene	Ethyl Benzene	m&p-Xylene	o-Xylene	Total Xylenes	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)&(k)fluoranthene	Benzo(e)pyrene	Indeno(123-cd)pyrene	Dibenz(ah)anthracene	Benzo(g.h.i)perylene	Total PAHs
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
																20.00	50.00																							
EIS (2010b)																																								
PQL/LOR			*4*	*0.5*	*1*	*1*	*1*	*0.1*	*1*	*1*	*25*	*50*	*100*	*100*	*100*			*0.5*	*0.5*	*1*			*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*		*0.05*		*0.1*		-
SSA	Sediment	1/08/2010	11	0.9	29	260	260	1	19	690	LPQL	LPQL	560	600	1160			LPQL	LPQL	LPQL	-	-	LPQL	LPQL	0.1	LPQL	LPQL	0.4	0.2	1.2	1.7	0.8	0.6	-	1.8	-	0.2	-	7
SSB	Sediment	1/08/2010	10	0.9	32	150	220	1.3	27	460	LPQL	LPQL	560	700	1260			LPQL	LPQL	LPQL	-	-	LPQL	0.1	0.1	LPQL	LPQL	0.6	0.2	1.5	2.8	0.9	0.8	-	2	-	0.2	-	9.2
SSC	Sediment	1/08/2010	5	LPQL	18	130	150	0.3	11	310	LPQL	LPQL	210	340	550			LPQL	LPQL	LPQL	-	-	LPQL	LPQL	0.1	LPQL	LPQL	0.5	0.1	1	1.2	0.6	0.5	-	1.1	-	0.1	-	5.2
PB (2009)																																								
LOR			*4*	*1*	*1*	*1*	*1*	*0.1*	*1*	*1*	*10*	*50*	*100*	*100*	*250*			*0.2*	*0.5*	*0.5*	*1*	*0.5*	*1.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*1*	*0.5*	*0.5*	*0.5*	*0.5*	-
Sample ID	Depth (m)	Date Sampled																					Normalised PAHs																	
PBSS01	0.0-0.4	14-31/01/2009	24	4	65	290	639	3.45	24	1150	<10	<50	1100	1080	2180			<0.2	<0.5	<0.5	<1	<0.5	--	0.08	0.07	<0.5	<0.5	0.4	0.17	0.93	1.51	0.51	0.51	1.67	1.03	0.58	0.22	0.65	8
PBSS01	0.5-1.0	14-31/01/2009	25	3	55	258	462	3.42	22	867	<10	<50	1150	1040	2190			<0.2	<0.5	<0.5	<1	<0.5	--	0.14	0.1	<0.5	0.08	1.03	0.98	1.31	2.17	0.8	0.73	2.37	1.59	0.86	0.31	0.93	13
PBSS01	1.0-1.5	14-31/01/2009	28	4	67	275	414	3.26	23	838	<10	<50	1970	1580	3550			<0.2	<0.5	<0.5	<1	<0.5	--	0.15	0.25	0.09	0.19	1.13	0.6	3.64	5.13	1.96	1.96	6.04	4.21	2.19	0.74	2.09	30
PBSS02	0.0-0.4	14-31/01/2009	23	1	53	263	333	2.79	15	619	<10	<50	420	530	950			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.08	<0.5	<0.5	0.28	0.13	0.88	1.18	0.48	0.5	1.83	1.32	0.75	0.25	0.78	8
PBSS03	0.0-0.4	14-31/01/2009	20	1	31	109	209	2.21	11	323	<10	<50	670	510	1180			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.38	<0.5	0.21	1.08	0.83	8.92	12.75	3.75	3.63	12.5	9.17	4.71	1.54	4.63	64
PBSS04	0.0-0.4	14-31/01/2009	19	2	61	287	495	14.8	32	849	<10	<50	780	940	1720			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.1	<0.5	<0.5	0.31	0.15	0.81	1.13	0.45	0.5	1.77	1.15	0.68	0.26	0.71	8
PBSS05	0.0-0.4	14-31/01/2009	19	2	53	288	408	2.98	20	806	<10	<50	670	920	1590			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.09	<0.5	<0.5	0.33	0.15	0.91	1.22	0.47	0.53	1.82	1.2	0.67	0.24	0.65	8
PBSS05	0.5-1.0	14-31/01/2009	22	3	64	272	607	3.08	23	923	<10	<50	780	810	1590			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.09	<0.5	<0.5	0.43	0.19	1.1	1.81	0.55	0.67	2.07	1.34	0.72	0.26	0.71	10
PBSS05	1.0-1.5	14-31/01/2009	26	3	60	271	560	3.93	22	941	<10	<50	1330	1280	2610			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.1	<0.5	<0.5	0.54	0.27	1.85	2.71	0.94	1.02	2.69	1.87	0.88	0.31	0.87	14
PBSS06	0.0-0.4	14-31/01/2009	16	<0.1	27	9	22	0.27	7	34	<10	<50	<100	<100	--			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.56	2.63	0.69	0.81	1.25	0.88	0.38	LPQL	0.38	10
PBSS06	0.5-1.0	14-31/01/2009	6	<0.1	11	6	19	0.19	2	20	<10	<50	<100	<100	--			<0.2	<0.5	<0.5	<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
PBSS07	0.0-0.4	14-31/01/2009	25	4	60	309	684	3.33	25	1080	<10	<50	690	710	1400			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	0.33	0.17	0.79	1.6	0.44	0.42	1.67	1.15	0.58	0.21	0.6	8
PBSS07	0.5-1.0	14-31/01/2009	36	<0.1	21	<2	9	0.36	4	8	<10	<50	<100	<100	--			<0.2	<0.5	<0.5	<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
PBSS08	0.0-0.4	14-31/01/2009	21	2	60	321	558	2.97	21	984	<10	<50	400	470	870			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	LPQL	<0.5	0.27	0.12	0.75	1.06	0.37	0.43	1.18	0.75	0.39	0.12	0.47	6
PBSS09	0.0-0.4	14-31/01/2009	12	0	16	103	207	2.57	9	297	<10	<50	260	110	370			<0.2	<0.5	<0.5	<1	<0.5	--	0.17	0.21	0.24	0.48	2.59	1	6.83	6.79	2.59	2.55	3.45	2.38	0.97	0.34	1.14	32
