BASELINE ENVIRONMENTAL SITE ASSESSMENT

Lot 1 DP 1195449, Cnr Egret Street and Cormorant Road, Kooragang Island

Prepared for Port of Newcastle Operations

Prepared by RCA Australia

RCA ref 10556-401/1

June 2014

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DOCUMENT STATUS						
Rev No	**Comment**	**Author**	**Reviewer**	**Approved for Issue (Project Manager)**		
				Name	**Signature**	**Date**
/0	Draft	J Gilbert	F Brooker	F Brooker		28.05.14
/1	Final	J Gilbert	F Brooker	F Brooker		30.06.14

DOCUMENT DISTRIBUTION				
Rev No	**Copies**	**Format**	**Issued to**	**Date**
/0	1	Electronic (email)	Port of Newcastle Operations – Lee Ann McMurray – Lee-Ann.M@newportcorp.com.au	28.05.14
/0	1	Electronic (email)	Sovechles Development – Mitchell Sovechles – mitch_sovechles@bigpond.com	28.05.14
/0	1	Electronic report	RCA – job archive	28.05.14
/1	1	Electronic (email)	Port of Newcastle Operations – Lee Ann McMurray – Lee-Ann.McMurray@portofnewcastle.com.au	30.06.14
/1	1	Electronic (cd)	Port of Newcastle Operations – Lee Ann McMurray	30.06.14
/1	1	Bound report	Port of Newcastle Operations – Lee Ann McMurray	30.06.14
/1	1	Electronic (email)	Sovechles Development – Mitchell Sovechles – mitch_sovechles@bigpond.com	30.06.14
/1	1	Electronic	RCA archive	30.06.14
/1	1	Bound report	RCA archive	30.06.14

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RCA ref 10556-401/1

30 June 2014

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BASELINE ENVIRONMENTAL SITE ASSESSMENT
LOT 1 DP 1195449, CNR EGRET STREET AND CORMORANT ROAD
KOORAGANG ISLAND

1 INTRODUCTION

This report presents the findings of an environmental site assessment undertaken on a site situated at the corner of Cormorant Road and Egret Street, Kooragang Island.

This assessment was undertaken to characterise any contamination at the site prior to the commencement of a lease between the owner of the site, Port of Newcastle Operations, and Sovechles Development. It is understood that the site is to be developed to include the construction of a service station and convenience store and that the contamination status as determined by this assessment will form the Baseline Condition Report as defined by the lease for assigning liabilities for any future contamination. Therefore this assessment has also included targeted sampling for areas of the site which will in the future be considered potential point sources of contamination.

This assessment is being undertaken on behalf of the Port of Newcastle Operations and Sovechles Development.

2 SITE DESCRIPTION AND LOCATION

The site is identified as Lot 1 DP 1195449 and is situated on the corner of Cormorant Road and Egret Street, Kooragang Island.

Additional site details are shown in **Table 1**.

Table 1 *Site Details*

Current zoning State Environmental Planning Policy (Three Ports) 2013	Special Activities
Current use	Vacant unused
Proposed use	Service Station
Size of site	Approximately 1.8ha
Nearest sensitive site (human health)	Mayfield East Public School, approximately 1.5km to the southwest
Nearest environmental feature	Hunter River approximately 200m to the south (and 4km to the north and east). Hunter Wetlands National Park (including RAMSAR[1] designated area) approximately 1.5km to the north and to the east.
Neighbouring Use	Industrial/commercial uses. Coal loading facilities across Cormorant Road.

Drawing 1, **Appendix A** shows the locality and the layout of the site, including the current Lot boundaries.

The site consists of flat vacant land covered by grass and sparse vegetation. An access road for the Boral Facility is located in the western portion of the site. There are no preferential water pathways observed at the site with surface water draining towards Cormorant Road, south of the site.

Two (2) existing groundwater bores were observed during the site assessment - one (1) intact bore located towards the north-west of the site and one (1) destroyed bore towards the south-east of the site.

A pipeline was being installed by Hunter Water in the south-west corner of the site, limiting access to this area.

The surrounding area is primarily used for industrial purposes with Boral to the north, Sims Metal to the east, a coal storage area to the west and coal loading to the south.

Site photographs are shown in **Appendix B**.

3 SITE HISTORY AND ASSESSMENT OF POTENTIAL CONTAMINATION

Development at the site is controlled by State Environmental Planning Policy (Three Ports) 2013, the purpose of which was:

- To provide a consistent planning regime for the development and delivery of infrastructure on land in Port Botany, Port Kembla and the Port of Newcastle.
- To allow the efficient development, re-development and protection of land at Port Botany, Port Kembla and the Port of Newcastle for port purposes.

[1] RASMAR: is an international convention on wetlands of international importance.

- To identify certain development within the Lease Area as exempt development or complying development.
- To specify matters to be considered in determining whether to grant consent to development adjacent to development for port purposes.
- To provide for development at Port Botany that does not, by its nature or scale, constitute an actual or potential obstruction or hazard to aircraft.
- To identify certain development as State significant development or State significant infrastructure.
- To ensure that land around the Lease Area is maintained for port-related and industrial uses, including heavy industry on land around Port Kembla.
- The site is zoned as 'Special Activities', the objective of which is defined as:
- To provide for special land uses that are not provided for in other zones.
- To provide for sites with special natural characteristics that are not provided for in other zones.
- To facilitate development that is in keeping with the special characteristics of the site or its existing or intended special use, and that minimises any adverse impacts on surrounding land.
- To maximise the use of waterfront areas to accommodate port facilities and industrial, maritime industrial and bulk storage premises that benefit from being located close to port facilities.
- To enable the efficient movement and operation of commercial shipping, and to provide for the efficient handling and distribution of freight from port areas through the provision of transport infrastructure.
- To provide for port related facilities and development that support the operations of Port Botany, Port Kembla and the Port of Newcastle.
- To facilitate development that by its nature or scale requires separation from residential areas and other sensitive land uses.
- To encourage employment opportunities.

The Section 149 certificates for both Lots were obtained and reviewed and detail the restrictions applicable for development on the site. Council do not identify known contamination issues at the site, however Council has adopted a policy of restricting development or imposing conditions on properties affected by Land Contamination in accordance with Section 5.02 Land Contamination of Newcastle Development Control Plan 2012. The Section 149 certificates are attached in **Appendix C**.

Historical aerial photographs were reviewed to provide an understanding of the past site use:

- 1954 - The site has not yet been delineated and is within an area which appears to be unused or agricultural land, close to (or perhaps partially within) an unnamed channel flowing from north to south. Cormorant Road and Egret Street are not yet formed, although there does appear to be an informal roadways which may have formed the basis of the roads.

Limited development had been undertaken on Kooragang Island at the time and appears restricted to isolated structures which may be farmhouses. The northern shoreline of the Hunter River looks primarily undisturbed. There is industrial/commercial development evident on the other side of the Hunter River at Mayfield, which is within the vicinity of the BHP steel processing facility. The southern River bank looks to have undergone some modification, however Platts Channel is still present.

- 1966 - The site has not yet been delineated, however there appears to have been disturbance at the site. The resolution and absence of colour on the photographs makes it difficult to determine whether the disturbance is the placement of fill or removal of vegetation, however due to the blocking of the north-south running channel, RCA Australia (RCA) considers that it is likely fill.

  Substantial development has been undertaken on the northern shoreline of the Hunter River. Development has commenced on the far eastern portion of Kooragang Island and Cormorant Road has been constructed. The southern shoreline of the Hunter River has been formalised, Platts Channel has been filled and the BHP facility has been constructed.

- 1975 - The site has been delineated and is vacant and unused. The surface appears to be either grass or sand; it is difficult to determine which with the provided photograph. Cormorant Road and Egret Street are both constructed, as is the Blue Circle cement site and associated driveway. There are some buildings on the site now occupied by Sims Metals.

  Additional development has occurred on the northern shoreline of the Hunter River, however the portion in front of the site looks unchanged from 1966. Additional development has occurred on Kooragang Island, especially to the far east where the Orica plant is now situated. Stockton Bridge has been constructed and the north of the site has completely filled in the north-south running channel. No changes to the southern shoreline of the Hunter River are apparent.

- 1983 - The site does not appear to have been altered from the 1975 photograph. The surface appears to be grass, patchy in some areas. There are a number of trees/shrubs situated on the site in clumps. The Blue Circle and Sims Metals sites appear to have furthered developed and development on the Port Waratah Coal's facility is also apparent to the north of the site. The northern shoreline of the Hunter River has undergone some further changes, however not in front of the site.

  No substantial changes are apparent on the southern shore of the Hunter River. Development in the eastern portion of Kooragang Island has increased.

- 1993 - The site is vacant and unused, however there are a number of trees/shrubs situated on the site in clumps. The other neighbouring sites and the northern shoreline near the site do not appear to be changed from the 1983 photograph.

  No substantial changes are apparent on the southern shore of the Hunter River or on Kooragang Island from the 1983 photograph.

- 2004 - The site appears to be unchanged from that in 1993. Additional development has been undertaken in the immediate vicinity of the site and the northern shoreline of the Hunter River has undergone additional development to construct coal loading facilities.

The demolition of the BHP facility has been substantially completed, however there are still signs of remnant infrastructure.

- 2007 - The site appears to be unchanged from that is 2004. Additional development has been undertaken in the immediate vicinity of the site.

  No significant changes on the southern side of the Hunter River are apparent.

- 2010 - The site appears to be unchanged from that is 2004.

  Significant development has occurred to the west of the site with the construction of Port Waratah Coal Services' facility and additional construction on the northern shoreline of the Hunter River.

- 2013 - The site and immediate surrounds look unchanged from 2010.

  Significant development has occurred on the northern shoreline of the Hunter River, including the construction of a docking and coal loading facility in front of the site.

Reviewed photographs are attached in **Appendix D**.

RCA undertook a search for registered groundwater bores on the Natural Resource Atlas website (http://www.nratlas.nsw.gov.au). Nine (9) bores were identified within 500m radius of the site; seven (7) included information related to the depth of groundwater and geological strata and indicate that fill (including slag and dredged sand) is present in the area overtop alluvial clay and sand. Five (5) groundwater bores are identified as monitoring bores, one (1) groundwater bore is identified for industrial use and one (1) groundwater bore is identified for irrigation purposes. The Groundwater level varied from 0.6m below ground level (bgl) to 2m (bgl). There are two (2) bores identified to be on the site and were located during RCA fieldwork. The map and details of the groundwater bores are attached in **Appendix E**.

A search of the NSW EPA's public register of environmental protection licences indicated there are no environmental protection licences at the site as of 26 May 2014.

A search of the NSW EPA's register of notified contaminated sites identified four (4) notified sites within close proximity to the site as of 9 April 2014.

Table 2 *Notified Contaminated Sites Identified*

Site description and address	Activity that caused contamination	Status of EPA assessment	EPA site management class
Port of Newcastle Operations, berths 2 and 3 Heron Road	Metal Industry	Completed	Initial assessment completed. The contamination of this site is to be regulated by the EPA.
Orica 15 Greenleaf Road	Chemical Industry	Completed	The contamination of this site is regulated by the EPA under the Contaminated Land Management Act 1997
Kooragang Island Waste Facility Lot 121 DP874949	Metal Industry	Completed	The contamination of this site is or was regulated under the Protection of the Environment Operations (POEO) Act 1997. There is no POEO licence on the EPA register for this site
Transpacific Technical Services Raven Street	Unclassified	In progress	The contamination of this site is being assessed by the EPA. Sites which have yet to be determined as significant enough to warrant regulation may result in no further regulation under the Contaminated Land Management Act 1997.

The locality of these sites is shown on **Drawing 1**, **Appendix A**.

While no specific information is available in regards to the types of contamination, RCA is aware of anecdotal evidence of metals, particularly arsenic, and hydrocarbons in the fill and groundwater on Kooragang Island.

The proposed development includes the construction of a building for sales and a convenience store, a canopy for petroleum fuel dispensing and the installation of three (3) 110kL dual fuel underground petroleum storage tanks (UPST). The underground petroleum storage system (UPSS) will be designed, constructed, installed and operated in accordance with the requirements of the UPSS Regulation (Ref [1]) including the installation of tank pit and groundwater monitoring bores, inspection of groundwater on a six (6) monthly frequency and operation of the site under an environmental protection policy (EPP). The layout of the proposed development is shown on **Drawing 2**, **Appendix A**.

Based on the review of the above presented information, RCA considers that the site has never been formally used as part of any operations other than what may have been agricultural use prior to 1966 and therefore contamination at the site is restricted to that derived from neighbouring uses, filling on the site, and potential future contamination. Therefore this assessment was based on the following potential contamination, exposure pathways, and receptors:

- Historical filling of the site during the 'reclamation' process undertaken in the area:
    - This may have resulted in contaminated soil to the depth of filling (if present on the site) and contaminated groundwater due to leaching through the contaminated fill. Contaminants of concern are considered to be metals and hydrocarbons. There is a lesser potential for uncontrolled filling at the site to have occurred during its vacancy and the potential contaminants of concern include metals, hydrocarbons and asbestos.
    - Risks associated with this material are considered to be limited to direct exposure by inhalation of dust, ingestion or dermal contact. The presence of volatile compounds may give rise to a risk of inhalation of vapours, however RCA does not consider that a significant potential at the site.
    - Off site impacts are likely as historical filling occurred throughout the area.
- Storage of, and dispensing from, petroleum in underground facilities:
    - This may result in subsurface soil contamination from the tank, lines or bowsers and may cause groundwater contamination directly or due to infiltration through contaminated soils. It is noted that the site will be almost entirely concreted, but that stormwater management at the site will endeavour to promote infiltration in certain areas of the site.

      Additional contamination may arise due to poor filling procedures by motorist and tanker deliveries, however stormwater would be at most risk. It is understood that all potentially affected stormwater will be treated to ensure quality is suitable prior to discharge.
    - The risks associated with this material are considered to be from inhalation of vapours, especially in the case of vapours beneath buildings, underground structures and service pits. Due to the concreting of the site, inhalation of dust,

as well as ingestion and dermal contact are only considered potential pathways during excavation or groundwater extraction works.

- Off site impacts are possible due to the proximity of the UPST to the northern boundary of the service station site. It is noted that advance warning of potential contamination will be provided with compliance loss monitoring as required under the UPSS Regulations (Ref [1]).

The site is within an area of high probability for the presence of acid sulfate soils within one metre of the surface as identified by the Williamtown Acid Sulfate Soil Risk Map Edition 2 1997. This may lead to acid leachate and corrosion issues during and post development and an increase in some metal concentrations, arsenic in particular. The acid sulfate potential at the site has been assessed by RCA in a geological investigation (Ref [2]).

4 FIELDWORK

An environmental engineer experienced in the handling of potentially contaminated soil and groundwater undertook fieldwork on 2, 3 April 2014 and 8, 14 May 2014. The scope of work included the following:

- Location of services.
- The collection of 138 soil samples from 32 locations on the site:
  - Samples were collected from 0.3m and 1.0m below the existing ground surface and then every meter thereafter until groundwater was reached using an excavator. Additional samples were collected if a change in lithology was observed.
- Re-instatement of all excavations.
- The installation of three (3) groundwater monitoring wells:
  - Groundwater monitoring wells were installed by a licensed driller under NSW Office of Water licenses 20BL173752 and 20BL173753.
  - Wells were developed to remove all fines disturbed (and water used) during the drilling.
- Logging of test pits and boreholes including description of samples for texture, colour, odour, moisture content. Logs are attached in **Appendix F** and test pit photographs are shown in **Appendix B**.
- A total of seventy eight (78) soil samples were analysed; all shallow soil samples and approximately half of the deeper soil samples were selected for analysis. Samples were selected based on visual or olfactory evidence of contamination.
- All selected soil samples were laboratory analysed for total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH) and metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc, mercury).

- Three (3) composites soil samples were be generated from four (4) shallow samples and analysed for pesticides (OCP, OPP), and polychlorinated biphenyls (PCB). Composite samples were selected so as to obtain an even distribution of the sample locations across the site and to effectively characterise the contaminant profile of the site.
- Eight (8) duplicate soil samples and two (2) field blanks were analysed for TRH, BTEX, PAH and metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc, mercury).
- One (1) soil trip spike and one (1) soil trip blank were analysed for TRH (C6-C9) and BTEX.

An environmental engineer returned to the site on 14 May 2014 to collect groundwater samples:

- Samples were collected from the one (1) intact existing bore and the three (3) newly installed bores.
- Bores were dipped to determine depth of groundwater and presence of any phase separated hydrocarbons. Bores were then purged of at least one bore volume and until pH and EC readings stabilised.
- Samples were collected by designated hand bailer and were analysed for TRH, BTEX, PAH and metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc, mercury).
- One (1) water trip spike and one (1) water trip blank were analysed for TRH (C6-C9) and BTEX.

Field sheets are attached in **Appendix G**.

The geology and hydrogeology at the site generally consisted of:

- FILL: Sand, light brown, fine to medium grain size, moist, with shell fragments, at depths generally ranging from 0m to 2.5m bgl.
- FILL: Sand, grey, fine to medium grain size, saturated with significant shell fragments, with depths generally ranging from 2.5m to 3m bgl.
- Towards the southern section of the site layers of dark grey alluvial clay were observed generally at depths between 2.0 to 2.5m bgl.
- Groundwater was reached between depths of approximately 2.5m and 3m bgl on 2 and 3 April 2014 and between 1.9m and 2.3m bgl on 14 May 2014. The variance in groundwater levels between sampling events is attributed to the tidal influence of the groundwater and to a lesser extent the observed increased rainfall between sampling events.

There was no visual or olfactory evidence of contamination at the site with the exception of an observed sulphur odour at one test pit and one groundwater bore (TP24 and MW1) located in the north-east corner of the site. No material that was considered potential asbestos containing was observed during the works, nor was any deleterious material such that asbestos containing materials would be considered potentially present observed.

There are no preferential water pathways located on site and surface water is expected to flow towards the south of the site, discharging at Cormorant Road.

5 QUALITY ASSURANCE/QUALITY CONTROL

The collection of all soil and groundwater samples was undertaken in compliance with RCA methodology. Disturbed soil samples were collected from the excavator bucket. Groundwater samples were collected using a hand bailer following the removal of one bore volume and additional volume until pH and EC readings were within 0.1 and 10% respectively, to ensure a representative sample is collected.

These soil collection methods were chosen for the site due to the requirement for full inspection of the site's strata and the depth required at sample locations. The groundwater sample collection methods were chosen for the site due to shallow groundwater and ease of the collection method.

No decontamination of the excavator bucket was undertaken, however the collection of the sample from within the bulk of the excavated material (rather than against the side of the bucket) is considered to prevent potential cross contamination.

Decontamination of the hand bailer consisted of rinsing the bailer with Decon 90 and potable water between samples.

All samples were preserved as recommended by the analytical laboratory and stored in the field in an Esky on ice. Samples were sent to the laboratory within 24 hours of sampling with the exception of samples collected on the 2 April 2014 which were stored in the RCA refrigerator until 4 April 2014 so as to be sent with all samples collected over the two (2) day sampling period.

All samples were sent under Chain of Custody (COC) documentation detailing the sample identification, required analysis, the name of the sampler and date released from custody. The laboratory acknowledged the receipt of samples by signature and date and returned the COC with a sample receipt notice indicating the condition of the samples received upon receipt.

A total of eight (8) soil duplicate samples were submitted blind to the laboratory for analysis with the batch of samples, including four (4) interlaboratory and four (4) intralaboratory duplicates. This represents a percentage of 10%, in accordance with the frequency recommended by the Australian Standard 4482.1-2005 and RCA protocol.

Two (2) field blanks, one (1) soil trip blank, one (1) water trip blank, one (1) soil trip spike and one (1) water trip spike were submitted to the laboratory for analysis. This submission is in accordance with the frequency recommended by the Australian Standard 4482.1-2005 and RCA protocol.

RCA omitted the equipment wash due to the low potential for cross contamination from the sampling equipment.

External quality assurance results are summarised in **Appendix H**.

Results indicate a total of one (1) soil analysis which reports a RPD in excess of the acceptance criteria:

- TP21a/QA8 Reported an elevated RPD for zinc. This sample is described as fill material and it is therefore considered that sample heterogeneity is the likely cause of the high RPD. There is some uncertainty associated with this sample. However, the sample reported the highest concentration and therefore the uncertainty is considered to be conservative.

Results show all field and trip blanks with non-detectable concentrations of analytes with the exception of:

- QB2 Reported a detectable zinc concentration of 5.1, above the PQL of 5. RCA considers the potential for cross-contamination to have occurred during laboratory analysis. Due to the magnitude of the exceedance and that there were non-detectable concentrations in the other field and trip blanks, RCA considers potential for cross-contamination to be minimal and not widespread.

Results show all trip spikes with recoveries between the 70%-130% acceptance criteria.

Eurofins mgt was chosen as the primary laboratory and ALS was chosen as the secondary laboratory. Both laboratories used for analysis are NATA accredited and are experienced in the analytical requirements for potentially contaminated soil.

Eurofins mgt undertook internal quality assurance testing. Results are contained within the laboratory report sheets, **Appendix I**. **Table 3** presents a summary of their review.

Table 3 *Internal Quality Assurance Review*

	Number Samples (including QA)	Laboratory Duplicates	Spikes	Laboratory Control Samples	Laboratory Blanks
Requirement		**10%**	**5%**	**One every batch**	**One every batch**
Soil					
Metals (As, Cd, Cr, Cu, Ni, Pb, Zn)	86	9 (0)	9 (0)	1	1
TRH	86	11 (0)	10 (0)	1	1
BTEX	86	9 (0)	9 (0)	1	1
PAH	86	10 (0)	8 (0)	1	1
OCP/OPP/PCB	3	1 (0)	1 (0)	1	1
Water					
TRH	4	1 (0)	1 (0)	1	1
BTEX	4	1 (0)	1 (0)	1	1
PAH	4	1 (0)	1 (0)	1	1
Metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn)	4	1 (0)	1 (0)	1	1

Numbers in brackets refer the tests undertaken on samples not from this project but within the same laboratory batch.

Examination of the above table reveals that Eurofins mgt have undertaken laboratory quality assurance testing in accordance with the NEPM.

- Recoveries of Surrogates were within acceptance criteria of 70-130%.

- Holding Times were within laboratory specified timeframes.
- Recoveries of laboratory control samples were within the acceptance criteria of 70-130%.
- Recoveries of Spikes were within acceptance criteria of 70-130%.
- RPD for duplicates were within acceptance criteria as defined for intralaboratory duplicates in **Appendix H**.
- No Laboratory Blank result was detected above the PQL.

It is therefore considered that the data obtained from this testing is accurate and reliable in as far as it can be ascertained.

6 SITE GUIDELINES

6.1 SOIL

6.1.1 NEPM – NATIONAL ENVIRONMENT PROTECTION (ASSESSMENT OF SITE CONTAMINATION) MEASURE 1999 (AMENDED 2013)

The investigation and screening levels (ISL) utilised for the assessment of the soil on site were sourced from the National Environment Protection Measure (NEPM) for the Assessment of Site Contamination (Ref [3]). These ISL are not derived as acceptance criteria for contamination at a site, but as levels above which specific consideration of risk, based on the site use and potential exposure, is required. If a risk is determined as present, then remediation and/or management must be undertaken.

- Human Health:

  Intentionally conservative health investigation levels (HIL) have been derived for four (4) generic land use settings.

  - HIL ‘A’ - Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry). This category includes children’s daycare 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 flats.
  - HIL ‘C’ - Public open space such as parks, playgrounds, playing fields (eg, ovals) secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves).
  - HIL ‘D’ - Commercial/industrial such as shops, offices, factories and industrial sites.

The site is situated in an industrial/commercial area and proposed for use as a service station. RCA considers the site to be used for commercial purposes and thus has compared the soil validation results to the HIL ‘D’ Commercial/Industrial criteria.

Refer to **Appendix J** for a copy of the exposure scenarios for the derivation of the above land use setting.

Health screening levels (HSL) have been determined for risks associated from vapour intrusion from petroleum compound[2] contamination. These are based on the fraction of compound, the soil texture and the depth of the encountered impacts in addition to the land use settings detailed above. Other exposure routes, such as direct contact, are considered under the aesthetic assessment.

- Ecological Health:

  Ecological investigation levels (EIL) have been determined for arsenic, copper, chromium III, DDT, naphthalene, nickel, lead and zinc in soil based on a species sensitivity model and for three (3) generic land use settings as follows:

  - Areas of ecological significance (AES) – for areas where the primary intention is for the conservation and protection of the natural environment. Protection level of 99%.
  - Urban residential areas and public open space (URPOS) – broadly equivalent to the HIL'A', HIL 'B' and HIL 'C' land use settings. Protection level of 80%.
  - Commercial and industrial land uses (C and I) – considered to be broadly equivalent to HIL'D' land use setting. Protection level of 60%.

These levels are considered to apply to soil within two (2) metres of the surface which corresponds to the root zone and habitation zone of many species.

Methodology for the derivation of EIL for other contaminants is available in the NEPM and requires additional soil characterisation data.

Ecological screening levels (ESL) have been determined for petroleum compound contamination. Due to limitations in the data only moderate reliability ESL have been determined for fractions $<C_{16}$, applied generically in fine and coarse grained soils. ESL for petroleum fractions $>C_{16}$, BTEX and naphthalene are consider low reliability.

- Aesthetics:

  Aesthetic considerations operate separately to the HIL/HSL and EIL/ESL assessment. Issues to be considered include:

  - Highly malodorous soils or extracted groundwater (eg, strong residual petroleum hydrocarbon odours, hydrogen sulphide in soil or extracted groundwater, organosulfur compounds).
  - Hydrocarbon sheen on surface water.
  - Discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature.
  - Large monolithic deposits of otherwise low-risk material, eg, gypsum as powder or plasterboard, cement kiln dust.

[2] Laboratory analysis of hydrocarbons is being reported as total recoverable hydrocarbons (TRH). This testing method includes all forms of hydrocarbons, not just petroleum hydrocarbons and therefore can be considered a conservative measure against the chosen TPH criteria. Further laboratory analysis using a silica gel clean up (TRH_{sg}) is considered to enable a better identification of the extent of petroleum based contamination.

- Presence of putrescible refuse including material that may generate hazardous levels of methane such as a deep-fill profile of green waste or large quantities of timber waste.
- Soils containing residue from animal burial (eg, former abattoir sites).

Site assessment requires consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity. For example, higher expectations for soil quality would apply to residential properties with gardens compared with industrial settings.

Tier 1 assessment comprises the comparison of the soil data with the HIL/HSL and EIL/ESL. In the event that some concentrations are in excess of the relevant criteria, the summary statistics of the data set should be utilised for assessment purpose. Consideration of a range of statistics is recommended; at a minimum the 95%UCL_{ave} and maximum concentrations should be compared to the relevant criteria as long as:

- No single value exceeds 250% of the relevant criterion.
- The standard deviation of the results for each analyte is less than 50% of the relevant criterion.

In addition to appropriate consideration and application of the HSL and ESL, there are a number of policy considerations which reflect the nature and properties of petroleum hydrocarbons:

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

Application of the management limits will require consideration of site-specific factors such as the depth of building basements and services and depth to groundwater, to determine the maximum depth to which the limits should apply. The management limits may have less relevance at operating industrial sites (including mine sites) which have no or limited sensitive receptors in the area of potential impact. When the management limits are exceeded, further site-specific assessment and management may enable any identified risk to be addressed.

The presence of site TPH contamination at the levels of the management limits does not imply that there is no need for administrative notification or controls in accordance with jurisdiction requirements.

The following **Figure 1** has been taken from the NEPM to illustrate the assessment methodology in regards to petroleum contamination.

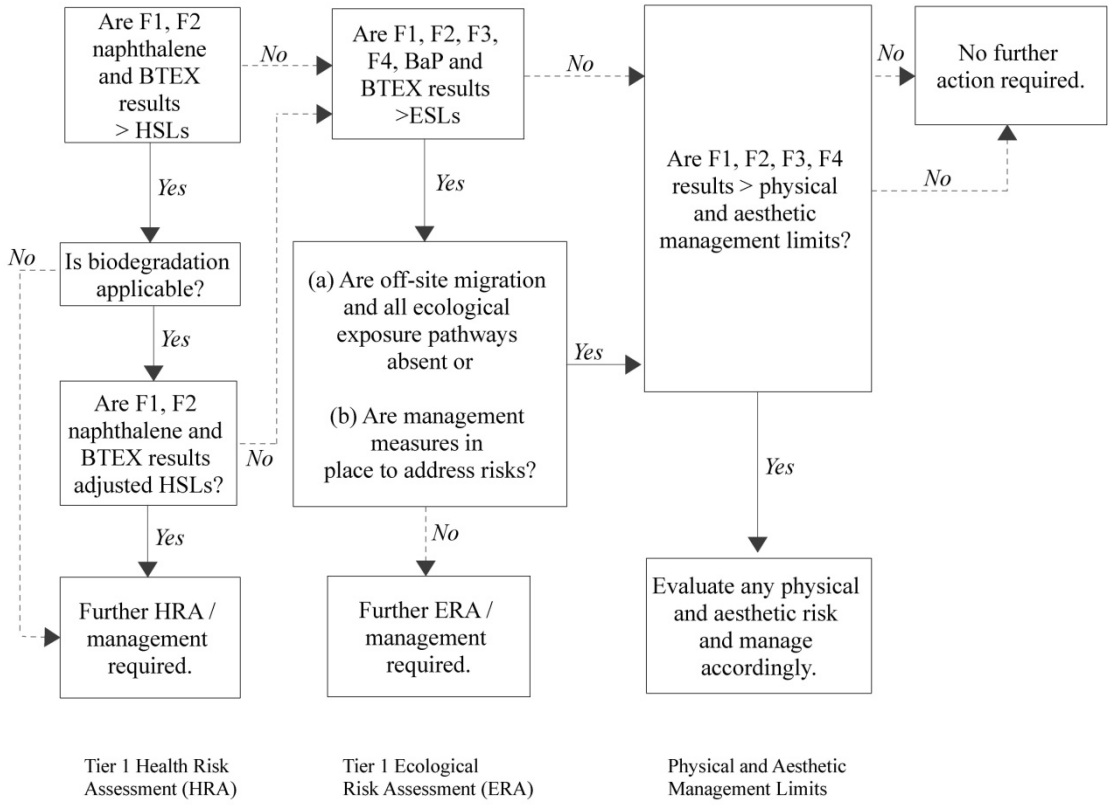


Figure 1 *Flowchart for the Tier 1 human and ecological risk assessment of petroleum hydrocarbon contamination – application of HSL and ESL and consideration of management limits*

6.2 WATER

6.2.1 NEPM – NATIONAL ENVIRONMENT PROTECTION (ASSESSMENT OF SITE CONTAMINATION) MEASURE 1999 (AMENDED 2013)

Schedule B6 of the amended NEPM 2013 provides generic groundwater investigation levels (GIL) which are defined as 'the concentration of a contaminant in groundwater above which further investigation is required'. Selected GIL are tabulated in Table 1C of Schedule B1 and are sourced from the:

- Australian water quality guidelines for fresh and marine water (AWQG) (ANZECC and ARMCANZ 2000).
- Australian drinking water guidelines (ADWG) (NHMRC and NRMMC 2011).
- Guidelines for managing risk in recreational water (GMRRW) (NHMRC 2008).

The GIL are designed to avoid unacceptable impact to exposed populations or ecosystems under a range of circumstances. The aquatic ecosystem protection GIL presented in Table 1C of Schedule B1 are applicable to 'slightly - moderately disturbed' ecosystems. The AWQG should be consulted, refer Section 6.2.2, for additional values for protection of disturbed ecosystems and pristine ecosystems.

Schedule B1 of the NEPM provides generic health screening levels (HSL) for groundwater, for protection of human health from petroleum hydrocarbon vapours, as detailed in Section 6.1.1.