PBSS09	0.5-1.0	14-31/01/2009	16	<0.1	29	3	13	0.33	3	6	<10	<50	<100	<100	--			<0.2	<0.5	<0.5	<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
PBSS10	0.0-0.4	14-31/01/2009	8	1	25	71	165	0.74	6	211	<10	<50	270	340	610			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	0.5	nd	1.33	1.83	0.75	0.75	2.5	1.58	0.83	LPQL	1	11
PBSS10	0.5-1.0	14-31/01/2009	4	<0.1	14	2	14	0.07	5	10	<10	<50	<100	<100	--			<0.2	<0.5	<0.5	<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
PBSS11	0.0-0.4	14-31/01/2009	19	3	65	386	900	3.49	28	1340	<10	<50	1830	2180	4010			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.1	<0.5	<0.5	0.33	0.14	0.9	1.41	0.51	0.58	1.59	0.94	0.46	0.17	0.54	8
PBSS11	0.5-1.0	14-31/01/2009	36	4	63	283	722	3.44	29	1130	<10	<50	1480	1340	2820			<0.2	<0.5	<0.5	<1	<0.5	--	0.2	0.17	<0.5	0.2	1.11	0.69	4.34	5.49	1.83	1.97	3.71	2.34	1	0.34	1.11	25
PBSS12	0.0-0.4	14-31/01/2009	26	7	71	370	1270	13.5	44	1660	<10	<50	2560	2150	5000			<0.2	<0.5	<0.5	<1	<0.5	--	0.15	0.14	0.2	0.25	1.32	0.54	3.69	3.83	1.61	1.58	2.54	1.59	0.66	0.25	0.73	19
PBDS01	0.0-0.4	14-31/01/2009	14	1	48	233	325	1.6	15	1160	<10	<50	400	520	920			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	0.35	0.18	0.94	1.29	0.56	0.56	1.47	1	0.44	0.15	0.5	7
PBDS02	0.0-0.4	14-31/01/2009	17	1	58	369	504	2.73	21	941	<10	<50	790	1040	1830			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	0.27	0.13	0.75	0.98	0.44	0.41	1.09	0.67	0.31	0.11	0.36	6
PBDS03	0.0-0.4	14-31/01/2009	13	2	44	240	502	5.04	21	909	<10	<50	750	870	1620			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	0.84	0.26	1.84	2.26	0.84	1	2.11	1.16	0.5	0.16	0.58	12
PBDS04	0.0-0.4	14-31/01/2009	12	2	30	221	427	2.23	31	862	<10	<50	990	840	1830			<0.2	<0.5	<0.5	<1	<0.5	--	0.24	0.24	0.21	0.33	2.03	0.85	5.58	5.88	2.55	2.73	4.24	2.61	1.09	0.33	1.09	30
PBDS05	0.0-0.4	14-31/01/2009	2	0	9	50	85	*<0.25	9	177	<10	<50	120	190	310			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	<0.5	<0.5	<0.5	3.5	1	5.33	5.33	2.5	2.33	3.33	2.17	1	<0.5	1	28
PBDS06	0.0-0.4	14-31/01/2009	7	1	31	174	317	1.17	19	751	<10	<50	1410	1590	3000			<0.2	<0.5	<0.5	<1	<0.5	--	<0.5	0.26	<0.5	0.15	1.41	0.47	2.38	2.44	1.18	1.18	2.06	1.15	0.5	0.21	0.53	14
Umwelt (2008)																																								
LOR			*mg/kg*	*1*	*mg/kg*	*mg/kg*	*mg/kg*	*0.1*	*mg/kg*	*mg/kg*	*25*	*50*	*100*	*100*	*250*			*0.5*	*0.5*	*1*	*2*	*1*	*mg/kg*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*	*1.55*
S1	Sediment	5/05/2008	8.4	1.5	31	160	340	0.52	16	570	<25	<50	1200	800	2000			<0.5	<0.5	<1	<2	<1	-	0.3	0.2	<0.1	0.1	1.1	0.3	2	2.8	1.1	1.1	2.8	1.7	1.1	0.2	1.1	15.9
S2	Sediment	5/05/2008	5.5	<1	26	190	190	<0.1	13	1100	<25	<50	200	130	330			<0.5	<0.5	<1	<2	<1	-	0.027	0.042	0.028	0.037	0.3	0.061	0.44	0.51	0.6	0.36	0.81	0.39	0.28	0.097	0.46	4.4
S3	Sediment	5/05/2008	27	1.3	50	260	780	1.7	27	840	<25	<50	950	700	1650			<0.5	<0.5	<1	<2	<1	-	0.2	0.4	0.3	0.4	3.6	1.1	10	11	5.4	5.4	14	8.8	5.1	1.1	4.6	71.4
S4	Sediment	5/05/2008	17	1.2	34	180	260	1.2	11	530	<25	<50	620	400	1020			<0.5	<0.5	<1	<2	<1	-	0.25	0.21	0.054	0.15	0.78	0.31	1.6	2.2	1.3	1.3	4.9	3.4	1.8	0.77	2.8	21.8
S5	Sediment	5/05/2008	8.7	<1	18	99	140	0.59	5.9	270	<25	<50	330	230	560			<0.5	<0.5	<1	<2	<1	-	<0.1	0.1	<0.1	<0.1	0.5	0.2	1.4	1.7	0.8	0.8	2.7	1.7	1.2	0.2	1	12.3
S6	Sediment	5/05/2008	14	<1	35	210	270	0.74	12	670	<25	<50	140	130	270			<0.5	<0.5	<1	<2	<1	-	0.27	0.26	0.075	0.14	0.91	0.39	1.9	2.4	1.6	1.6	5.3	3.7	2	0.86	3.3	24.7
S7	Sediment	5/05/2008	14	<1	23	140	200	1.4	9.5	380	<25	<50	400	290	690			<0.5	<0.5	<1	<2	<1	-	0.2	0.4	<0.1	0.2	1.3	0.5	3.8	4.8	2.2	2.2	7.6	5.4	3.1	0.6	2.8	35.1
S8	Sediment	5/05/2008	27	1.1	67	310	450	3.6	20	820	<25	<50	860	610	1470			<0.5	<0.5	<1	<2	<1	-	0.3	0.25	0.074	0.12	0.8	0.3	1.6	2.1	1.4	1.4	5	3	1.9	0.73	2.9	21.9
S9	Sediment	5/05/2008	28	<1	69	360	490	3	20	890	<25	<50	1000	770	1770			<0.5	<0.5	<1	<2	<1	-	0.2	0.5	<0.1	0.2	1.6	0.6	5.2	6.5	2.9	3	11	6.5	4.2	0.8	3.8	47
S10	Sediment	5/05/2008	27	1.8	72	380	550	3.3	22	1000	<25	<50	1100	730	1830			<0.5	<0.5	<1	<2	<1	-	0.54	0.47	0.15	0.29	2	0.8	3.3	4.4	3.2	3.1	9.7	6.4	4.9	2	7.5	48.8