6.2.2 DECC 2007, GUIDELINES FOR THE ASSESSMENT AND MANAGEMENT OF GROUNDWATER CONTAMINATION

These groundwater quality guidelines have been introduced by the NSW DECC (Ref [4]) and recommend that ANZECC (Ref [5]) investigation levels be adopted as groundwater investigation levels (GIL) for aquatic ecosystems and NHMRC and NMMC (Ref [6]) for drinking water GIL.

ANZECC 2000 are complex guidelines that consider not only the level of protection (eg, 99% or 95%) but also the state of the receiving water (eg, moderately disturbed). For the protection of aquatic ecosystems the DECC recommend the use of 95% protection for all analytes with the exception of carcinogenic analytes for which the 99% protection value should be used. The following comments are additionally made:

- Where the existing generic GIL is below the naturally occurring background concentration of a particular contaminant, the background concentration becomes the default GIL.
- Where PQL are greater than the recommended GIL the PQL is adopted as the GIL. Where background concentrations are proven to be greater than the GIL, the background concentration is adopted as the GIL.
- Where there is insufficient data for the derivation of marine water criteria it is allowable to use fresh water criteria (Section 8.3.4.5, pg 8.3-36, (Ref [5])).

The NHMRC and NMMC 2004 document provides a framework for drinking water quality management and assessment. The framework provided in this document has been adopted for the evaluation of contaminants in groundwater where groundwater can be, or is being, extracted and used for drinking water purpose.

RCA notes that the NEPM (Ref [3]) endorses the guidelines for use as GIL.

6.3 APPROPRIATENESS OF THE GUIDELINES

The NEPM document has been approved by the NSWEPA for use on potentially contaminated sites and supersedes most of the preceding reference documents.

Best practise in alignment with Council's requirements under SEPP55 prescribes assessment on the basis of the most sensitive allowable site use. Currently the site use consists of vacant land and, based on information provided to RCA, the proposed use consists of a service station facility. RCA therefore considers the criteria as defined for the commercial and industrial land use to be appropriate for assessment of human health risk from the soil at the site. The ecological risk has been assessed under the criteria defined for areas of commercial and industrial land use.

The DECC guidelines (Ref [4]) and the NEPM (Ref [3]) are both endorsed guidelines and are applicable for groundwater. Based on the land use RCA have adopted the HSL criteria as defined for commercial and industrial land use. RCA has determined that the receiving water is the Hunter River Estuary and as such the 95% marine water criteria have been used for the assessment of risk to aquatic ecosystems.

It is considered that groundwater concentrations on site may not representative of water discharging into the Hunter River Estuary and may not be representative of extracted groundwater off the site.

It is considered that the NHMRC and NMMC 2004 guideline criteria are not applicable at the site due to the non-potable saline groundwater and there is no identified current and/or proposed potable groundwater use at the site.

7 RESULTS

All soil and groundwater results are compared to the relevant guidelines in **Appendix K**. The following sections present a summary:

7.1 SOIL

- BTEX, PAH, TRH, OCP, OPP and PCB concentrations were not detected or were detected at concentrations below the relevant criteria.
- Metal concentrations were not detected or were detected at concentrations below the relevant criteria with the exception of:
  - TP1c which reported a zinc concentration of 440mg/kg which exceeds the relevant ESL.
  - TP2c which reported a zinc concentration of 410mg/kg which exceeds the relevant ESL.

Soil results in excess of the relevant ecological and human health criteria are presented in **Table 4**.

Table 4 *Soil Results above Relevant Criteria*

Sample Identification (depth)	Analyte	Criteria	Concentration
TP1c - 1.2-1.3 (m)	Zinc	360[a]	440
TP2c - 1.2-1.3 (m)	Zinc	360[a]	410

All concentrations in mg/kg.

[a] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial).

It is noted that there are five (5) detectable zinc concentrations and one (1) benzo(a)pyrene concentration in soil samples below 2m, which would exceed the relative EIL guideline concentrations, however are not considered applicable due to the depth of the sample.

7.2 GROUNDWATER

BTEX, PAH, TRH and metal concentrations were not detected or were detected at concentrations below the relevant criteria.

The elevation and position of the four (4) groundwater monitoring wells was surveyed by a registered surveyor and the groundwater flow direction determined as shown in **Drawing 4**, **Appendix A**. The results from the surveyed groundwater wells indicated that groundwater generally flowed from north to south across the site towards the Hunter River.

8 SITE CONTAMINATION CHARACTERISATION

A total of seventy eight (78) soil samples were collected from thirty two (32) locations across the site at various depths in generally accordance with NSW EPA Sampling Design Guidelines which recommends a total number of thirty (30) sample locations for a site of approximately 1.8ha.

A total of four (4) groundwater samples were collected from across the site. Two (2) groundwater samples were collected along the northern boundary of the site, one in close proximity to the proposed UPST and one towards the southern boundary of the site. It is considered the locations of the groundwater samples are positioned so that contaminant concentrations entering the site, current contaminant concentrations in the area within close proximity to the proposed UPST and the extent and distribution of current on site contaminant concentrations are adequately assessed.

Zinc concentrations in soil were detected above the relative EIL guideline concentration at two soil locations (TP1c and TP2c). RCA considers the elevated zinc concentrations are attributed to background concentrations of fill material based on the detected zinc concentrations within lower level strata at the site and RCA knowledge and experience of fill material across Kooragang Island.

It is noted that there are five (5) detectable zinc concentrations and one (1) benzo(a)pyrene concentration in soil samples below 2m, which would exceed the relative EIL guideline concentrations, however these are not considered applicable due to the depth of the samples. It was observed that detectable zinc concentrations were generally at depths between 2m and 2.8m in samples described as black clay or within a depth where the black clay strata is generally above or below the sample collected. Based on this RCA considers that the background concentration of zinc may be elevated within, and in close proximity to, the black clay layer.

Due to the relatively small magnitude of elevated zinc concentrations, the long-term industrial nature of the surrounding area and that proposed site use unlikely to impact on zinc concentrations, RCA considers the elevated zinc concentrations have minimal potential for harm to ecological or human receptors. However if, during proposed development, soil below 2m is disturbed and/or placed above or within soil depths between 0 to 2m there is potential for effects to ecological receptors.

There is no other soil contamination, or any identified groundwater contamination, identified in this assessment.

9 CONCLUSIONS

A baseline environmental site assessment was undertaken by RCA at the site located on the corner of Egret Street and Cormorant Road, Lot 1 DP 1195449, Kooragang Island at the request of Port of Newcastle Operations.

The purpose of the assessment was to develop a comprehensive baseline soil and groundwater contaminant profile of the site prior to the development of a service station.

The scope of work at the site consisted of thirty two (32) test pit locations systematically distributed on a 20x20m grid and the installation of three (3) groundwater bores, however one (1) existing groundwater bore was observed during fieldwork and incorporated into the sampling programme. Soil and groundwater sampling locations were positioned so as

to effectively assess the site contaminant profile and the extent and distribution of potential contaminants.

A total of seventy eight (78) soil samples were selected from samples collected from the thirty two (32) locations and sent for laboratory analysis. Soil samples sent for laboratory analysis were selected based upon visual and/or olfactory evidence of contamination and to effectively assess the overall site soil contaminant profile.

A total of four (4) groundwater samples were collected from across the site and sent from laboratory analysis.

The results show no detectable or minor concentrations of TRH, BTEX, PAH, OCP, OPP and PCB in all soil samples. Low levels of metals were identified below the human health and ecological criteria with the exception of two (2) locations where zinc concentrations were identified above the EIL.

The results show no detectable or minor concentrations of BTEX, PAH, TRH and metals in all groundwater samples.

The site is considered suitable for the proposed use of a service station and convenience store.

10 LIMITATIONS

This report has been prepared for Port of Newcastle Operations and Sovechles Developments Pty Ltd in accordance with an agreement with RCA dated 7 March 2014. The services performed by RCA have been conducted in a manner consistent with that generally exercised by members of its profession and consulting practice.

This report has been prepared for the sole use of Port of Newcastle Operations and Sovechles Developments Pty Ltd. The report may not contain sufficient information for purposes of other uses or for parties other than Port of Newcastle Operations and Sovechles Developments Pty Ltd. This report shall only be presented in full and may not be used to support objectives other than those stated in the report without written permission from RCA.

The information in this report is considered accurate at the date of issue with regard to the current conditions of the site. Conditions can vary across any site that cannot be explicitly defined by investigation.

Environmental conditions including contaminant concentrations can change in a limited period of time. This should be considered if the report is used following a significant period of time after the date of issue.

Yours faithfully

RCA AUSTRALIA

John Gilbert
Environmental Engineer

Fiona Brooker
Associate Environmental Engineer

REFERENCES

[1] Protection of the Environment (Underground Petroleum Storage Systems) Regulation, 2008.

[2] RCA, Geotechnical Investigations Lot 10 and Part Lot 11, Corner of Egret Street and Cormorant Road, Kooragang Island, RCA ref: 10556a-201/0.

[3] NEPM, National Environment Protection (Assessment of Site Contamination) Measure, 1999 as amended 2013.

[4] DECC, Contaminated Sites – Guidelines for the Assessment and Management of Contaminated Groundwater, March 2007.

[5] ANZECC, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.

[6] National Health and Medical Research Council, Australian Drinking Water Guidelines, 2011.

GLOSSARY

ANZECC	Australian and New Zealand Environmental Conservation Council.
DECC	NSW Department of Environment and Climate Change.
HIL 'A'	Standard Residential Health Based Investigation Level, pg 9 Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure.*
HIL 'D'	Residential with minimal opportunities for soil access Health Based Investigation Level, pg 9 Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure.*
HIL 'E'	Parks, recreational open space and playing fields Health Based Investigation Level, pg 9 Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure.*
HIL 'F'	Commercial/industrial Health Based Investigation Levels, pg 9 Schedule B1 *National Environment Protection (Assessment of Site Contamination) Measure*.
Hotspot	A sample, or location, where contaminant concentrations exceed 250% of the appropriate guideline.
In-Situ	In place, without excavation.
Interlaboratory	Prefix inter – as meaning between. A sample sent to two different laboratories for comparative analysis.
Intralaboratory	Prefix intra – as meaning within. A sample sent twice to the sample laboratory for comparative analysis.
kg	kilogram, 1000 gram.
Leachate	Fluid that has passed through a soil stratum, possibly collects contaminants.

LEP	Local Environment Plan. A planning tool for the Local Government.
µg	microgram, 1/1000 milligram.
mg	milligram, 1/1000 gram.
NAPL	Non-aqueous phase liquid. This can be Lighter than water (LNAPL), or more Dense than water (DNAPL).
NEPC	National Environment Protection Council.
NEPM	National Environment Protection Measure.
NHMRC	National Health and Medical Research Council.
NSWEPA	NSW Environment Protection Authority – formerly a component of DECC, DECCW but made a separate entity in 2011 to regulates the contaminated land industry.
PID	Photoionisation Detector. Measures volatile gases in air or emanating from soil or water.
PQL	Practical Quantitation Limit.
QA	Quality Assurance.
QC	Quality Control.
RPD	Relative Percentage Difference.
SPT	Standard Penetration Test.
<u>Chemical Compounds</u>	
BTEX	Benzene, Toluene, Ethylbenzene, Xylene.
OCPs	Organochlorin Pesticides.
PAH	Polycyclic Aromatic Hydrocarbons. Multi-ring compounds found in fuels, oils and creosote. These are also common combustion products.
PCBs	Poly Chlorinated Biphenyls.
Phenols	Carbolic Acid (C_6H_5OH). Phenols and substituted phenols are used as anti-microbial agents in high concentrations.
TPH	Total Petroleum Hydrocarbons.
TRH	Total Recoverable Hydrocarbons.

Appendix A

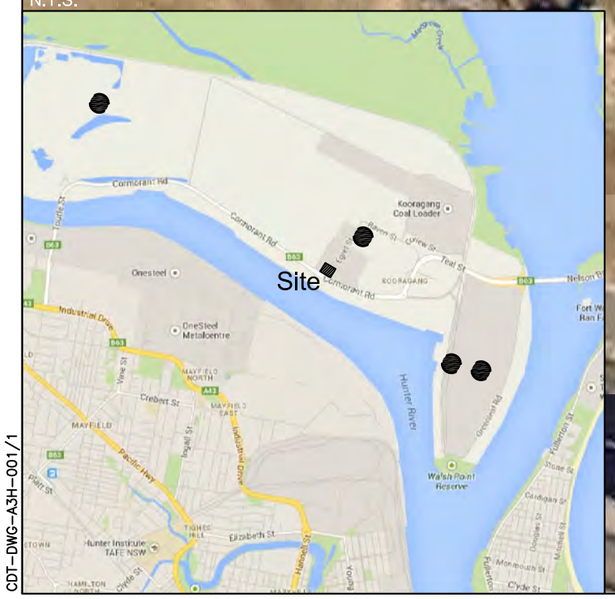
Drawings

Lot 1
DP1195449

Egret Street

Cormorant Road

Locality Plan
N.T.S.



LEGEND

- Approximate Lot and site boundary
- Site registered by EPA
- Approximate photograph direction and location

0 10 20 30 40
metres

Aerial image taken from Nearmap
January 30 2014

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

SITE LOCALITY AND LOCATION PLAN
LOT 1 DP1195449
CORMORANT ROAD
KOORAGANG ISLAND

CLIENT	Port of Newcastle Operations			RCA Ref	10556-401/1
DRAWN BY	JG	SCALE	1 : 1000 (A3)	DRAWING No 1	REV 0
APPROVED BY	FB	DATE	27/6/2014	OFFICE	NEWCASTLE

CDT-DWG-A3H-001/1

NOTE: Drawing adapted from plan supplied by
Project No. 13-065, Dwg No. A-01, Amdt P3
Dated 19 March 2014

0 10 20 30 40 50
metres

LEGEND

Approximate Lot and site boundary

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROPOSED SITE LAYOUT
LOT 1 DP1195449
KOORAGANG ISLAND

CLIENT	Port of Newcastle Operations			RCA Ref	10556-401/1
DRAWN BY	JG	SCALE	1:1000 (A3)	DRAWING No 2	REV 0
APPROVED BY	FB	DATE	27/6/2014	OFFICE	NEWCASTLE

CDT-DWG-A3H-001/1

TP30
TP29
TP31
TP28
TP32
TP20
TP27
TP26
TP21
TP22
Lot 1
DP1195449
TP19
TP25
TP17
TP16
TP23
TP18
TP15
TP5
TP6
TP24
TP14
TP13
TP7
TP9
TP4
Egret Street
TP8
TP12
TP10
TP3
TP11
Cormorant Road
TP2
TP1

LEGEND

- Approximate Lot and site boundary
- Approximate test pit location
- Approximate composite sample location

0 10 20 30 40
metres

Aerial image taken from Nearmap
January 30 2014

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

TEST PIT LOCATION PLAN
LOT 1 DP1195449
CORMORANT ROAD
KOORAGANG ISLAND

CLIENT	Port of Newcastle Operations			RCA Ref	10556-401/1
DRAWN BY	JG	SCALE	1 : 1000 (A3)	DRAWING No 3	REV 0
APPROVED BY	FB	DATE	27/6/2014	OFFICE	NEWCASTLE

CDT-DWG-A3H-001/1

MW4

MW1

MW2

MW3

Lot 1
DP1195449

~ Location of destroyed bore

Cormorant Road

2.15

2.10

2.1

2.05

2.00

LEGEND

- Approximate Lot and site boundary
- Approximate existing groundwater bore
- Approximate RCA groundwater bore
- Approximate groundwater contours
- Approximate groundwater flow direction