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay
Table C - Historical Sediment Investigation Data

			Heavy Metals								Petroleum Hydrocarbons					TRHs		MAHs						PAHs															
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	C6-C9	C10-C14	C15-C28	C29-C36	TPH C10-C36	**C6 - C10 less BTEX (F1)**	**>C10 - C16 less Naphthalene (F2)**	Benzene	Toluene	Ethyl Benzene	m&p-Xylene	o-Xylene	Total Xylenes	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)&(k)fluoranthene	Benzo(e)pyrene	Indeno(123-cd)pyrene	Dibenz(ah)anthracene	Benzo(g,h,i)perylene	Total PAHs
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
																20.00	50.00																						
EIS (2017)																																								
Sample ID	Depth (m)	Date Sampled																																						
BH8	1.25-1.75	29/05/2017	21	4.1	58	-	890	2.3	29	-	-	-	-	-	-	<25	130	<0.2	<0.5	-	-	<1	<3	0.1	0.1	0.1	0.1	1	0.3	3.5	4.8	1.9	1.5	-	2	-	0.2	-	21.2
BH8	3.2-3.65	29/05/2017	<4	<0.4	13	-	14	<0.1	2	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.1	<0.1	-	0.07	-	<0.1	-	0.57
BH8	12.42-12.6	29/05/2017	<4	<0.4	<1	-	<1	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH9	0-0.3	2/06/2017	<4	<0.4	15	-	96	<0.1	8	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	0.1	<0.1	<0.1	0.6	0.3	3.3	3.2	2	1.5	-	1.6	-	0.1	-	16.7
BH9	3.75-4.2	2/06/2017	<4	<0.4	23	-	12	<0.1	2	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH9	9.38-9.5	2/06/2017	<4	<0.4	1	-	<1	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH10	11.37-11.5	1/06/2017	<4	<0.4	15	-	9	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH10	1.9-2.35	1/06/2017	10	2	26	-	500	1.5	12	-	-	-	-	-	-	<25	70	<0.2	<0.5	-	-	<1	<3	0.2	<0.1	<0.1	0.1	0.6	0.2	1.5	3.1	1	0.7	-	1.4	-	0.1	-	12.7
BH10	4.55-5.0	1/06/2017	5	<0.4	9	-	17	<0.1	2	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH11	1.6-2.05	31/05/2017	<4	<0.4	14	-	11	<0.1	3	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH11	9.14-9.25	31/05/2017	<4	<0.4	7	-	3	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH12	3.95-4.4	31/05/2017	<4	<0.4	17	-	69	<0.1	3	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH12	8.75-9.2	31/05/2017	9	0.5	13	-	14	<0.1	9	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH12	15.05-15.15	31/05/2017	<4	<0.4	<1	-	2	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH13	0.3-0.8	30/05/2017	18	1	47	-	400	2	17	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.1	0.3	0.1	0.4	3.7	0.6	5	6.7	2.6	1.9	-	2.7	-	0.3	-	31.2
BH13	3.2-3.7	30/05/2017	<4	<0.4	20	-	17	<0.1	4	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH13	13.96-14.05	30/05/2017	<4	<0.4	<1	-	1	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH14	0.55-1.05	5/06/2017	4	0.8	9	-	190	1	9	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.3	0.2	0.3	0.3	2.5	1	6.1	8.6	3.3	2.6	-	3.1	-	0.4	-	36.7
BH14	4.0-4.35	5/06/2017	19	2	15	-	410	2.8	14	-	-	-	-	-	-	<25	87	<0.2	<0.5	-	-	<1	<3	5.2	0.5	5.3	7.9	52	16	59	57	23	21	-	13	-	2	-	297.4
BH14	7.73-7.85	5/06/2017	<4	<0.4	<1	-	<1	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH15	4.72-5.17	14/02/2017	<4	<0.4	7	-	13	<0.1	1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH15	5.49-5.6	14/02/2017	<4	<0.4	1	-	8	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH16	0.85-1.3	6/02/2017	<4	<0.4	8	-	18	<0.1	1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.5	0.1	0.1	-	0.1	-	<0.1	-	1.4
BH16	3.9-4.25	6/02/2017	<4	<0.4	7	-	8	<0.1	1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH16	14.13-14.25	6/02/2017	<4	<0.4	6	-	13	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH17	1.85-2.0	7/02/2017	17	2	31	-	320	2.5	12	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.1	<0.1	0.3	0.1	0.9	0.5	2.6	4	1.3	1.4	-	2	-	0.3	-	22.2
BH17	5.6-6.0	7/02/2017	<4	<0.4	19	-	4	<0.1	4	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH17	7.21-7.35	7/02/2017	<4	<0.4	2	-	10	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH18	0.37-0.82	8/02/2017	<4	<0.4	12	-	7	<0.1	4	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH18	13.6-13.75	9/02/2017	<4	<0.4	1	-	4	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH19	0.95-1.4	8/02/2017	21	<0.4	24	-	11	<0.1	3	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH19	7.5-7.95	8/02/2017	<4	<0.4	13	-	2	<0.1	1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH19	9.86-9.95	13/02/2017	<4	<0.4	13	-	4	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH20	0.0-0.05	9/02/2017	25	<0.4	34	-	69	0.4	11	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	0.2	<0.1	0.4	0.3	1.6	2.7	0.6	0.6	-	0.82	-	0.1	-	10.82
BH20	1.2-1.65	9/02/2017	8	<0.4	8	-	7	<0.1	2	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH20	15.59-13.7	10/02/2017	<4	<0.4	1	-	4	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH20	15.59-13.7	10/02/2017	<4	<0.4	1	-	4	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH21	0.0-0.1	13/02/2017	16	<0.4	22	-	190	1.7	10	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.1	<0.1	0.3	0.2	1.1	0.6	2.7	3	0.9	1.1	-	1	-	0.2	-	15.8
BH21	0.4-0.5	13/02/2017	14	<0.4	29	-	19	<0.1	6	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH21	12.51-12.61	13/02/2017	<4	<0.4	2	-	18	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH22	0.0-0.05	10/02/2017	29	3	65	-	640	4.4	26	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.3	<0.1	0.8	0.3	1.6	0.9	4	7.3	2.2	2.1	-	4.7	-	0.7	-	45.7
BH22	0.4-0.5	13/02/2017	25	<0.4	23	-	7	<0.1	4	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH22	9.4-9.55	10/02/2017	<4	<0.4	2	-	9	<0.1	<1	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH23	0.0-0.1	13/02/2017	7	<0.4	10	-	50	0.3	4	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	0.1	-	0.1	-	<0.1	-	1.1
BH23	1.5-1.95	13/02/2017	<4	<0.4	25	-	17	<0.1	7	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH23	10.01-10.15	13/02/2017	<4	<0.4	3	-	10	<0.1	5	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1
BH24	0.0-0.5	15/02/2017	<4	0.7	27	-	270	1.2	9	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	0.3	<0.1	0.7	0.3	1.6	0.7	4.5	5	1.9	1.9	-	1.6	-	0.2	-	23.5
BH24	1.0-1.5	15/02/2017	<4	<0.4	12	-	9	<0.1	2	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	0.1
BH24	5.71-5.81	15/02/2017	<4	<0.4	12	-	16	<0.1	7	-	-	-	-	-	-	<25	<50	<0.2	<0.5	-	-	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation
Results - Blackwattle Bay
Table C - Historical Sediment Investigation Data

					OCPs																									TBT and TOC					PCBs			Cyanide	Phenols	VHCs
			TOC Value	Normalised Total PAHs	Total DDT	ppDDE	ppDDD	4,4DDE	Chlordane	Dieldrin	Endrin	trans-Chlordane	cis-Chlordane	Hexachlorobenzene(HCB)	alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	alpha-Chlordane	Heptachlor	Heptachlorepoxide	alpha-Endosulfan	beta-Endosulfan	Aldrin	EndosulfanSulfate	Methoxychlor	Oxychlordane	Endrin Aldehyde	Endrin Ketone	Monobutyltin as Sn	Dibutyltin as Sn	Tributyltin as Sn	Total Organic Carbon %	Normalised Tributyltin as Sn	Total PCBs	TOC Value	Normalised PCBs (Total)	Total Cyanide	Sum Phenols	SUM VHCs
Units			%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				ng/g	ng/g	ng/g	%	ng/g	mg/kg	%	mg/kg	mg/kg		
				0.50				0.05																												0.10			
EIS (2010b)																																									
PQL/LOR					*0.1*	*0.1*	*0.1*		*0.1*	*0.1*	*0.1*																								*0.1*			*0.5*		
SSA	Sediment	1/08/2010			LPQL	LPQL	LPQL		LPQL	LPQL	LPQL	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1			<0.5		
SSB	Sediment	1/08/2010			LPQL	LPQL	LPQL		LPQL	LPQL	LPQL	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1			<0.5		
SSC	Sediment	1/08/2010			LPQL	LPQL	LPQL		LPQL	LPQL	LPQL	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1			<0.5		
PB (2009)																																								
LOR					*0.005*	*0.001*	*0.001*		*mg/kg*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*		*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.005*				*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*3*			-	-	-
Sample ID	Depth (m)	Date Sampled																																						
PBSS01	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	11	7.2	1.5	<3.0			-	-	-
PBSS01	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	1	5.9	0.2	<3.0			-	-	-
PBSS01	1.0-1.5	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	5.3	<0.5	<3.0			-	-	-
PBSS02	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	4	21	6	3.5	<3.0			-	-	-
PBSS03	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	1	2.4	0.5	<3.0			-	-	-
PBSS04	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	3	30	6.2	4.8	<3.0			-	-	-
PBSS05	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	2	20	5.5	3.6	<3.0			-	-	-
PBSS05	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	2	32	5.8	5.5	<3.0			-	-	-
PBSS05	1.0-1.5	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	1	5.2	0.2	<3.0			-	-	-
PBSS06	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	1.6	<0.5	<3.0			-	-	-
PBSS06	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<3.0			-	-	-
PBSS07	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	2	19	4.8	4	<3.0			-	-	-
PBSS07	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<3.0			-	-	-
PBSS08	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	3	43	5.1	8.4	<3.0			-	-	-
PBSS09	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	2.9	<0.5	<3.0			-	-	-
PBSS09	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	1.4	<0.5	<3.0			-	-	-
PBSS10	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	5	6	1.2	5.1	<3.0			-	-	-
PBSS10	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	0.7	<0.5	<3.0			-	-	-
PBSS11	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	23	6.9	3.3	<3.0			-	-	-
PBSS11	0.5-1.0	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	7	3.5	2.1	<3.0			-	-	-
PBSS12	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	<0.5	<0.5	5.9	<0.5	<3.0			-	-	-
PBDS01	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	1	14	94	3.4	27.6	<3.0			-	-	-
PBDS02	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	11	6.4	1.7	<3.0			-	-	-
PBDS03	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	3	24	3.8	6.3	<3.0			-	-	-
PBDS04	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	5	3.3	1.4	<3.0			-	-	-
PBDS05	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	3	0.6	4.3	<3.0			-	-	-
PBDS06	0.0-0.4	14-31/01/2009			<0.005	<0.001	<0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	-	-	<0.5	1	3	3.4	0.8	<3.0			-	-	-
Umwelt (2008)																																								
LOR					*0.1/0.001*	*0.1/0.001*	*0.1/0.001*			*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*		*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*	*0.1/0.001*					*0.5*					*0.1*			*0.5*	*1*	*1*
S1	Sediment	5/05/2008			<0.1	<0.1	<0.1		-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1			-	-	-
S2	Sediment	5/05/2008			<0.001	<0.001	<0.001		-	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	1.9	2.4	-	-	<0.1			<0.5	<LOR	<LOR
S3	Sediment	5/05/2008			-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-
S4	Sediment	5/05/2008			<0.001	0.0068	<0.001		-	0.0058	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.72	4.4	40	-	-	<0.1			<0.5	<LOR	<LOR
S5	Sediment	5/05/2008			-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-
S6	Sediment	5/05/2008			<0.001	0.0088	0.0073		-	0.0048	<0.001	0.0072	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.93	3.3	19	-	-	<0.1			<0.5	<LOR	<LOR
S7	Sediment	5/05/2008			-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-
S8	Sediment	5/05/2008			<0.001	0.011	0.007		-	0.0045	<0.001	0.011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.94	4.7	5	-	-	<0.1			<0.5	<LOR	<LOR
S9	Sediment	5/05/2008			-	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-
S10	Sediment	5/05/2008			<0.001	0.015	0.037		-	0.01	<0.001	0.017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1.1	3.2	8.2	-	-	<0.1			<0.5	<LOR	<LOR

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay
Table C - Historical Sediment Investigation Data

					OCPs																												TBT and TOC					PCBs			Cyanide	Phenols	VHCs
			TOC Value	Normalised Total PAHs	Total DDT	ppDDE	ppDDD	4,4DDE	Chlordane	Dieldrin	Endrin	trans-Chlordane	cis-Chlordane	Hexachlorobenzene(HCB)	alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	alpha-Chlordane	Heptachlor	Heptachlorepoxide	alpha-Endosulfan	beta-Endosulfan	Aldrin	EndosulfanSulfate	Methoxychlor	Oxychlordane	Endrin Aldehyde	Endrin Ketone	Monobutyltin as Sn	Dibutyltin as Sn	Tributyltin as Sn	Total Organic Carbon %	Normalised Tributyltin as Sn	Total PCBs	TOC Value	Normalised PCBs (Total)	Total Cyanide	Sum Phenols	SUM VHCs
Units			%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				ng/g	ng/g	ng/g	%	ng/g	mg/kg	%	mg/kg	mg/kg			
				0.50				0.05																													0.10					
EIS (2017)																																											
Sample ID	Depth (m)	Date Sampled																																									
BH8	1.25-1.75	29/05/2017	3.9	5.4	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	0.3	3.9	0.07692			
BH8	3.2-3.65	29/05/2017	3.9	0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH8	12.42-12.6	29/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH9	0-0.3	2/06/2017	3.9	4.3	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH9	3.75-4.2	2/06/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH9	9.38-9.5	2/06/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH10	11.37-11.5	1/06/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH10	1.9-2.35	1/06/2017	3.9	3.3	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	0.2	3.9	0.05128			
BH10	4.55-5.0	1/06/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH11	1.6-2.05	31/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH11	9.14-9.25	31/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH12	3.95-4.4	31/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH12	8.75-9.2	31/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH12	15.05-15.15	31/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH13	0.3-0.8	30/05/2017	3.9	8.0	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH13	3.2-3.7	30/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH13	13.96-14.05	30/05/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH14	0.55-1.05	5/06/2017	3.9	9.4	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH14	4.0-4.35	5/06/2017	3.9	76.3	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH14	7.73-7.85	5/06/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH15	4.72-5.17	14/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH15	5.49-5.6	14/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH16	0.85-1.3	6/02/2017	3.9	0.4	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH16	3.9-4.25	6/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH16	14.13-14.25	6/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH17	1.85-2.0	7/02/2017	3.9	5.7	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH17	5.6-6.0	7/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH17	7.21-7.35	7/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH18	0.37-0.82	8/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH18	13.6-13.75	9/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH19	0.95-1.4	8/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH19	7.5-7.95	8/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH19	9.86-9.95	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH20	0.0-0.05	9/02/2017	3.9	2.8	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH20	1.2-1.65	9/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH20	15.59-13.7	10/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH20	15.59-13.7	10/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH21	0.0-0.1	13/02/2017	3.9	4.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH21	0.4-0.5	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH21	12.51-12.61	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH22	0.0-0.05	10/02/2017	3.9	11.7	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH22	0.4-0.5	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH22	9.4-9.55	10/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH23	0.0-0.1	13/02/2017	3.9	0.3	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH23	1.5-1.95	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH23	10.01-10.15	13/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH24	0.0-0.5	15/02/2017	3.9	6.0	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH24	1.0-1.5	15/02/2017	3.9	0.0	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			
BH24	5.71-5.81	15/02/2017	3.9	LOR	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	<0.1	-	LOR			

Evaluation of Existing Site Characterisation Data
Appendix A - Summary of Historical Site Investigation Results - Precinct 1 Blackwattle Bay
Table E - Historical Surface Water Investigation Data