0 10 20 30 40
metres

Aerial image taken from Nearmap
January 30 2014

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

GROUNDWATER BORE AND CONTOUR PLAN
LOT 1 DP1195449
CORMORANT ROAD
KOORAGANG ISLAND

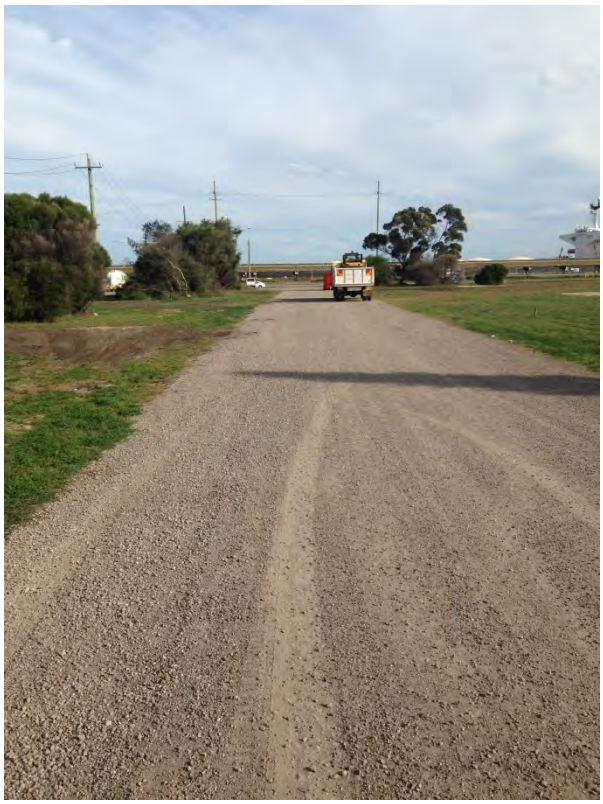
CLIENT	Port of Newcastle Operations			RCA Ref	10556-401/1
DRAWN BY	JG	SCALE	1 : 1000 (A3)	DRAWING No 4	REV 0
APPROVED BY	FB	DATE	27/6/2014	OFFICE	NEWCASTLE

CDT-DWG-A3H-001/1

Appendix B

Site Photographs

PHOTOGRAPH 1 *Looking south-west from north-east corner and showing location of MW1*



PHOTOGRAPH 2 *Looking south from north-east corner, showing access road on eastern side of site*

PHOTOGRAPH 3 *Looking west from north-east corner*

PHOTOGRAPH 4 *Looking south from north-west corner*

PHOTOGRAPH 5 *Looking south-east from north-west corner and showing location of existing monitoring bore (MW4)*

PHOTOGRAPH 6 *Looking north from southern boundary, showing location of MW2 and MW3*

PHOTOGRAPH 7 *Looking north-east from southern boundary, showing location of MW2*

PHOTOGRAPH 8 *Looking east from southern boundary*

PHOTOGRAPH 9 *Looking north-west from eastern boundary*

PHOTOGRAPH 10 *Existing intact monitoring well located in north-west corner of site*

PHOTOGRAPH 11 *Destroyed monitoring well in south-west corner of site*

PHOTOGRAPH 12 ***C****onstruction work in south-east corner*

PHOTOGRAPH 13 *Lithology of TP1*

PHOTOGRAPH 14 *Lithology of TP2*

PHOTOGRAPH 15 *Lithology of TP3*

PHOTOGRAPH 16 *Lithology of TP4*

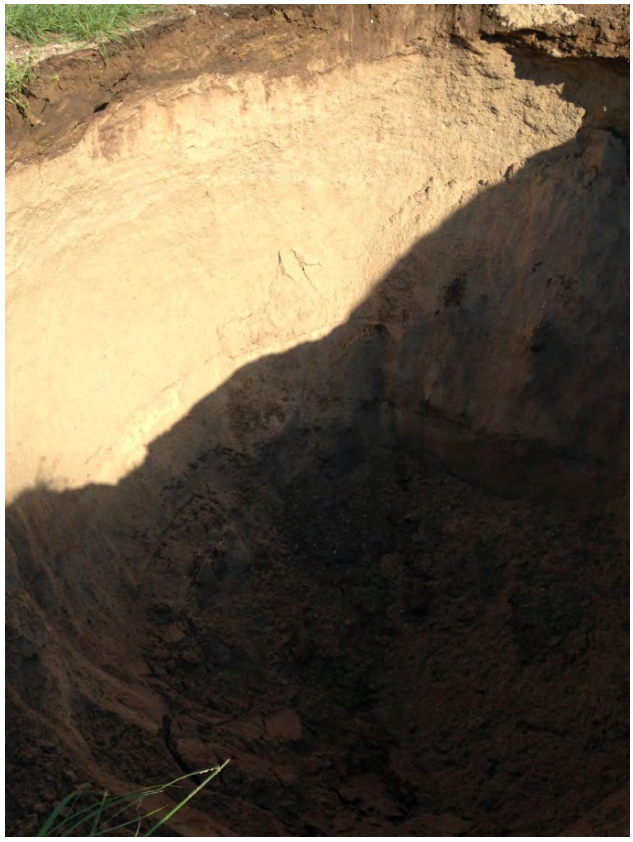
PHOTOGRAPH 17 *Lithology of TP6*

PHOTOGRAPH 18 *Lithology of TP7*

PHOTOGRAPH 19 *Lithology of TP8*

PHOTOGRAPH 20 *Lithology of TP9*

PHOTOGRAPH 21 *Lithology of TP10*



PHOTOGRAPH 22 *Lithology of TP11*

PHOTOGRAPH 23 *Lithology of TP12*

PHOTOGRAPH 24 *Lithology of TP14*

PHOTOGRAPH 25 *Lithology of TP15*

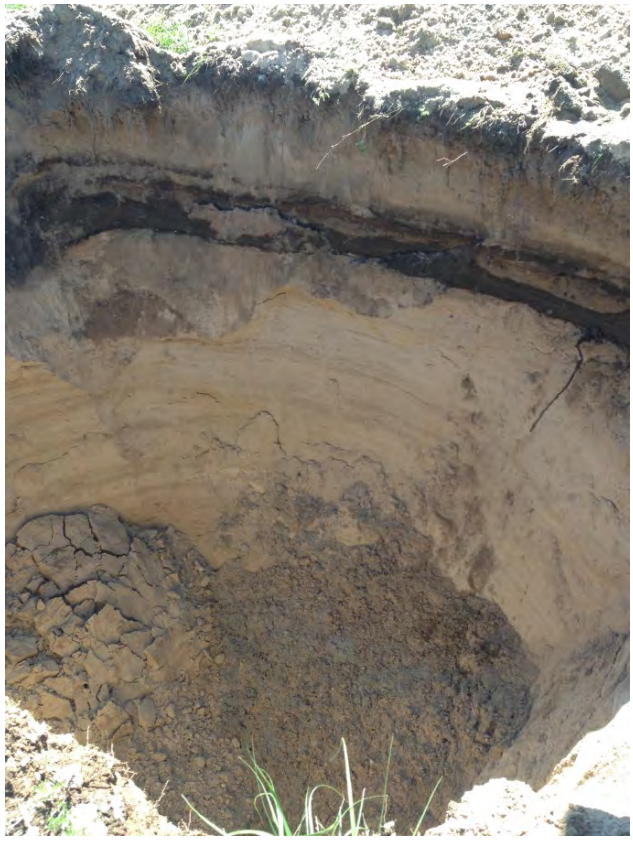
PHOTOGRAPH 26 *Lithology of TP16*

PHOTOGRAPH 27 *Lithology of TP17*

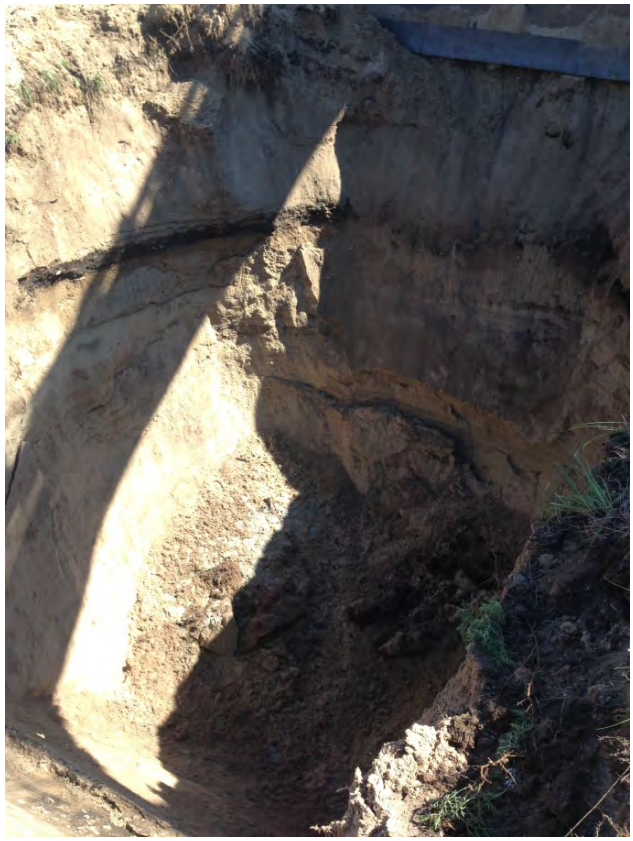
PHOTOGRAPH 28 *Lithology of TP18*

PHOTOGRAPH 29 *Lithology of TP19*

PHOTOGRAPH 30 *Lithology of TP20*



PHOTOGRAPH 31 *Lithology of TP21*

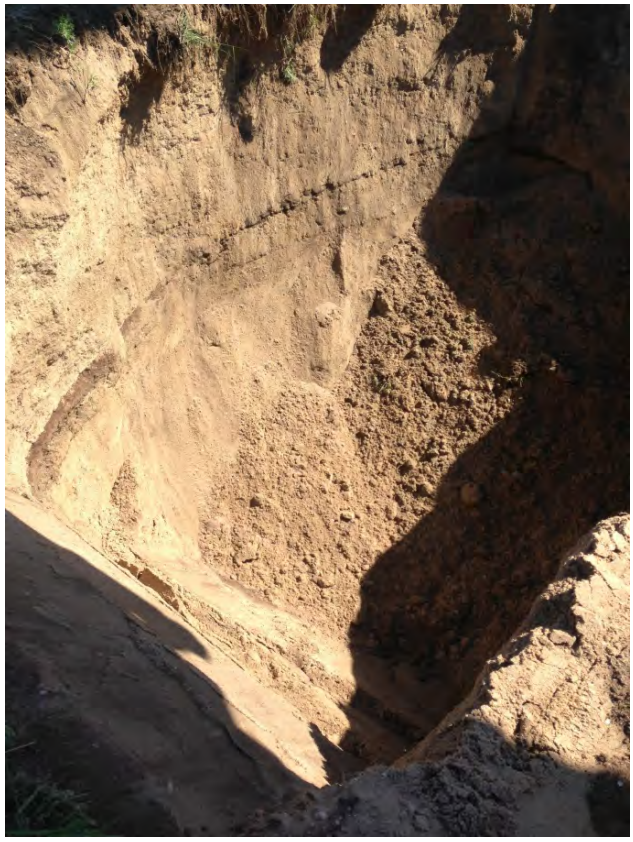


PHOTOGRAPH 32 *Lithology of TP22*

PHOTOGRAPH 33 *Lithology of TP23*

PHOTOGRAPH 34 *Lithology of TP24*

PHOTOGRAPH 35 *Lithology of TP25*



PHOTOGRAPH 36 *Lithology of TP26*

PHOTOGRAPH 37 *Lithology of TP27*

PHOTOGRAPH 38 *Lithology of TP28*

PHOTOGRAPH 39 *Lithology of TP29*

PHOTOGRAPH 40 *Lithology of TP30*

PHOTOGRAPH 41 *Lithology of TP31*

PHOTOGRAPH 42 *Lithology of TP32*

Appendix C

Section 149 Certificates

PLANNING CERTIFICATE

The City of Newcastle

Section 149, Environmental Planning and Assessment Act 1979

To: RCA AUSTRALIA
PO BOX 175
CARRINGTON NSW 2294

Certificate No: 174238
Fees Paid: $133.00
Receipt No(s): 4042650

Your Reference: John Gilbert

Date of Issue: 20/03/2014

The Land: Lot: 10 DP: 1144748
130 CORMORANT ROAD KOORAGANG 2304

Advice provided on this Certificate:

Advice under section 149(2): see items 1 – 18
Additional advice under section 149 (5): see Items 19 – 28

IMPORTANT: Please read this certificate carefully

This certificate contains important information about the land.

Please check for any item which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, phone Council's **Customer Enquiry Centre** on (02) 4974 2000, or come in and see us.

The information provided in this certificate relates only to the land described above. If you need information about adjoining or nearby land, or about the Council's development policies for the general area, contact Council's **Customer Enquiry Centre**.

All information provided is correct as at 20/03/2014. However, it's possible for changes to occur within a short time. We recommend that you only rely upon a very recent certificate.

The City of Newcastle

PO Box 489
NEWCASTLE 2300

Phone: (02) 4974 2000
Facsimile: (02) 4974 2222

Customer Enquiry Centre
Ground floor,
282 King Street
Newcastle NSW 2300

Office hours:
Mondays to Fridays 8.30 am to 5.00 pm

PART 1:

ADVICE PROVIDED UNDER SECTION 149(2)

ATTENTION: The explanatory notes appearing in italic print within Part 1 are provided to assist understanding, but do not form part of the advice provided under section 149(2). These notes shall be taken as being advice provided under section 149(5).

1. Names of relevant planning instruments and DCPs

The following environmental planning instruments, proposed environmental planning instruments and development control plans apply to the land, either in full or in part.

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation of Land

State Environmental Planning Policy No. 62 - Sustainable Aquaculture

State Environmental Planning Policy No. 64 - Advertising and Signage

State Environmental Planning Policy No. 71 - Coastal Protection

State Environmental Planning Policy (Major Development) 2005

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Temporary Structures) 2007

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

State Environmental Planning Policy (State and Regional Development) 2011

SEPP (Major Development) Amendment (Three Ports) 2009

Newcastle Development Control Plan 2012

2. Zoning and land use under relevant LEPs

NOTE: *The land is listed as a State significant site in Schedule 3 of State Environmental Planning Policy (Major Development) 2005. The listing establishes a planning regime for the site including zoning, permitted and prohibited uses and heritage conservation provisions (if applicable).*

Refer to State Environmental Planning Policy (Major Development) 2005 for details.

3. Complying development

Note Other requirements: *The advice below for all Complying Development Codes, is limited to identifying whether or not the* ***land****, the subject of the certificate, is land on which complying development may be carried out because of Clauses 1.17A(1)(c) to (e), (2), (3) & (4) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the Codes SEPP).*

General Housing Code

Complying development under the General Housing Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Rural Housing Code

Complying development under the Rural Housing Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Housing Alterations Code

Complying development under the Housing Alterations Code MAY be carried out on this land.

General Development Code

Complying development under the General Development Code MAY be carried out on this land.

Commercial and Industrial Alterations Code

Complying development under the Commercial and Industrial Alterations Code MAY be carried out on this land.

Commercial and Industrial (New Buildings and Additions) Code

Complying development under the Commercial and Industrial (New Buildings and Additions) Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Subdivision Code

Complying development under the Subdivision Code MAY be carried out on this land.

Demolition Code

Complying development under the Demolition Code MAY be carried out on this land.

Fire Safety Code

Complying development under the Fire Safety Code MAY be carried out on this land.

4. Coastal Protection Act 1979

The land is within the coastal zone as defined by the Coastal Protection Act 1979. however there are no notices under Sections 38 or 39 of this Act.

4A. Certain information relating to beaches and coasts

The land IS NOT AFFECTED by an order under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

The Council HAS NOT been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land).

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

The land IS NOT subject to an agreement for annual charges under section 496B of the Local Government Act 1993 for coastal protection services (within the meaning of section 553B of that Act).

5. Mine Subsidence Compensation Act 1961

The land IS NOT within a proclaimed Mine Subsidence District under the Mine Subsidence Compensation Act 1961.

NOTE: The above advice is provided to the extent that Council has been notified by the Mine Subsidence Board. For up-to-date details, contact the Mine Subsidence Board, 117 Bull Street, Newcastle West. Ph (02) 49084300.

6. Road widening or realignment

NOTE: The Roads and Maritime Services (RMS) may have proposals that are not referred to in this item. For advice about affectation by RMS proposals, contact the Roads and Maritime Services, Locked Mail Bag 30 Newcastle 2300. Ph: 131 782.

The land IS NOT AFFECTED by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.