				Soil pH (1:5 soil: water)	pHKCL	TAA (pH 6.5)	pHox	TSA (pH 6.5)	TPA (pH 6.5)	Spos%	Liming Rate
				pH units	pH units	mol H+/tonne	pH units	mol H+/tonne	mol H+/tonne	% w/w	kg CaCO3/tonne
LOR											
ASSMAC (1998) - Fine Grained Soil <1000 tonnes						62		62	62	0.1	
ASSMAC (1998) - Medium Grained Soil <1000 tonnes						36		36	36	0.06	
ASSMAC (1998) - Coarse Grained Soil >1000 tonnes all soil						18		18	18	0.03	
Location	**Depth (m)**	**DESCRIPTION**	**Date**								
EIS (2010a)											
BH501	0.5-0.95	Fill: sand	Jun-10	7.3	9.3	LPQL	7.8	LPQL	LPQL	0.011	<0.75
BH501	1.5-1.95	Fill: sand	Jun-10	7.5	7.6	LPQL	4.1	LPQL	LPQL	0.06	2.8
BH502	0.3-0.8	Fill: sandy gravel	Jun-10	7.4	9.5	LPQL	7.4	LPQL	LPQL	0.032	<0.75
BH506	0.5-1.0	Fill: gravelly sand	Jun-10	11.4	11	LPQL	8.3	LPQL	LPQL	0.022	<0.75
BH506	1.85-2.05	Fill: gravelly sand	Jun-10	9.3	10.2	LPQL	7.6	LPQL	LPQL	0.15	<0.75
BH506	3.0-3.45	Silty sand	Jun-10	10	7.3	LPQL	2.4	383	383	0.89	33
BH506	4.3-4.5	Silty sand	Jun-10	9.3	7.1	LPQL	3.1	17	17	0.1	2.5
BH508	0.3-0.5	Fill: gravelly sand	Jun-10	9.6	9.3	LPQL	6.2	LPQL	LPQL	0.083	3.9
BH508	1.5-1.95	Fill: silty sand	Jun-10	7.7	7.9	LPQL	5.6	LPQL	LPQL	0.048	2.2
BH508	3.0-3.45	Silty sand	Jun-10	8.7	7.1	LPQL	3	72	72	0.23	7.2
BH508	4.5-4.95	Silty sand	Jun-10	7.1	4.5	12	3.5	17	5	0.076	4.5
BH508M	6.1-6.45	Silty clayey sand	Jun-10	8.7	5.1	5	4.5	LPQL	LPQL	0.006	<0.75
BH508	7.0-7.2	Silty sand	Jun-10	8.1	5.3	5	4.3	LPQL	LPQL	LPQL	<0.75
BH508	7.7-7.8	Sandstone	Jun-10	8.4	5.1	7.5	3.9	LPQL	LPQL	LPQL	<0.75
BH510	3.0-3.45	Fill: gravelly sand	Jun-10	9.4	9.1	LPQL	7.4	LPQL	LPQL	0.009	<0.75
BH510	4.5-4.95	Silty sand	Jun-10	7.9	6.7	LPQL	2.4	190	190	0.33	15
BH510M	6.0-6.5	Silty clayey sand	Jun-10	7.8	6.1	LPQL	3.1	40	37	0.14	6.7
BH510M	7.5-7.95	Silty clayey sand	Jun-10	7.3	4.5	12	4.2	5	LPQL	0.014	1.6
BH518	0.5-0.8	Fill: sandy gravel	Jun-10	9.3	9	LPQL	7.8	LPQL	LPQL	0.05	<0.75
EIS (2010b)											
BH601M	0.3-0.5	Fill: Silty sandy clay	Aug-10	-	9.1	LPQL	7.6	LPQL	LPQL	0.047	LPQL
BH601	1.3-1.5	Fill: Silty clayey sand	Aug-10	-	9.1	LPQL	7.8	LPQL	LPQL	0.016	LPQL
BH601	2.8-3.0	Fill: Silty sand	Aug-10	-	7.7	LPQL	4.9	LPQL	LPQL	LPQL	LPQL
BH601	4.2-4.5	Fill: Silty sand	Aug-10	-	8.5	LPQL	2.6	238	238	0.61	21
BH601F	5.8-6.0	Silty clay / Clayey silt	Aug-10	-	8.8	LPQL	3	283	283	1.4	35
BH605	0.3-0.5	Fill: Silty sand	Aug-10	-	9.3	LPQL	7.3	LPQL	LPQL	0.008	LPQL
BH605	2.8-3.0	Silty sand	Aug-10	-	7	LPQL	2.5	288	288	0.59	24
BH606M	0.3-0.5	Fill: Silty clayey sand	Aug-10	-	9.6	LPQL	7.6	LPQL	LPQL	LPQL	LPQL
BH606M	0.8-1.0	Fill: Silty clayey sand	Aug-10	-	9.1	LPQL	7.4	LPQL	LPQL	0.014	LPQL
BH608	0.3-0.5	Fill: Silty sand	Aug-10	-	5.6	LPQL	4	20	17	0.013	0.82
SSAM	-	Sediment	Aug-10	-	8.9	LPQL	7.2	LPQL	LPQL	0.93	4.5
SSBM	-	Sediment	Aug-10	-	8.8	LPQL	4.2	92	92	1.2	24
SSCM	-	Sediment	Aug-10	-	8.7	LPQL	2.9	185	185	0.72	21
JBS&G (2019)											
SB01	0.4-0.5	Fill: Gravelly sand	Oct-19		9.9	<2	7.9	<2	<2	19	<1
SB01	0.4-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB01	0.9-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB02	0.3-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB02	1.0-2.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB02	1.9-2.0	Fill: Gravelly sand	Oct-19		8.9	<2	6.9	<2	<2	21	<1
SB02	3.9-4.0	Fill: Sandy clay	Oct-19		-	-	-	-	-	-	-
SB03	0.4-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB03	2.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB03	3.9-4.0	Fill: Gravelly sand	Oct-19		10	<2	7.7	<2	<2	100	<1
SB03	4.9-5.0	Fill: Gravelly clayey sand	Oct-19		-	-	-	-	-	-	-
SB04	0.5-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB04	1.0-2.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB04	1.9-2.0	Fill: Gravelly sand	Oct-19		8.1	<2	7.4	<2	<2	<10	<1
SB04	2.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB04	3.9-4.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB05	0.0-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB05	0.5-0.6	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB05	1.0-2.0	Fill: Sandy clay	Oct-19		-	-	-	-	-	-	-
SB05	1.9-2.0	Fill: Sandy clay	Oct-19		-	-	-	-	-	-	-
SB05	4.9-5.0	Fill: Sandy clay	Oct-19		8.6	<2	2.8	220	220	310	19
SB05	0.3-0.4	Fill: Gravelly sand	Oct-19								
SB05	0.5-0.6	Fill: Gravelly sand	Oct-19								
SB05	0.6-0.7	Fill: Gravelly sand	Oct-19								
SB06	0.2-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB06	0.9-1.0	Fill: Gravelly sand	Oct-19		7.5	<2	6.5	<2	<2	<10	<1
SB06	1.0-2.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB06	2.9-3.0	Fill: Clayey silt	Oct-19		-	-	-	-	-	-	-
SB07	0.4-0.5	Fill: Gravelly sand	Oct-19		8.7	<2	9.3	<2	<2	19	<1
SB07	0.4-0.7	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB07	1.0-2.0	Fill: Sandy clay	Oct-19		-	-	-	-	-	-	-
SB07	1.9-2.0	Fill: Sandy clay	Oct-19		-	-	-	-	-	-	-
SB08	0.1-0.2	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB08	1.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS02 (Duplicate pair SB08 1.9-3.0)	1.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS02 A (Triplicate pair SB08 1.9-3.0)	1.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB08	3.9-4.0	Sandy silt	Oct-19		8.5	<2	7.5	<2	<2	130	<1
QS01 (Duplicate pair SB08 3.9-4.0)	3.9-4.0	Sandy silt	Oct-19		-	-	-	-	-	-	-
QS01 A (Triplicate pair SB08 3.9-4.0)	3.9-4.0	Sandy silt	Oct-19		-	-	-	-	-	-	-
SB08	4.9-5.0	Silty clay	Oct-19		8.6	<2	2.8	310	310	460	27
SB08	6.9-7.0	Silty clay	Oct-19		9	<2	8	<2	<2	290	<1
SB09	0.2-0.3	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS03 (Duplicate pair SB09 0.2-0.3)	0.2-0.3	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS03 A (Triplicate pair SB09 0.2-0.3)	0.2-0.3	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB09	0.2-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS04 (Duplicate pair SB09 0.2-1.0)	0.2-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
QS04 A (Triplicate pair SB09 0.2-1.0)	0.2-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB09	0.9-1.0	Fill: Gravelly sand	Oct-19		9.2	<2	9.1	<2	<2	25	<1
SB10	0.5-0.6	Fill: Gravelly sand	Oct-19		9.2	<2	8.2	<2	<2	26	<1
SB10	0.5-1.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB10	1.0-2.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
SB10	2.9-3.0	Fill: Gravelly sand	Oct-19		-	-	-	-	-	-	-
BH02_0.4-1.0 (BAG)	0.4-1.0	Fill: Gravelly sand	May-19		8.7	<2	8.3	<2	<2	<0.02	<1
BH02_3.0-4.0 (BAG)	3.0-4.0	Sandy clay	May-19		8.8	<2	3.1	110	110	0.18	12
BH03_2.0-3.0 (BAG)	2.0-3.0	Fill: Gravelly sand	May-19		8.7	<2	2.5	330	330	0.54	35
BH06_1.0-2.0 (BAG)	1.0-2.0	Fill: Gravelly sand	May-19		9.5	<2	8.3	<2	<2	<0.02	<1
BH06_3.0-4.0 (BAG)	3.0-4.0	Gravelly sandy clay	May-19		8.3	<2	2.5	400	400	0.65	39
BH08_3.0-4.0 (BAG)	3.0-4.0	Fill: Gravelly clayey sand	May-19		9.1	<2	8.5	<2	<2	<0.02	<1
MW01_1.0-2.0 (BAG)	1.0-2.0	Fill: Gravelly sand	May-19		8.9	<2	7.3	<2	<2	<0.02	<1
MW01_3.0-4.0 (BAG)	3.0-4.0	Clayey sand	May-19		5	20	1.9	620	640	0.99	100
MW03_1.0-2.0 (BAG)	1.0-2.0	Fill: Gravelly sand	May-19		9.2	<2	7.7	<2	<2	<0.02	<1
MW03_2.0-3.0 (BAG)	2.0-3.0	Fill: Gravelly sand	May-19		8.7	<2	7.1	<2	<2	<0.02	<1
MW04_4.0-5.0	4.0-5.0	Sandy clay	May-19		7.9	<2	2.7	350	350	0.56	30
MW07_7.0-8.0	7.0-8.0	Sandy clay	May-19		7.9	<2	6.2	<2	<2	<0.02	2
MW08_4.5-5.5	4.5-5.5	Gravelly clayey sand	May-19		9.3	<2	7.8	<2	<2	<0.02	<1

Evaluation of Existing Site Characterisation Data

Appendix A - Summary of Historical Site Investigation Results - Blackwattle Bay Precinct

Table E - Historical Soil TCLP Investigation Data

				Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																	Ionic Balance	
				TCLP Arsenic	TCLP Cadmium	TCLP Chromium	TCLP Copper	TCLP Lead	TCLP Mercury	TCLP Nickel	TCLP Zinc	TCLP Acenaphthene	TCLP Acenaphthylene	TCLP Anthracene	TCLP Benz(a)anthracene	TCLP Benzo(a)pyrene	TCLP Benzo(b,j)fluoranthene	TCLP Benzo(g,h,i)perylene	TCLP Benzo(k)fluoranthene	TCLP Chrysene	TCLP Dibenz(a,h)anthracene	TCLP Fluoranthene	TCLP Fluorene	TCLP Indeno(1,2,3-c,d)pyrene	TCLP Naphthalene	TCLP PAHs (Total)	TCLP Phenanthrene	TCLP Pyrene	pH (TCLP - off)	pH (Leachate fluid)
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ph Units	ph Units
LOR/PQL -Envirolab				0.05		0.01		0.03	0.0005	0.02						0.001													0.1	0.1
EPA (2014) TCLP1				5		5		5	0.2	2						0.04														
SAMPLE	**Depth (m)**	**DESCRIPTION**	**Date**																											
EIS (2010a)																														
BH501	0.5-0.95	Fill: sand	Jun-10	-	-	-	-	0.4	-	-						LPQL														
BH502	0.3-0.8	Fill: sandy gravel	Jun-10	-	-	-	-	0.8	-	-						-														
BH504	0.5-0.95	Fill: gravelly sand	Jun-10	-	-	-	-	0.1	-	-						LPQL														
BH504	1.3-1.6	Fill: gravelly sand	Jun-10	-	-	-	-	0.6	-	-						LPQL														
BH504	1.6-1.95	Fill: sandy gravel	Jun-10	0.7	-	-	-	LPQL	LPQL	-						-														
BH507	0.5-0.8	Fill: silty sand	Jun-10	-	-	-	-	-	-	LPQL						-														
BH507	1.6-2.05	Fill: gravelly sand	Jun-10	-	-	-	-	0.2	-	-						-														
BH508	0.3-0.5	Fill: gravelly sand	Jun-10	-	-	-	-	0.4	-	-						-														
BH510	1.0-1.45	Fill: gravelly sand	Jun-10	-	-	-	-	1.2	-	-						LPQL														
BH510	3.0-3.45	Fill: gravelly sand	Jun-10	-	-	-	-	0.6	-	-						LPQL														
BH511	0.3-0.8	Fill: gravelly sand	Jun-10	-	-	-	-	-	-	0.04						-														
BH511	1.5-1.95	Fill: gravelly sand	Jun-10	-	-	-	-	1	-	-						-														
BH511	3.0-3.45	Fill: gravelly sand	Jun-10	-	-	-	-	0.4	-	-						-														
BH512	0.9-1.0	Fill: gravelly sand	Jun-10	-	-	-	-	2.8	-	-						LPQL														
BH512	1.4-1.5	Fill: gravelly sand	Jun-10	-	-	-	-	-	-	-						LPQL														
BH512	2.9-3.0	Fill: sandy clay	Jun-10	-	-	-	-	2.5	-	-						LPQL														
BH517	0.2-0.5	Fill: gravelly sand	Jun-10	-	-	-	-	-	-	0.1						-														
BH519	0.5-0.8	Fill: sandy gravel	Jun-10	-	-	-	-	0.1	-	-						LPQL														
EIS (2010b)																														
BH601	0.3-0.5	Fill: Silty sandy clay	Aug-10	-	-	-	-	0.4	-	-						LPQL														
BH601	0.6-0.95	Fill: Silty clayey sand	Aug-10	-	-	-	-	0.3	-	-						LPQL														
BH602	1.7-1.92	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-						LPQL														
BH603	0.3-0.5	Fill: Sandy gravel	Aug-10	-	-	LPQL	-	-	-	0.04						-														
BH604	0.3-0.5	Fill: Sandy gravel	Aug-10	-	-	-	-	1.6	-	-						-														
BH605	1.3-1.5	Fill: Silty gravel	Aug-10	-	-	-	-	1.3	-	-						-														
BH606	2.2-2.5	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-						LPQL														
BH607	0.5-0.7	Fill: Sandy clay	Aug-10	-	-	-	-	-	-	-						LPQL														
BH610	0.2-0.4	Fill: Gravelly sand	Aug-10	-	-	-	-	-	-	-						LPQL														
BH610	0.7-0.95	Fill: Silty clayey sand	Aug-10	-	-	-	-	-	-	-						LPQL														
EIS (2010c)																														
BH702	0.3-0.5	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-						LPQL														
BH704	0.7-1.0	Fill: Silty sand	Aug-10	-	-	-	-	-	-	-						0.01														
BH704	1.6-1.95	Fill: Silty sand	Aug-10	0.8	-	-	-	-	-	-						-														
BH708	1.6-1.95	Fill: Silty sand	Aug-10	-	-	-	-	1.1	-	-						-														
BH709	0.9-1.15	Fill: Silty sand	Aug-10	-	-	-	-	0.3	-	-						-														
BH716	1.7-1.95	Fill: Silty sand	Aug-10	-	-	-	-	0.8	-	-						LPQL														
BH714	0.8-1.0	Fill: Clayey sand	Aug-10	-	-	-	-	-	-	-						LPQL														
BH710	0.3-0.5	Fill: Gravelly sand	Aug-10	-	-	-	-	-	-	0.04						LPQL														
PB (2009)																														
PBBH01	0.0-0.3	-	17/12/2008	-	-	-	-	-	-	-						<1														
PBHA01	0.0-0.1	-	12/01/2009	-	-	-	-	-	-	-						<1														
EIS (2017a)																														
BH20	0.0-0.05	Silty clay	Feb-17	-	-	-	-	-	-	-						<0.001														
BH21	0.0-0.1	Silty clay	Feb-17	-	-	-	-	0.3	-	-						<0.001														
BH22	0.0-0.05	Silty clay	Feb-17	-	-	-	-	1.3	<0.0005	-						<0.001														
BH24	0.0-0.5	Silty clay	Feb-17	-	-	-	-	<0.03	-	-						<0.001														
BH26	0.8-1.25	Silty sandy clay	Feb-17	-	-	-	-	0.59	-	-						<0.001														
BH27	0.0-0.5	Silty clay	Feb-17	-	-	-	-	0.41	-	-						<0.001														
BH28	0.0-0.5	Fill: Gravel	Feb-17	-	-	-	-	0.1	-	-						-														
BH8	1.25-1.75	Silty clay	May-17	-	-	-	-	1.5	-	-						<0.001														
BH10	1.9-2.35	Fill: Silty sand	Jun-17	-	-	-	-	0.06	-	-						<0.001														
BH13	0.3-0.8	Silty clay	May-17	-	-	-	-	0.03	-	-						<0.001														
BH14	0.55-1.05	Fill: Sitly clay	Jun-17	-	-	-	-	0.66	-	-						<0.001														
BH14	4.0-4.35	Silty clay	Jun-17	-	-	-	-	<0.03	-	-						<0.001														
JBS&G (2019)																														
SB05	0.3-0.4	Fill: Gravelly sand	Feb-19		<0.01	<0.005	<0.05	<0.05	<0.01	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
SB05	0.5-0.6	Fill: Gravelly sand	Feb-19		<0.01	<0.005	<0.05	<0.05	<0.01	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
SB05	0.6-0.7	Fill: Gravelly sand	Feb-19		<0.01	<0.005	<0.05	<0.05	<0.01	<0.001	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
JBS&G (2019)																														
BH07	1.0-1.1	Fill: Gravelly sand	May-19					-		-						<0.001													5.1	5
BH09	2.0-2.1	Fill: Gravelly clayey sand	May-19					0.76		-						-													5.3	5
MW04	1.0-1.1	Fill: Gravelly sand	May-19					-		-						<0.001													5.4	5
MW04	3.0-3.1	Fill: Gravelly sand	May-19					2.1		-						-													5.6	5
MW05	2.0-2.1	Fill: Gravelly sand	May-19					<0.01		0.09						-													6.8	5