The land IS NOT AFFECTED by any road widening or road realignment under an environmental planning instrument.

The land IS NOT AFFECTED by any road widening or road realignment under a resolution of the Council.

7. Policies on hazard risk restrictions

Except as stated below, the land is not affected by a policy referred to in Item 7 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000 that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

Land Contamination: Council has adopted a policy of restricting development or imposing conditions on properties affected by Land Contamination. Refer to Section 5.02 Land Contamination of Newcastle Development Control Plan 2012, which may be inspected or purchased at Council's Customer Enquiry Centre.

NOTE: The absence of a policy to restrict development of the land because of the likelihood of a particular risk does not imply that the land is free from that risk. The Council considers the likelihood of natural and man-made risks when determining development applications under section 79C of the Environmental Planning and Assessment Act 1979. Detailed investigation carried out in conjunction with the preparation or assessment of a development application may result in the Council either refusing development consent or imposing conditions of consent on the basis of risks that are not identified above.

7A. Flood related development controls information

Council's information currently indicates that the property is, or contains, flood prone land as defined in the Floodplain Development Manual: the management of flood liable land, April 2005 published by the NSW Government.

Development of flood prone land is controlled by Section 4.01 Flood Management of Newcastle DCP 2012. The Newcastle DCP 2012 provides restrictions or imposes conditions with respect to all development of flood prone land. This includes development for the purpose of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings.

NOTE: More detailed flood information specific to the property is available on separate flooding certificate application through Council's Customer Enquiry Centre on (02) 4974 2000

8. Land reserved for acquisition

The land is not identified for acquisition by a public authority (as referred to in section 27 of the Act) by any environmental planning instrument or proposed environmental planning instrument applying to the land.

9. Contributions plans

The following contribution plan/s apply to the land.

Section 94A Development Contributions Plan 2009 - Updated December 2013:

The Plan specifies section 94A contributions that may be imposed as a condition of development consent.

NOTE: Contributions plans are available on Council's website or may be inspected or purchased at Council's Customer Enquiry Centre.

9A. Biodiversity certified land

The land IS NOT biodiversity certified land within the meaning of Part 7AA of the Threatened Species Conservation Act 1995.

10. Biobanking agreements

The land IS NOT land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates.

11. Bush fire prone land

The land IS NOT bush fire prone land for the purposes of the Environmental Planning and Assessment Act 1979.

12. Property vegetation plans

Not applicable. The Native Vegetation Act 2003 does not apply to the Newcastle local government area.

13. Orders under Trees (Disputes Between Neighbours) Act 2006

Council HAS NOT been notified that an order has been made under the Trees (Disputes between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

14. Directions under Part 3A

The land IS NOT AFFECTED by a direction by the Minister in force under section 75P (2) (c1) of the Act.

15. Site compatibility certificates and conditions for seniors housing

(a) The land IS NOT AFFECTED by a current site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Housing for Seniors and People with a Disability) 2004.

(b) The land IS NOT AFFECTED by any terms of kind referred to in clause 18(2) of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, that have been imposed as a condition of consent to a development application granted after 11 October, 2007 in respect of the land.

16. Site compatibility certificates for infrastructure

The land IS NOT AFFECTED by a valid site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Infrastructure) 2007.

17. Site compatibility certificates and conditions for affordable rental housing

The land IS NOT AFFECTED by a valid site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Affordable Rental Housing) 2009.

18. Paper subdivision information

The land is NOT AFFECTED by any development plan that applies to the land or that is proposed to be subject to a consent ballot.

Note: *There are no matters prescribed by section 59(2) of the Contaminated Land Management Act 1997 to be disclosed, however if other contamination information is held by the Council this may be provided under a section 149(5) certificate.*

PART 2:

ADVICE PROVIDED UNDER SECTION 149(5)

ATTENTION: Section 149(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 149(5).

19. Outstanding written request issued by Council.

Council records indicate that this premise IS NOT AFFECTED by a current notice or order (excluding the notices or orders mentioned in the note below).

NOTE: The Council has not inspected the premises immediately prior to the issue of this certificate. It is possible that the premises are affected by matters of which the Council is unaware.

NOTE: This Certificate does not include any advice regarding outstanding notices or orders issued under the Environmental Planning and Assessment Act 1979 or the Local Government Act 1993. To obtain advice regarding these matters, you should lodge an application for a Certificate as to Outstanding Notices and Orders (accompanied by the appropriate fee). For further information, please contact the Customer Enquiry Centre on (02) 4974 2000.

20. Heritage Items

There are no heritage items listed in Clause 21 to the State Environmental Planning Policy (Major Development) Amendment (Three Ports) 2009 situated on the land.

21. Suspension of covenants, agreements and instruments

For the purpose of enabling development on land within the Three Ports Site to be carried out in accordance with Part 20 of Schedule 3 of State Environmental Planning Policy (Major Development) 2005 or with a development consent granted under the Act, any agreement, covenant or other similar instrument that restricts the carrying out of that development does not apply to the extent necessary to serve that purpose.

Clause 19 of State Environmental Planning Policy (Major Development) Amendment (Three Ports) 2009 does not apply:

(a) to a covenant imposed by the relevant council or that the relevant council requires to be imposed, or

(b) to any prescribed instrument within the meaning of section 183A of the Crown Lands Act 1989, or

(c) to any conservation agreement within the meaning of the National Parks and Wildlife Act 1974, or

(d) to any Trust agreement within the meaning of the Nature Conservation Trust Act 2001. orl

(e) to any property vegetation plan within the meaning of the Native Vegetation Act 2003, or

(f) to any biobanking agreement within the meaning of Part 7A of the Threatened Species Conservation Act 1995, or

(g) to any planning agreement within the meaning of Division 6 of Part 4 of the Act.

Clause 19 does not affect the rights or interests of any public authority under any instrument.

22. Unexhibited proposed environmental planning instruments.

The land IS NOT AFFECTED by a resolution of the Council to endorse a planning proposal which has yet to have a gateway determination pursuant to section 56(2) of the Act.

23. Draft development control plans.

A draft development control plan DOES NOT APPLY to the land. The draft plans are exhibited pursuant to Part 3 of the Environmental Planning and Assessment Regulation 2000.

24. Heritage Act 1977.

The land IS NOT AFFECTED by a listing on the State Heritage Register or an Interim Heritage Order that is in force under the Heritage Act 1977.

NOTE: The above advice is provided to the extent that Council has been notified by the Heritage Council of NSW. For up-to-date details, contact the Office of Environment and Heritage, PO Box A290, South Sydney NSW 1232 Ph: (02) 9995 5000.

25. Listing by National Trust of Australia.

The land IS NOT AFFECTED by a listing of the National Trust of Australia (NSW).

NOTE: The above advice is provided to the extent that Council has been notified by the National Trust of Australia (NSW). For up-to-date details, contact the National Trust.

26. Australian Heritage Database.

The land IS NOT AFFECTED by a listing on the Australian Heritage Database.

NOTE: The above advice is provided to the extent that Council has been notified by the Department of the Environment, Heritage, Water and the Arts. For up-to-date details, contact the Department of the Environment, Heritage, Water and the Arts, King Edward Terrace, Parkes ACT 2600. Ph (02) 6274 1111.

27. Environment Protection & Biodiversity Conservation Act 1999 (Cth)

Under the (Commonwealth) Environment Protection and Biodiversity Conservation Act 1999, actions which have, may have or are likely to have, a significant impact on a matter of national environmental significance may be taken only with the approval of the Commonwealth Minister for the Environment.

Approval is also required for actions that have a significant effect on the environment of Commonwealth land. These actions may be on Commonwealth land or other land.

This approval is in addition to any approvals under the (NSW) Environmental Planning and Assessment Act 1979 or other NSW legislation.

Matters of national environmental significance are:

- declared World Heritage areas
- declared Ramsar wetlands
- listed threatened species and ecological communities
- listed migratory species
- nuclear actions
- the environment of Commonwealth marine areas.

Locations within the City of Newcastle that are a declared Ramsar wetland include Kooragang Nature Reserve and Shortland Wetlands. Listed threatened species and listed migratory species are known to occur within the City of Newcastle.

28. Other matters

The land is affected by the following:

Newcastle earthquake

Earthquakes occurred in the vicinity of Newcastle on 28th December 1989 and 6 August 1994. Buildings on the land may have suffered damage as a consequence of the earthquakes. Prospective purchasers are advised to make their own enquiries as to whether the property is affected by any damage.

Newcastle Urban Strategy (Updated 2009)

The Newcastle Urban Strategy was adopted by the Council on 11 March 1998 and updated on 15 December 2009. The contents of the Strategy will be taken into account when the Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document. www.newcastle.nsw.gov.au

Lower Hunter Regional Strategy (2006 - 2031)

The Lower Hunter Regional Strategy has been prepared by the Department of Planning and Infrastructure. The contents of the strategy will be taken into account when Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document. www.newcastle.nsw.gov.au

Newcastle City-Wide Floodplain Risk Management Study and Plan (2012)

The Newcastle City-wide Floodplain Risk Management Study and Plan addresses flood management for the City of Newcastle. The Study and Plan will be taken into account when Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document www.newcastle.nsw.gov.au.

Issued without alterations or additions, 20/03/14

for:
KEN GOULDTHORP
GENERAL MANAGER

PLANNING CERTIFICATE

The City of Newcastle

Section 149, Environmental Planning and Assessment Act 1979

To: RCA AUSTRALIA
PO BOX 175
CARRINGTON NSW 2294

Certificate No: 174236
Fees Paid: $133.00
Receipt No(s): 4042648

Your Reference: John Gilbert

Date of Issue: 20/03/2014

The Land: Lot: 11 DP: 1144748
9999 EGRET STREET KOORAGANG 2304

Advice provided on this Certificate:

Advice under section 149(2): see items 1 – 18
Additional advice under section 149 (5): see Items 19 – 28

IMPORTANT: Please read this certificate carefully

This certificate contains important information about the land.

Please check for any item which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, phone Council's **Customer Enquiry Centre** on (02) 4974 2000, or come in and see us.

The information provided in this certificate relates only to the land described above. If you need information about adjoining or nearby land, or about the Council's development policies for the general area, contact Council's **Customer Enquiry Centre**.

All information provided is correct as at 20/03/2014. However, it's possible for changes to occur within a short time. We recommend that you only rely upon a very recent certificate.

The City of Newcastle

PO Box 489
NEWCASTLE 2300

Phone: (02) 4974 2000
Facsimile: (02) 4974 2222

Customer Enquiry Centre
Ground floor,
282 King Street
Newcastle NSW 2300

Office hours:
Mondays to Fridays 8.30 am to 5.00 pm

PART 1:

ADVICE PROVIDED UNDER SECTION 149(2)

ATTENTION: The explanatory notes appearing in italic print within Part 1 are provided to assist understanding, but do not form part of the advice provided under section 149(2). These notes shall be taken as being advice provided under section 149(5).

1. Names of relevant planning instruments and DCPs

The following environmental planning instruments, proposed environmental planning instruments and development control plans apply to the land, either in full or in part.

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation of Land

State Environmental Planning Policy No. 62 - Sustainable Aquaculture

State Environmental Planning Policy No. 64 - Advertising and Signage

State Environmental Planning Policy No. 71 - Coastal Protection

State Environmental Planning Policy (Major Development) 2005

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Temporary Structures) 2007

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

State Environmental Planning Policy (State and Regional Development) 2011

SEPP (Major Development) Amendment (Three Ports) 2009

Newcastle Development Control Plan 2012

2. Zoning and land use under relevant LEPs

NOTE: *The land is listed as a State significant site in Schedule 3 of State Environmental Planning Policy (Major Development) 2005. The listing establishes a planning regime for the site including zoning, permitted and prohibited uses and heritage conservation provisions (if applicable).*

Refer to State Environmental Planning Policy (Major Development) 2005 for details.

3. Complying development

Note Other requirements: *The advice below for all Complying Development Codes, is limited to identifying whether or not the* ***land****, the subject of the certificate, is land on which complying development may be carried out because of Clauses 1.17A(1)(c) to (e), (2), (3) & (4) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the Codes SEPP).*

General Housing Code

Complying development under the General Housing Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Rural Housing Code

Complying development under the Rural Housing Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Housing Alterations Code

Complying development under the Housing Alterations Code MAY be carried out on this land.

General Development Code

Complying development under the General Development Code MAY be carried out on this land.

Commercial and Industrial Alterations Code

Complying development under the Commercial and Industrial Alterations Code MAY be carried out on this land.

Commercial and Industrial (New Buildings and Additions) Code

Complying development under the Commercial and Industrial (New Buildings and Additions) Code may NOT be carried out on this land. To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on Council's web pages. The land is affected by:

Specific land exemptions being land identified on an Acid Sulfate Soils Map as being Class 1 or Class 2.

Subdivision Code

Complying development under the Subdivision Code MAY be carried out on this land.

Demolition Code

Complying development under the Demolition Code MAY be carried out on this land.

Fire Safety Code

Complying development under the Fire Safety Code MAY be carried out on this land.

4. Coastal Protection Act 1979

The land is within the coastal zone as defined by the Coastal Protection Act 1979. however there are no notices under Sections 38 or 39 of this Act.

4A. Certain information relating to beaches and coasts

The land IS NOT AFFECTED by an order under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

The Council HAS NOT been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land).

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

The land IS NOT subject to an agreement for annual charges under section 496B of the Local Government Act 1993 for coastal protection services (within the meaning of section 553B of that Act).

5. Mine Subsidence Compensation Act 1961

The land IS NOT within a proclaimed Mine Subsidence District under the Mine Subsidence Compensation Act 1961.

NOTE: The above advice is provided to the extent that Council has been notified by the Mine Subsidence Board. For up-to-date details, contact the Mine Subsidence Board, 117 Bull Street, Newcastle West. Ph (02) 49084300.

6. Road widening or realignment

NOTE: The Roads and Maritime Services (RMS) may have proposals that are not referred to in this item. For advice about affectation by RMS proposals, contact the Roads and Maritime Services, Locked Mail Bag 30 Newcastle 2300. Ph: 131 782.

The land IS NOT AFFECTED by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.

The land IS NOT AFFECTED by any road widening or road realignment under an environmental planning instrument.

The land IS NOT AFFECTED by any road widening or road realignment under a resolution of the Council.

7. Policies on hazard risk restrictions

Except as stated below, the land is not affected by a policy referred to in Item 7 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000 that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

Land Contamination: Council has adopted a policy of restricting development or imposing conditions on properties affected by Land Contamination. Refer to Section 5.02 Land Contamination of Newcastle Development Control Plan 2012, which may be inspected or purchased at Council's Customer Enquiry Centre.

NOTE: The absence of a policy to restrict development of the land because of the likelihood of a particular risk does not imply that the land is free from that risk. The Council considers the likelihood of natural and man-made risks when determining development applications under section 79C of the Environmental Planning and Assessment Act 1979. Detailed investigation carried out in conjunction with the preparation or assessment of a development application may result in the Council either refusing development consent or imposing conditions of consent on the basis of risks that are not identified above.

7A. Flood related development controls information

Council's information currently indicates that the property is, or contains, flood prone land as defined in the Floodplain Development Manual: the management of flood liable land, April 2005 published by the NSW Government.

Development of flood prone land is controlled by Section 4.01 Flood Management of Newcastle DCP 2012. The Newcastle DCP 2012 provides restrictions or imposes conditions with respect to all development of flood prone land. This includes development for the purpose of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings.

NOTE: More detailed flood information specific to the property is available on separate flooding certificate application through Council's Customer Enquiry Centre on (02) 4974 2000

8. Land reserved for acquisition

The land is not identified for acquisition by a public authority (as referred to in section 27 of the Act) by any environmental planning instrument or proposed environmental planning instrument applying to the land.

9. Contributions plans

The following contribution plan/s apply to the land.

Section 94A Development Contributions Plan 2009 - Updated December 2013:

The Plan specifies section 94A contributions that may be imposed as a condition of development consent.

NOTE: Contributions plans are available on Council's website or may be inspected or purchased at Council's Customer Enquiry Centre.

9A. Biodiversity certified land

The land IS NOT biodiversity certified land within the meaning of Part 7AA of the Threatened Species Conservation Act 1995.