Table G: Soil Vapour Analytical Results

				Organic Alcohols	Chlorinated Alkanes																Chlorinated Alkenes									
				Isopropyl alcohol	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	1,1-dichloropropene	2-chlorotoluene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride
				mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
EQL				1.67	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
NEPM 2013 HIL Commercial/Industrial D Soil Vapour						230															8					0.3			0.08	0.1
NEPM 2013 HIL Recreational C Soil Vapour						1200															40					2			0.4	0.5
NEPM 2013 Soil Vapour HSL C - Sand 0 to <1m																														
NEPM 2013 Soil Vapour HSL D - Sand 0 to <1m																														
Field_ID	**LocCode**	**WellCode**	**Sampled_Date-Time**																												
JBS&G (2015)																														
FM2A BACK	FM2A BACK	FM2A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM2A FRONT	FM2A FRONT	FM2A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM3A BACK	FM3A BACK	FM3A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM3A FRONT	FM3A FRONT	FM3A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM4A BACK	FM4A BACK	FM4A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM4A FRONT	FM4A FRONT	FM4A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM5A BACK	FM5A BACK	FM5A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM5A FRONT	FM5A FRONT	FM5A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	0.2667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM6A BACK	FM6A BACK	FM6A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
FM6A FRONT	FM6A FRONT	FM6A	2/07/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
HHSV2 BACK	HHSV2 BACK	HHSV2	11/09/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
HHSV2 FRONT	HHSV2 FRONT	HHSV2	11/09/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
QCSV1 BACK	HHSV2 BACK	HHSV2	11/09/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
QCSV1 FRONT	HHSV2 FRONT	HHSV2	11/09/2015	<1.667	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
JBS&G (2018)																														
SS01	-	-	27/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS02	-	-	27/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS03	-	-	27/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS04	-	-	27/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS05	-	-	27/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS06	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS07	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS08	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS09	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS10	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS11	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS12	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS13	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS14	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS15	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS16	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
QC20181025_MW0	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS17	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS18	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS19	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
SS20	-	-	25/10/2018	<1.7	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	-	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

Table G: Soil Vapour Analytical Results

BTEX						Polycyclic Aromatic Hydrocarbons	Monocyclic Aromatic Hydrocarbons									Miscellaneous Hydrocarbons							Chlorinated Benzenes					
Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Naphthalene	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	1,2-dibromoethane	Bromoform	2-Propanone (Acetone)	Cyclohexane	Dibromomethane	Hexachlorobutadiene	Surrogate Bromochloromethane	Chlorobenzene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
0.08	0.08	0.08			0.25	0.83	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.83	0.08	0.08	0.08			0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
360	NL	NL			NL	410																						
4	4800	1300			840	3																						
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	<0.8333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08333	<0.08333	<0.08333	-	-	<0.25	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.8333	<0.08333	<0.08333	<0.08333	-	-	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333	<0.08333
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	0.1334	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	0.1	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	0.1334	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	0.1667	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
<0.08	<0.08	<0.08	-	-	<0.2501	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.8335	<0.08	<0.08	-	-	-	<0.08	<0.08		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

Table H: Hazardous Ground Gas Results

Well No.	Date of Monitoring	Atmospheric Pressure (mb)	Flow Rate (L/h)	CH_4 (%)	CH_4 GSV (L/hr)	CO_2 (%)	CO_2 GSV (L/hr)	O_2 (%)
JBS&G (2015)								
HHMW02	24/09/2015	1025	0.1	0.0	0.000	3.7	0.004	17.3
FM2A	24/09/2015	1025	0.1	0.0	0.000	20.5	0.021	0.0
FM6	24/09/2015	1025	0.1	0.0	0.000	6.3	0.006	14.6
JBS&G (2018)								
SBMW02	2/11/2018	1011	0.100	0.000	0.000	0.000	0.000	20.9
SBMW03	2/11/2018	1013	0.100	0.000	0.000	0.000	0.000	21.1
PBMW2A	2/11/2018	1014	0.100	0.000	0.000	0.000	0.000	21.2
SBMW04	2/11/2018	1013	0.100	0.000	0.000	0.000	0.000	21.5
PBMW3A	2/11/2018	1013	0.300	0.000	0.000	0.000	0.000	21.5
PBMW4A	2/11/2018	1014	0.700	0.000	0.000	0.000	0.000	21.6
SBMW05	2/11/2018	1013	0.000	0.000	0.000	0.000	0.000	21.7
MW01	4/12/2018	1013	1.500	0.000	0.000	0.900	0.014	19.2
SBMW05	4/12/2018	1014	2.500	0.000	0.000	0.700	0.018	20.3
SBMW06	4/12/2018	1012	1.300	0.000	0.000	2.900	0.038	19.2
SBMW03	4/12/2018	1013	0.100	0.000	0.000	0.200	0.000	20.3
PBMW3A	4/12/2018	1013	0.400	0.000	0.000	0.000	0.000	18.1
PBMW4A	4/12/2018	1013	0.400	1.300	0.005	11.500	0.046	17.7
SBMW01	11/02/2019	998	3.300	0.000	0.000	0.400	0.013	20.6
SBMW02	11/02/2019	999	3.100	0.000	0.000	0.000	0.000	20.6
SBMW03	11/02/2019	1001	3.000	0.000	0.000	0.100	0.003	20.2
SBMW04	11/02/2019	1001	0.300	9.300	0.028	0.800	0.002	17.1
PBMW3A	11/02/2019	998	3.100	0.000	0.000	0.000	0.000	21.6
PBMW4A	11/02/2019	1002	1.600	3.100	0.050	7.700	0.123	2.2
JBS&G (2019)								
MW01	28/05/2019	1008	0.1	0.0	0.00	2.5	0.003	15.9
MW03	28/05/2019	1008	0.1	0.0	0.00	1.7	0.002	18.1
BH08	28/05/2019	1008	1.5	0.4	0.01	0.2	0.003	20.2

Table H: Hazardous Ground Gas Results

H_2S (ppm)	CO (ppm)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
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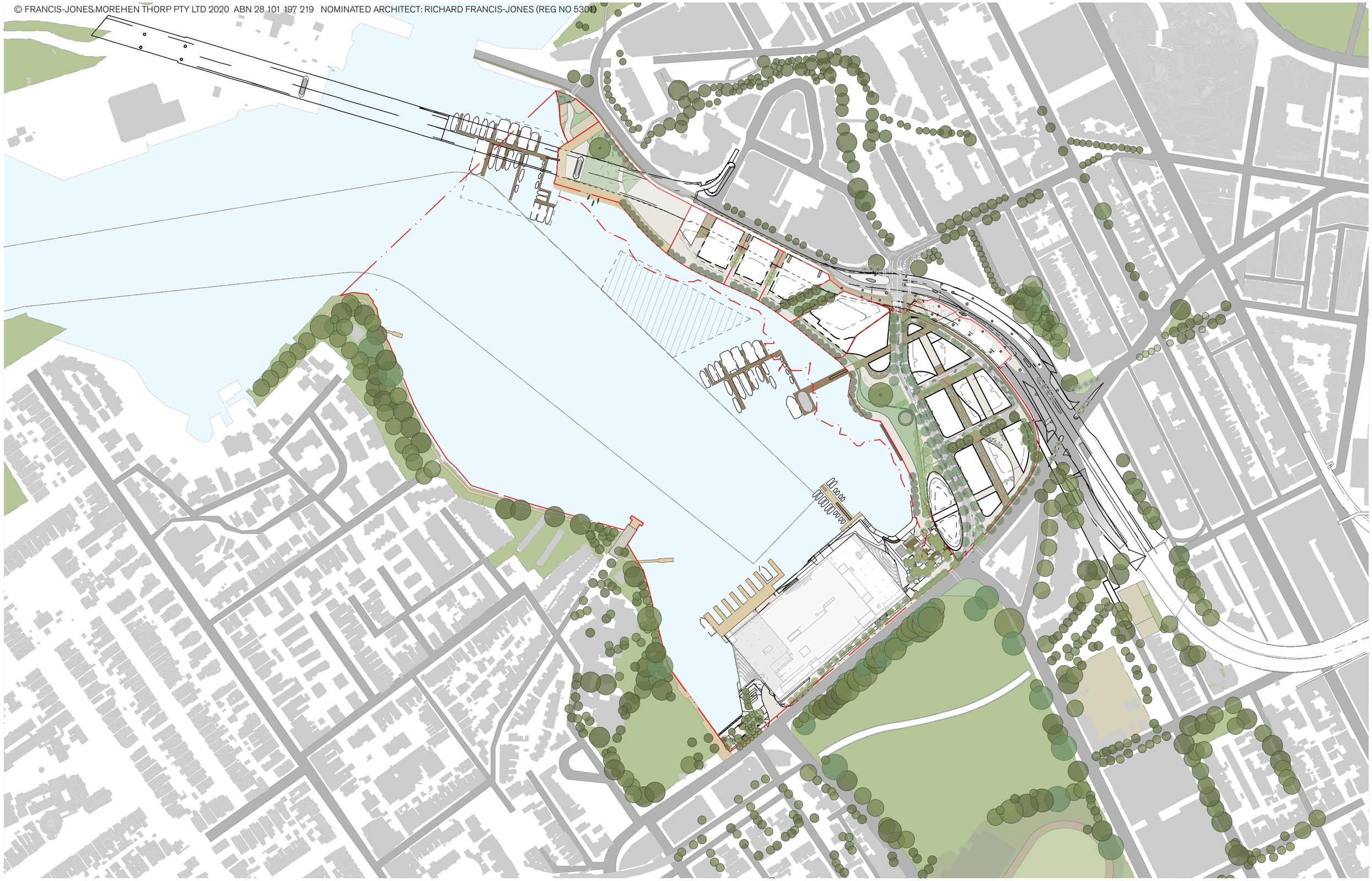
Appendix B – Master Plans



fjmt

Final Precinct Plan | 1:4000

iNSW - Blackwattle Bay Masterplan

1:4000 @ A3

For Information

13/11/20

SK-81

Appendix C – EPA Records

Background

A strategy to systematically prioritise, assess and respond to notifications under Section 60 of the ***Contaminated Land Management Act 1997*** (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under ***Government Information (Public Access) Act 2009*** .

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

After receiving a report, the first step is to confirm that the report does not relate to a pollution incident. The Protection of the Environment Operations Act 1997 (POEO Act) deals with pollution incidents, waste stockpiling or dumping. The EPA also has an incident management process to manage significant incidents (https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management).

In many cases, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any significant risks for the community or environment. Such sites may still need to be cleaned up, but this can be done in conjunction with any subsequent building or redevelopment of the land. These sites do not require intervention under the CLM Act, and are dealt with through the planning and development consent process. In these cases, the EPA informs the local council or other planning authority, so that the information can be recorded and considered at the appropriate time (https://www.epa.nsw.gov.au/your-environment/contaminated-land/managing-contaminated-land/role-of-planning-authorities).

Where indications are that the contamination could cause actual harm to the environment or an unacceptable offsite impact (i.e. the land is 'significantly contaminated'), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site. If the reported contamination could present an immediate or long-term threat to human health NSW Health will be consulted. SafeWork NSW and Water NSW can also be consulted if there appear to be occupational health and safety risks or an impact on groundwater quality.

As such, the sites notified to the EPA and presented in the list of contaminated sites notified to the EPA are at various stages of the assessment and remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The list provides an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the person who notified the site.

The following questions and answers may assist those interested in this issue.

Frequently asked questions

Why does my land appear on the list of notified sites?

Your land may appear on the list because:

• the site owner and/or the polluter has notified the EPA under section 60 of the CLM Act
• the EPA has been notified via other means and is satisfied that the site is or was contaminated.

If a site is on the list, it does not necessarily mean the contamination is significant enough to regulate under the CLM Act.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that EPA is aware of. If a site is not on the list, it does not necessarily mean the site is not contaminated.

The EPA relies on responsible parties and the public to notify contaminated sites.

How are notified contaminated sites managed by the EPA?

There are different ways the EPA can manage notified contaminated sites. Options include:

• regulation under the CLM Act, POEO Act, or both
• notifying the relevant planning authority for management under the planning and development process
• managing the site under the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.

There are specific cases where contamination is managed under a tailored program operated by another agency (for example, the Resources & Geoscience's Legacy Mines Program).

What should I do if I am a potential buyer of a site that appears on the list?

You should seek advice from the seller to understand the contamination issue. You may need to seek independent contamination or legal advice.

The information provided in the list is indicative only and a starting point for your own assessment. Land contamination from past site uses is common, mainly in urban environments. If the site is properly remediated or managed, it may not affect the intended future use of the site.

Who can I contact if I need more information about a site?

You can contact the Environment Line at any time by calling 131 555 or by emailing info@environment.nsw.gov.au.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

Site Status	Explanation
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or *Protection of the Environment Operations Act 1997* .
Under Preliminary Investigation Order	The EPA has issued a Preliminary Investigation Order under s10 of the *Contaminated Land Management Act 1997* , to obtain additional information needed to complete the assessment.

Regulation under CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the *Contaminated Land Management Act 1997* is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* . A regulatory approach is being finalised.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under POEO Act	Contamination is currently regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA as the appropriate regulatory authority reasonably suspects that a pollution incident is occurring/ has occurred and that it requires regulation under the POEO Act. The EPA may use environment protection notices, such as clean up notices, to require clean up action to be taken. Such regulatory notices are available on the POEO public register.
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act.

Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the *Environmental Planning and Assessment Act 1979* (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
GLEBE	The Hill and Jubilee Embankment	12 Maxwell ROAD	Other Industry	Regulation under CLM Act not required	-33.87573032	151.1776027
PYRMONT	Former Council Works Depot (Fig and Wattle Depot)	14-26 Wattle STREET	Other Industry	Regulation under CLM Act not required	-33.8752655	151.1942645

Search results

Your search for: **General Search** with the following criteria

Suburb - Pyrmont

returned 8 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
3085775321	Environmental Investigations Australia Pty Ltd	Suite 601, 55 Miller Street, PYRMONT, NSW 2009	Penalty Notice	Withdrawn	
3085775606	Environmental Investigations Australia Pty Ltd	Suite 601, 55 Miller Street, PYRMONT, NSW 2009	Penalty Notice	Issued	02 Jan 2015
1253	HYMIX AUSTRALIA PTY LIMITED	41-45 BANK STREET, PYRMONT, NSW 2009	POEO licence	No longer in force	25 May 2000
1009061	HYMIX AUSTRALIA PTY LIMITED	41-45 BANK STREET, PYRMONT, NSW 2009	s.58 Licence Variation	Issued	21 Jun 2001
11718	LENDLEASE BUILDING PTY LIMITED	BOWMAN STREET, PYRMONT, NSW 2009	POEO licence	Surrendered	23 Aug 2002
1033852	LENDLEASE BUILDING PTY LIMITED	BOWMAN STREET, PYRMONT, NSW 2009	s.80 Surrender of a Licence	Issued	14 Jan 2004
5949	SYDNEY HARBOUR CASINO PROPERTIES PTY LIMITED	80 PYRMONT STREET, PYRMONT, NSW 2009	POEO licence	Surrendered	13 Jun 2000
1013264	SYDNEY HARBOUR CASINO PROPERTIES PTY LIMITED	80 PYRMONT STREET, PYRMONT, NSW 2009	s.80 Surrender of a Licence	Issued	28 Nov 2001

02 October 2020

For

business and industry

For local government

Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

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