10. Biobanking agreements

The land IS NOT land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates.

11. Bush fire prone land

The land IS NOT bush fire prone land for the purposes of the Environmental Planning and Assessment Act 1979.

12. Property vegetation plans

Not applicable. The Native Vegetation Act 2003 does not apply to the Newcastle local government area.

13. Orders under Trees (Disputes Between Neighbours) Act 2006

Council HAS NOT been notified that an order has been made under the Trees (Disputes between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

14. Directions under Part 3A

The land IS NOT AFFECTED by a direction by the Minister in force under section 75P (2) (c1) of the Act.

15. Site compatibility certificates and conditions for seniors housing

(a) The land IS NOT AFFECTED by a current site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Housing for Seniors and People with a Disability) 2004.

(b) The land IS NOT AFFECTED by any terms of kind referred to in clause 18(2) of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, that have been imposed as a condition of consent to a development application granted after 11 October, 2007 in respect of the land.

16. Site compatibility certificates for infrastructure

The land IS NOT AFFECTED by a valid site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Infrastructure) 2007.

17. Site compatibility certificates and conditions for affordable rental housing

The land IS NOT AFFECTED by a valid site compatibility certificate (of which the Council is aware) issued under the State Environmental Planning Policy (Affordable Rental Housing) 2009.

18. Paper subdivision information

The land is NOT AFFECTED by any development plan that applies to the land or that is proposed to be subject to a consent ballot.

Note: *There are no matters prescribed by section 59(2) of the Contaminated Land Management Act 1997 to be disclosed, however if other contamination information is held by the Council this may be provided under a section 149(5) certificate.*

PART 2:

ADVICE PROVIDED UNDER SECTION 149(5)

ATTENTION: Section 149(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 149(5).

19. Outstanding written request issued by Council.

Council records indicate that this premise IS NOT AFFECTED by a current notice or order (excluding the notices or orders mentioned in the note below).

NOTE: The Council has not inspected the premises immediately prior to the issue of this certificate. It is possible that the premises are affected by matters of which the Council is unaware.

NOTE: This Certificate does not include any advice regarding outstanding notices or orders issued under the Environmental Planning and Assessment Act 1979 or the Local Government Act 1993. To obtain advice regarding these matters, you should lodge an application for a Certificate as to Outstanding Notices and Orders (accompanied by the appropriate fee). For further information, please contact the Customer Enquiry Centre on (02) 4974 2000.

20. Heritage Items

There are no heritage items listed in Clause 21 to the State Environmental Planning Policy (Major Development) Amendment (Three Ports) 2009 situated on the land.

21. Suspension of covenants, agreements and instruments

For the purpose of enabling development on land within the Three Ports Site to be carried out in accordance with Part 20 of Schedule 3 of State Environmental Planning Policy (Major Development) 2005 or with a development consent granted under the Act, any agreement, covenant or other similar instrument that restricts the carrying out of that development does not apply to the extent necessary to serve that purpose.

Clause 19 of State Environmental Planning Policy (Major Development) Amendment (Three Ports) 2009 does not apply:

(a) to a covenant imposed by the relevant council or that the relevant council requires to be imposed, or

(b) to any prescribed instrument within the meaning of section 183A of the Crown Lands Act 1989, or

(c) to any conservation agreement within the meaning of the National Parks and Wildlife Act 1974, or

(d) to any Trust agreement within the meaning of the Nature Conservation Trust Act 2001. orl

(e) to any property vegetation plan within the meaning of the Native Vegetation Act 2003, or

(f) to any biobanking agreement within the meaning of Part 7A of the Threatened Species Conservation Act 1995, or

(g) to any planning agreement within the meaning of Division 6 of Part 4 of the Act.

Clause 19 does not affect the rights or interests of any public authority under any instrument.

22. Unexhibited proposed environmental planning instruments.

The land IS NOT AFFECTED by a resolution of the Council to endorse a planning proposal which has yet to have a gateway determination pursuant to section 56(2) of the Act.

23. Draft development control plans.

A draft development control plan DOES NOT APPLY to the land. The draft plans are exhibited pursuant to Part 3 of the Environmental Planning and Assessment Regulation 2000.

24. Heritage Act 1977.

The land IS NOT AFFECTED by a listing on the State Heritage Register or an Interim Heritage Order that is in force under the Heritage Act 1977.

NOTE: The above advice is provided to the extent that Council has been notified by the Heritage Council of NSW. For up-to-date details, contact the Office of Environment and Heritage, PO Box A290, South Sydney NSW 1232 Ph: (02) 9995 5000.

25. Listing by National Trust of Australia.

The land IS NOT AFFECTED by a listing of the National Trust of Australia (NSW).

NOTE: The above advice is provided to the extent that Council has been notified by the National Trust of Australia (NSW). For up-to-date details, contact the National Trust.

26. Australian Heritage Database.

The land IS NOT AFFECTED by a listing on the Australian Heritage Database.

NOTE: The above advice is provided to the extent that Council has been notified by the Department of the Environment, Heritage, Water and the Arts. For up-to-date details, contact the Department of the Environment, Heritage, Water and the Arts, King Edward Terrace, Parkes ACT 2600. Ph (02) 6274 1111.

27. Environment Protection & Biodiversity Conservation Act 1999 (Cth)

Under the (Commonwealth) Environment Protection and Biodiversity Conservation Act 1999, actions which have, may have or are likely to have, a significant impact on a matter of national environmental significance may be taken only with the approval of the Commonwealth Minister for the Environment.

Approval is also required for actions that have a significant effect on the environment of Commonwealth land. These actions may be on Commonwealth land or other land.

This approval is in addition to any approvals under the (NSW) Environmental Planning and Assessment Act 1979 or other NSW legislation.

Matters of national environmental significance are:

- declared World Heritage areas
- declared Ramsar wetlands
- listed threatened species and ecological communities
- listed migratory species
- nuclear actions
- the environment of Commonwealth marine areas.

Locations within the City of Newcastle that are a declared Ramsar wetland include Kooragang Nature Reserve and Shortland Wetlands. Listed threatened species and listed migratory species are known to occur within the City of Newcastle.

28. Other matters

The land is affected by the following:

Newcastle earthquake

Earthquakes occurred in the vicinity of Newcastle on 28th December 1989 and 6 August 1994. Buildings on the land may have suffered damage as a consequence of the earthquakes. Prospective purchasers are advised to make their own enquiries as to whether the property is affected by any damage.

Newcastle Urban Strategy (Updated 2009)

The Newcastle Urban Strategy was adopted by the Council on 11 March 1998 and updated on 15 December 2009. The contents of the Strategy will be taken into account when the Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document. www.newcastle.nsw.gov.au

Lower Hunter Regional Strategy (2006 - 2031)

The Lower Hunter Regional Strategy has been prepared by the Department of Planning and Infrastructure. The contents of the strategy will be taken into account when Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document. www.newcastle.nsw.gov.au

Newcastle City-Wide Floodplain Risk Management Study and Plan (2012)

The Newcastle City-wide Floodplain Risk Management Study and Plan addresses flood management for the City of Newcastle. The Study and Plan will be taken into account when Council assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

Note: Refer to Council's website to view the document www.newcastle.nsw.gov.au.

Issued without alterations or additions, 20/03/14

for:
KEN GOULDTHORP
GENERAL MANAGER

Appendix D

Aerial Photographs

1954

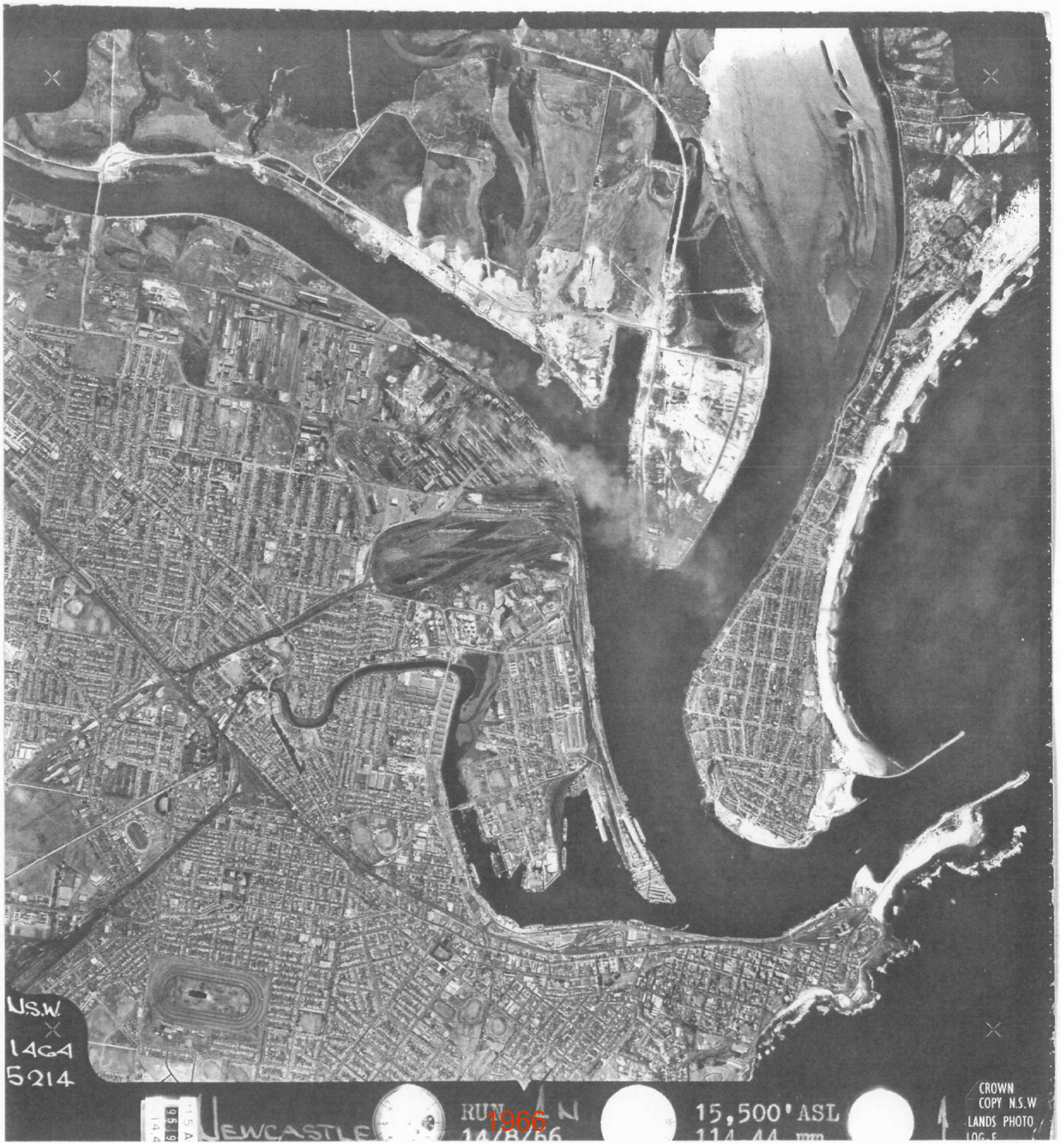

NSW·252-5055
NEWCASTLE RUN 4 22·7·54 LENS 26707 8 152·28 M/M 15500'
ADASTRAPHOTO
RESTRICTED

1954

I-SW-252-5055

1954

1954


N.S.W
1464
5214
NEWCASTLE
RUN N
14/8/66
15,500' ASL
114.44 mm
CROWN
COPY N.S.W
LANDS PHOTO
1966

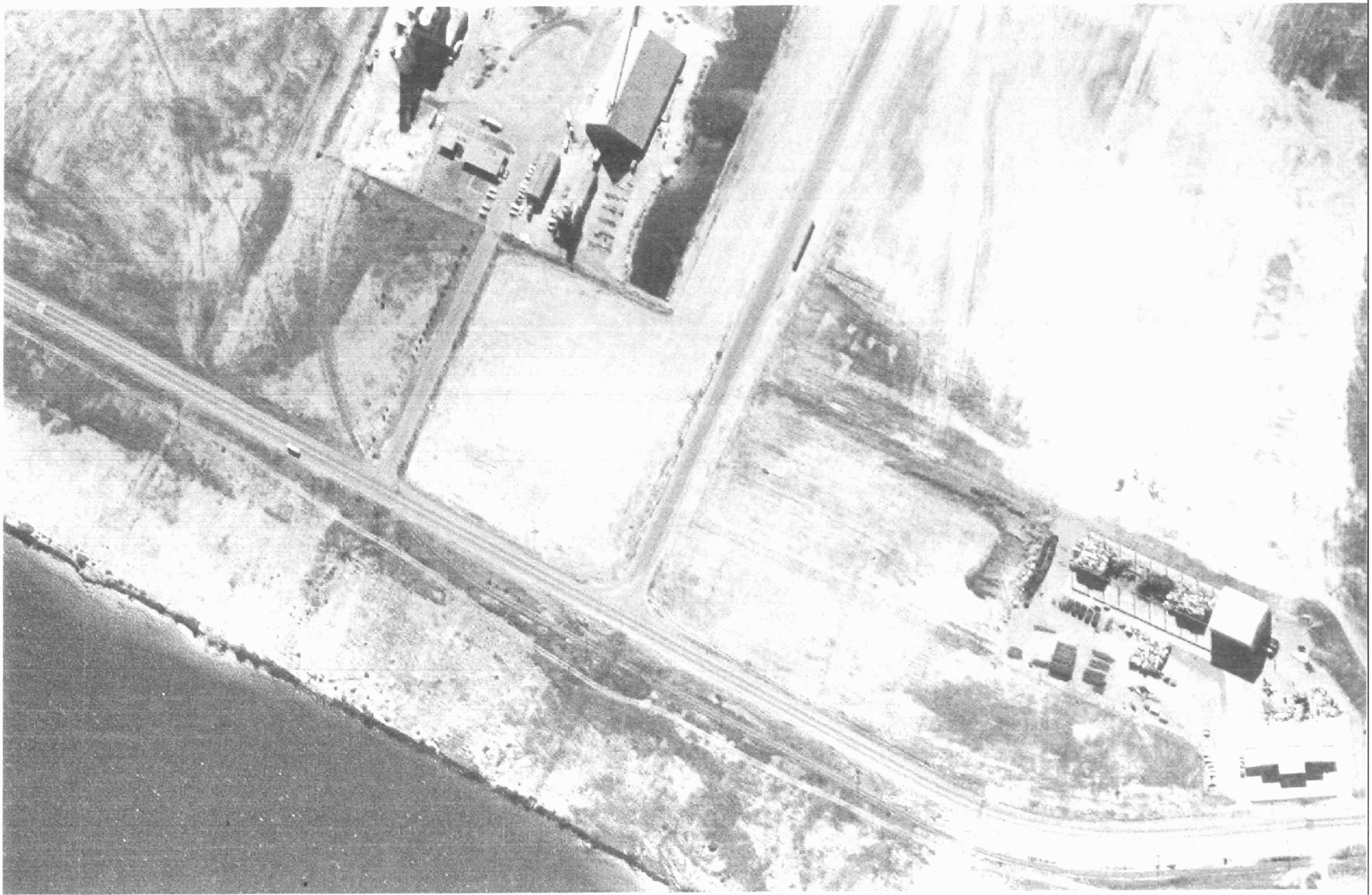

1966

1966


UAg 1025 151.45
1975
NSW
2314
134
NEWCASTLE
NSW 2314
RUN 7
27.5.75
6401 M ASL
151.45 MM
1ST COPY
CROWN
COPY N.S.W
LANDS PHOTO
LOG-E

1975

1975



1975


1983
MSN
3334
36

1983

1983

1983

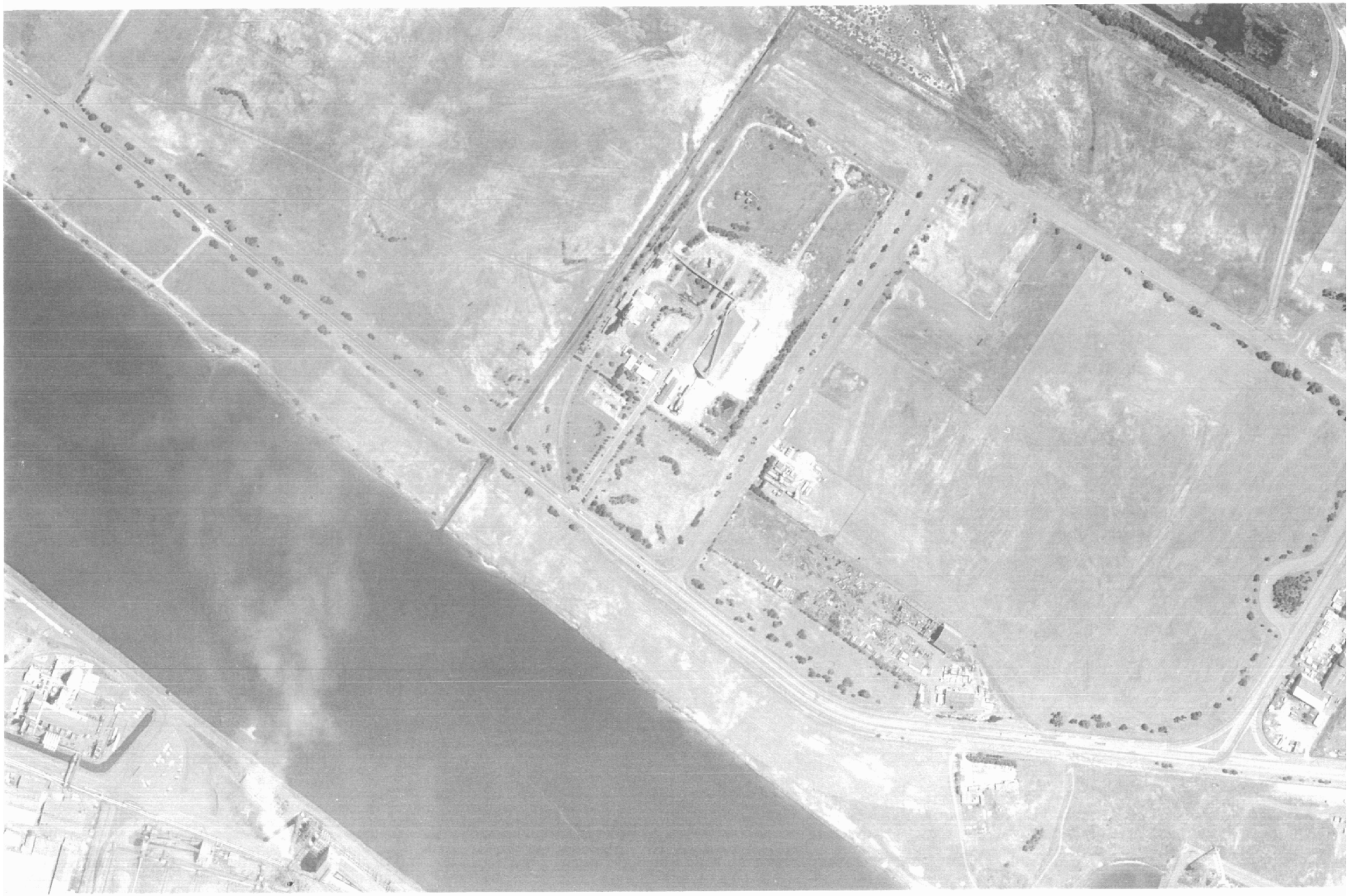
1993

NEWCASTLE
1:25000 APPROX. SCAL.
NSW4116 (COLOUR)

RUN 10
25-2-93
69-86

3932 M ASL
151.45MM

1993



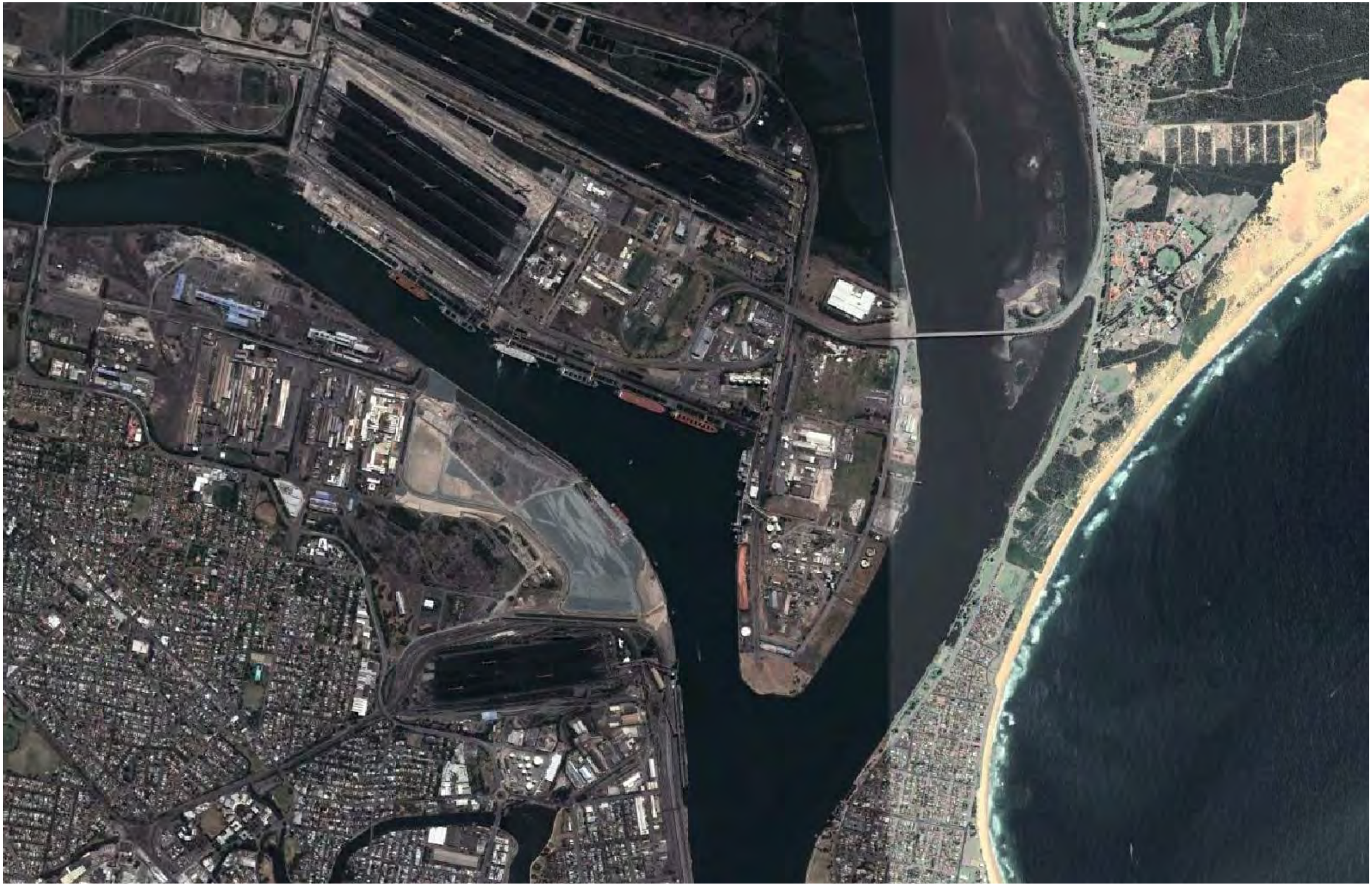
1993

1993

2004

2007

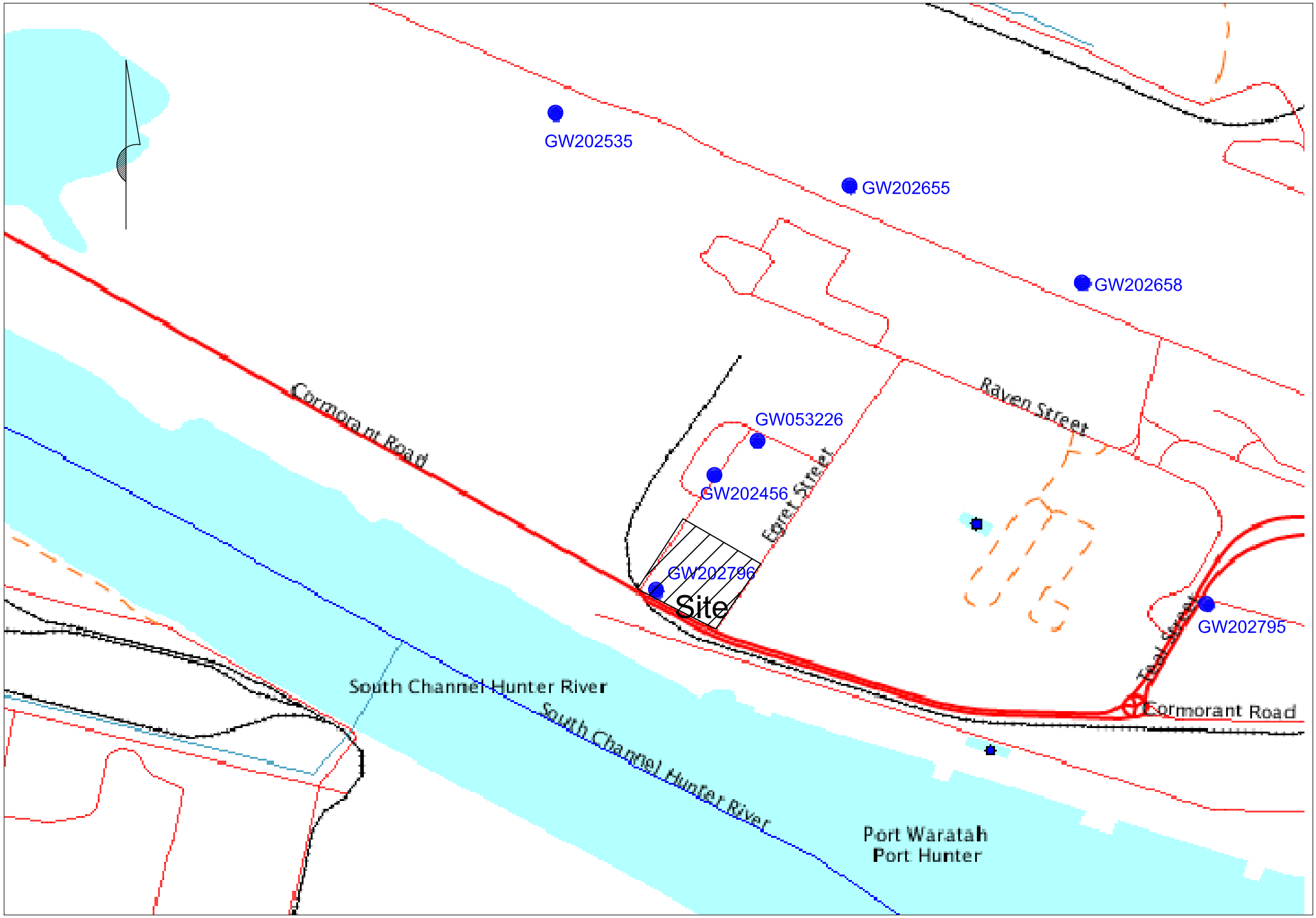
2010



2013

Appendix E

Groundwater Bore Search


GW202535
GW202655
GW202658
GW053226
GW202456
GW202796
Site
GW202795
Cormorant Road
Raven Street
Egret Street
Teal Street
Cormorant Road
South Channel Hunter River
South Channel Hunter River
Port Waratah
Port Hunter

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW053226

Works Details (top)

GROUNDWATER NUMBER	GW053226
LIC-NUM	20BL117398
AUTHORISED-PURPOSES	INDUSTRIAL
INTENDED-PURPOSES	INDUSTRIAL
WORK-TYPE	Spear
WORK-STATUS	Supply Obtained
CONSTRUCTION-METHOD	Rotary Air
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	1981-03-01
FINAL-DEPTH (metres)	4.60
DRILLED-DEPTH (metres)	0.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2S
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	6361236.00
EASTING	384293.00
LATITUDE	32 52' 51"
LONGITUDE	151 45' 47"
GS-MAP	0053D4

AMG-ZONE	56
COORD-SOURCE	GD.,ACC.MAP
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	L1 DP594332 (51)

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	NOT AVAILABLE

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1	1	Casing	P.V.C.	0.00	4.60	50			Seated on Bottom
1	1	Opening	Screen	4.00	4.50	50		1	Stainless Steel; SL: 0mm; A: 0mm

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
2.00	4.50	2.50	(Unknown)	2.00					(Unknown)

Drillers Log (top)

no details

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW200456

Works Details (top)

GROUNDWATER NUMBER	GW200456
LIC-NUM	20BL168957
AUTHORISED-PURPOSES	INDUSTRIAL (LOW SECURITY)
INTENDED-PURPOSES	IRRIGATION
WORK-TYPE	Bore
WORK-STATUS	
CONSTRUCTION-METHOD	Auger - Hollow Flight
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	2003-09-30
FINAL-DEPTH (metres)	10.50
DRILLED-DEPTH (metres)	10.50
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	2.00
SALINITY	
YIELD	6.00

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6361165.00
EASTING	384217.00
LATITUDE	32 52' 54"
LONGITUDE	151 45' 44"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	Map Interpretation
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	12/1032146

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	12 1032146

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	10.50	180			Auger - Hollow Flight
1	1	Casing	PVC Class 9	0.00	10.50	60	55		Glued; Seated on Bottom; Cap
1	1	Opening	Slots - Vertical	9.30	10.50	60			PVC Class 9; Casing - Drilled Holes; SL: 1.2mm; A: 1.2mm
1		Annulus	Waterworn/Rounded	9.80	10.50				Graded; GS: 3.5-5mm; Q: 20m³

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
6.50	10.50	4.00		2.00		6.00		1.50	

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	5.00	5.00	sand (grey)		
5.00	7.00	2.00	mud (grey with shells)		
7.00	10.50	3.50	sand (amber)		

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW202535

Works Details (top)

GROUNDWATER NUMBER	GW202535
LIC-NUM	20BL173255
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	Equipped - bore used for obs
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Mines
COMMENCE-DATE	
COMPLETION-DATE	2012-06-29
FINAL-DEPTH (metres)	3.60
DRILLED-DEPTH (metres)	3.60
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	KOORAGANG COAL TERMINAL
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2N
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6361929.00
EASTING	383924.00
LATITUDE	32 52' 29"
LONGITUDE	151 45' 33"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	GIS - Geographic Information System
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1//1119752

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1 775775

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	3.60	150			Auger - So Flight
1	1	Casing	PVC Class 18	0.00	0.60	58	50		Screwed; Seated on Bottom; En cap
1	1	Opening	Slots - Horizontal	0.60	3.60	58			PVC Class 18; Mechanica Slotted; SL 30mm; A: .5mm; Screwed
1		Annulus	Bentonite	0.00	0.30	150	58		
1		Annulus	Waterworn/Rounded	0.30	3.60	150	58		Graded; GS 2-5mm

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
0.00	1.60	1.60							

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	1.00	1.00	Fill; grey, fine-medium grained sand, with some silt &		

			trace subangular gravel (up to 40mm), moist
1.00	1.60	0.60	Fill; as above, some clay
1.60	3.30	1.70	Clay; soft to firm, dark grey silty clay with trace fine-medium grained sand
3.30	3.60	0.30	Clay; as above, from approx 3.3-3.5m, very soft dark grey/grey mottled brown clay, trace organics

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW202655

Works Details (top)

GROUNDWATER NUMBER	GW202655
LIC-NUM	20BL173444
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	Equipped - bore used for obs
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Mines
COMMENCE-DATE	
COMPLETION-DATE	1996-07-15
FINAL-DEPTH (metres)	11.30
DRILLED-DEPTH (metres)	11.30
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	0.60
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2S
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6361781.00
EASTING	384453.00
LATITUDE	32 52' 34"
LONGITUDE	151 45' 53"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	GPS - Global Positioning System
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1//775775

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1 775775

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	3.00	150			Auger - Solid Flight
1		Hole	Hole	3.00	11.30	150			Rot. Rev. Circ Mud
1	1	Casing	PVC Class 18	0.00	8.30	58	50		Screwed; Seated on Bottom; End cap
1	1	Opening	Slots - Horizontal	8.30	11.30	58			PVC Class 18; Mechanically Slotted; SL: 30mm; A: .5mm; Screwed
1		Annulus	Drill Cuttings	0.00	3.50	150	58		Ungraded
1		Annulus	Bentonite	3.50	5.60	150	58		
1		Annulus	Drill Cuttings	5.60	11.30	150	58		Ungraded

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
0.00	3.30	3.30		0.60					
7.00	11.30	4.30							

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	0.60	0.60	Grave; moist, grey, dense, coarse sandy (slag fill)		
0.60	3.30	2.70	Sand; moist, light brown, loose to medium dense, medium grained (dredged sand fill)		
3.30	3.50	0.20	Clay; wet, black, soft, sandy (alluvium)		
3.50	5.60	2.10	Clay; wet, black, firm, with some silt (alluvium)		
5.60	6.50	0.90	Sand; wet, dark grey, loose, fine to medium grained, with clay & some shells (alluvium)		
6.50	11.30	4.80	Sand; wet, light grey, fine grained, very dense (alluvium)		

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW202658

Works Details (top)

GROUNDWATER NUMBER	GW202658
LIC-NUM	20BL173444
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	Equipped - bore used for obs
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Mines
COMMENCE-DATE	
COMPLETION-DATE	1996-07-19
FINAL-DEPTH (metres)	2.20
DRILLED-DEPTH (metres)	2.20
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2S
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6361582.00
EASTING	384877.00
LATITUDE	32 52' 40"
LONGITUDE	151 46' 10"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	GPS - Global Positioning System
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1//775775

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	1 775775

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	2.20	140			Auger - Solid Flight
1	1	Casing	PVC Class 18	0.00	0.70	58	50		Screwed; Seated on Bottom; End cap
1	1	Opening	Slots - Horizontal	0.70	2.20	58			PVC Class 18; Mechanically Slotted; SL: 30mm; A: .5mm; Screwed
1		Annulus	Crushed Aggregate	0.00	2.20	140	58		Ungraded

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
0.00	2.20	2.20							

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	0.20	0.20	Sand; moist, brown, loose, silty (topsoil)		
0.20	0.40	0.20	Gravel; moist, grey, dense, coarse grained, with		

			some sand & cobbles (slag fill)
0.40	2.20	1.80	Sand; moist, light brown, medium grained, dense (dredged fill), varying to wet ~1.4m

Groundwater Works Summary

For information on the meaning of fields please see Glossary
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Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW202795

Works Details (top)

GROUNDWATER NUMBER	GW202795
LIC-NUM	20BL173346
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	Equipped - bore used for obs
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	2012-10-29
FINAL-DEPTH (metres)	5.50
DRILLED-DEPTH (metres)	7.45
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2S
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6360901.00
EASTING	385108.00
LATITUDE	32 53' 2"
LONGITUDE	151 46' 18"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	GPS - Global Positioning System
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	Rd Adj 14//1144748

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	14 1144748

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	7.00	110			Auger - So Flight
1	1	Casing	PVC Class 18	0.00	2.50	58	50		Screwed; Seated on Bottom; En cap
1	1	Opening	Slots - Horizontal	2.50	5.50	58			PVC Class 18; Mechanica Slotted; SL 30mm; A: .5mm; Screwed
1		Annulus	Bentonite/Grout	0.00	2.10	110	58		
1		Annulus	Waterworn/Rounded	2.10	5.50	110	58		Graded; GS 5-5mm

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
2.80	7.00	4.20							

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	1.80	1.80	Fill		
1.80	2.70	0.90	Clay, silty sandy		

2.70	7.45	4.75	Sand

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Monday, March 24, 2014

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW202796

Works Details (top)

GROUNDWATER NUMBER	GW202796
LIC-NUM	20BL173347
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	Equipped - bore used for obs
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	2012-10-29
FINAL-DEPTH (metres)	5.40
DRILLED-DEPTH (metres)	5.40
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

Site Details (top)

REGION	20 - HUNTER
RIVER-BASIN	210 - HUNTER RIVER
AREA-DISTRICT	
CMA-MAP	9232-2S
GRID-ZONE	56/1
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6360917.00
EASTING	384119.00
LATITUDE	32 53' 2"
LONGITUDE	151 45' 40"
GS-MAP	

AMG-ZONE	56
COORD-SOURCE	GPS - Global Positioning System
REMARK	

Form-A (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	10//1144748

Licensed (top)

COUNTY	NORTHUMBERLAND
PARISH	NEWCASTLE
PORTION-LOT-DP	10 1144748

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter;
ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	5.40	110			Auger - So Flight
1	1	Casing	PVC Class 18	0.00	2.40	58	50		Screwed; Seated on Bottom; En cap
1	1	Opening	Slots - Horizontal	2.40	5.40	58			PVC Class 18; Mechanica Slotted; SL 30mm; A: .5mm; Screwed
1		Annulus	Bentonite/Grout	0.00	2.10	110	58		
1		Annulus	Waterworn/Rounded	2.10	5.40	110	58		Graded; GS 5-5mm

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
2.50	5.40	2.90							

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	2.00	2.00	Fill		
2.00	2.70	0.70	Clay; sandy silty		

2.70	5.40	2.70	Sand

Appendix F

Test Pit/Bore Logs

ENVIRONMENTAL BOREHOLE LOG

MW1

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE COMMENCED: 08/05/2014
DATE COMPLETED: 08/05/2014
SURFACE RL:
COORDS:
DRILL MODEL: 4WD Mounted Rig
DRILLER NAME:

Borehole Information					Field Material Information						
METHOD	WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	BORE CONSTRUCTION
				0.10		TOPSOIL/FILL, SAND, fine to medium grained, brown, with some shell fragments		SM		Concrete
						FILL, SAND, fine to medium grained, pale brown, with some shell fragments				Bentonite
				0.5						
				1.0						
				1.5						Gravel
	▽			2.0						
				2.50		FILL, SAND, fine to medium grained, grey, with some shell fragments		S		
				3.0						
				3.5						Screen
				4.00		FILL, Sandy CLAY, low plasticity, dark grey Sulfuric odour				
				4.5						
				5.00		BOREHOLE MW1 TERMINATED AT 5.00 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL BOREHOLE LOG

MW2

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE COMMENCED: 08/05/2014
DATE COMPLETED: 08/05/2014
SURFACE RL:
COORDS:
DRILL MODEL: 4WD Mounted Rig
DRILLER NAME:

Borehole Information					Field Material Information						
METHOD	WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	BORE CONSTRUCTION
	▽			0.10		TOPSOIL/FILL, SAND, fine to medium grained, brown, with some shell fragments		SM		Concrete
				0.5		FILL, SAND, fine to medium grained, pale grey, with some shell fragments				Bentonite
				1.0						
				1.30		FILL, Sandy CLAY, low plasticity, dark brown				
				1.40		FILL, SAND, fine to medium grained, pale grey, with some shell fragments				Gravel
				1.5						
				2.0						
				2.5						
				2.70		FILL, SAND, fine to medium grained, grey, with shell fragments		S		
				3.0						
				3.5						Screen
				4.00		FILL, Sandy CLAY, low plasticity, dark grey, fine to medium grained sand				
				4.5						
				4.70		BOREHOLE MW2 TERMINATED AT 4.70 m				
				5.0						

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL BOREHOLE LOG

MW3

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE COMMENCED: 08/05/2014
DATE COMPLETED: 08/05/2014
SURFACE RL:
COORDS:
DRILL MODEL: 4WD Mounted Rig
DRILLER NAME:

Borehole Information					Field Material Information						
METHOD	WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	BORE CONSTRUCTION	
				0.10		TOPSOIL/FILL, SAND, fine to medium grained, brown		SM			
						FILL, SAND, fine to medium grained, pale grey, with some shell fragments					Concrete
				0.5							Bentonite
				1.0							
				1.5							Gravel
				2.0							
	▽			2.50		FILL, SAND, fine to medium grained, grey, with shell fragments		S			
				2.80		FILL, Silty CLAY, low plasticity, dark grey/black					
				2.90		FILL, SAND, fine to medium grained, dark grey, with shell fragments					
				3.0							
				3.5							Screen
				4.00		FILL, Sandy CLAY, low plasticity, dark grey, fine to medium grained sand, with some vegetive matter					
				4.5							
				5.00		BOREHOLE MW3 TERMINATED AT 5.00 m					

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG
TP1

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m TP1a QA1 0.30m	0.5		FILL, SAND, medium grained, pale brown, with shell fragments		M		FILL Sample part of composite 1
		0.90m TP1b 1.10m 1.20m	1.0						
		TP1c 1.30m	1.20		FILL, CLAY, black				
			1.30		FILL, SAND, fine to medium grained, pale brown				
		1.90m	1.5						
		TP1d 2.10m	1.90		FILL, CLAY, dark grey				
			2.10		FILL, SAND, fine to medium grained, brown mottled grey				
▽			2.5						
		3.00m TP1e 3.10m	3.0		Becoming saturated at 2.9m		S		
			3.10		TEST PIT TP1 TERMINATED AT 3.10 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG
TP2

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP2a							Sample part of composite 1
		0.40m	0.5						
		0.90m							
		TP1b	1.0						
		1.10m							
		1.20m	1.20						
		TP2c 1.30m	1.30		FILL, Silty SAND, fine grained, dark brown mottled orange				
		TP2d	1.5		FILL, SAND, fine to medium grained, brown				
		1.95m	1.95						
			2.00		FILL, Silty CLAY, dark grey				
▼					FILL, SAND, fine to medium grained, dark grey		W		
		2.20m							
		TP2e							
		2.40m	2.5						
▽			3.00		TEST PIT TP2 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP3

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, fine to medium grained, pale brown grey		M		FILL
		TP3a QA2							
		0.40m							
			0.5						
		0.90m							
		TP3b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP3c							
		2.10m	2.0						
			2.20		FILL, SAND, fine to medium grained, dark grey				
		2.40m	2.40		FILL, SILT, with organic matter				
		TP3d 2.50m	2.50		FILL, Sandy CLAY, dark grey		W		
		TP3e			Shell fragments from 2.6m to 2.7m				
		2.70m	2.70		FILL, SAND, fine to medium grained, dark grey, with shell fragments				
		2.80m							
		TP3f							
▽		3.00m	3.0						
			3.10		TEST PIT TP3 TERMINATED AT 3.10 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG
TP4

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, brown		M		FILL
		TP4a QA3							
		0.40m							
			0.5						
		0.90m							
		TP4b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP4c							
		2.10m	2.0						
			2.5						
		2.80m	2.80		FILL, SAND, fine to medium grained, grey, with shell fragments				
		TP4d							
▽		3.00m	3.0				W		
			3.20		TEST PIT TP4 TERMINATED AT 3.20 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP5

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, fine to medium grained, pale brown/yellow, with shell fragments		M		FILL
		TP5a							
		0.40m	0.5						
		0.90m			Becoming pale brown at 0.8m				
		TP5b	1.0						
		1.10m							
		1.90m	1.5						
		TP5c	2.0						
		2.10m							
		2.90m	2.5						
		TP5d	2.90		FILL, SAND, fine to medium grained, dark grey, with shell fragments		W		
▽		3.10m	3.0						
			3.20		TEST PIT TP5 TERMINATED AT 3.20 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP6

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP6a QA4							
		0.40m							
			0.5						
		0.90m							
		TP6b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP6c							
		2.10m	2.0						
			2.5						
		2.90m							
▽		TP6d	3.00		FILL, SAND, medium grained, pale grey/grey, with shell fragments		W		
		3.10m							
			3.20		TEST PIT TP6 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP7

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
			0.05		TOPSOIL/FILL, SAND, fine grained, brown		M		TOPSOIL / FILL
					FILL, SAND, medium grained, pale brown, with shell fragments				FILL
		0.20m							
		TP7a							
		0.40m							
			0.5						
		0.90m							
		TP7b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP7c							
		2.10m	2.0						
			2.5						
		2.70m							
		TP7d	2.70		FILL, SAND, medium grained, grey				
▽		2.80m							
		TP7e	2.80		FILL, Sandy CLAY, high plasticity, dark grey		W		
		2.90m	2.90						
					TEST PIT TP7 TERMINATED AT 2.90 m				
			3.0						

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP8

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP8a							
		0.40m	0.5						
		0.90m							
		TP8b	1.0						
		1.10m							
		1.90m	1.5						
		TP8c							
		2.10m	2.0						
			2.5						
▽		3.00m	3.0		Layer of vegetive matter mixed with sand, grey at 3.0m to 3.1m		S		
		TP8d 3.10m	3.10		FILL, SAND, medium grained, grey				
		TP8e 3.20m	3.20		TEST PIT TP8 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP9

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
			0.05		TOPSOIL/FILL, Silty SAND, fine grained, brown		M		TOPSOIL / FILL
					FILL, SAND, medium grained, brown, with shell fragments				FILL
		0.20m TP9a QA5 0.30m							
			0.5						
		0.90m TP9b 1.10m	1.0						
			1.5						
		1.90m TP9c 2.10m	2.0						
			2.5						
▽			2.60		FILL, SAND, medium grained, dark grey, shell fragments and coal up to 30mm diameter		W		
		2.80m TP9d 3.00m							
			3.00		TEST PIT TP9 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP10

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP10a							Sample part of composite 1
		0.40m	0.5						
		0.90m							
		TP10b	1.0						
		1.10m							
		1.90m	1.5						
		TP10C	2.0						
		2.10m							
		2.90m	2.5						
▽		TP10d	3.00		FILL, SAND, medium grained, dark grey, with silt, shell fragments and coal fragments		W		
		3.10m	3.10		TEST PIT TP10 TERMINATED AT 3.10 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP11

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, Silty SAND, medium grained, brown, with coarse grained, angular to sub angular gravel,		M		FILL
		TP11a QA6(i) 0.40m	0.30		FILL, SAND, medium grained, pale brown				Sample part of composite 1
			0.5						
		0.90m							
		TP11b 1.10m	1.0						
			1.5						
		1.90m							
		TP11c 2.10m	2.0						
			2.20		FILL, SAND, medium grained, dark grey, with coal fines and shell fragments				
			2.5						
		2.60m							
		TP11d 2.80m			Becoming wet/saturated at 2.8m				
▽			2.80		TEST PIT TP11 TERMINATED AT 2.80 m				
			3.0						

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP12

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					FILL, SAND, medium grained, pale brown, with some vegetable matter and some shell fragments		M		FILL
		0.20m							
		TP12a							
		0.40m							
			0.5						
		0.90m							
		TP12b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP12c			Becoming with some dark brown sand				
		2.10m	2.0						
			2.5						
		2.80m							
		TP12d							
▽			3.00		FILL, SAND, medium grained, grey/pale grey, with shell fragments		W		
		3.10m							
			3.20		TEST PIT TP12 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP13

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, brown/dark brown		M		FILL
		TP13a	0.30						
		0.40m			FILL, SAND, medium grained, light brown				
			0.5						
		0.90m							
		TP13b	1.0						
		1.10m							
			1.5						
		1.90m							
		TP13c	2.0						
		2.10m							
			2.5						
		2.80m							
		TP13d							
▽		3.00m	3.00		FILL, SAND, medium gained, grey, with shell fragments and highly weathered coal fragments		W		
			3.20		TEST PIT TP13 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP14

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m TP14a 0.30m	0.30		TOPSOIL/FILL, SAND, medium grained, brown		M		TOPSOIL / FILL
			0.5		FILL, SAND, medium grained, pale brown				FILL
		0.90m TP14b 1.10m	1.0						
			1.5						
		1.90m TP14c 2.10m	2.0				M / W		
			2.5						
▽		2.70m TP14d 2.90m	2.80		FILL, SAND, medlum grained, grey mottled brown		W		
			2.90		TEST PIT TP14 TERMINATED AT 2.90 m				
			3.0						

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP15

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 02/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m TP15a QA6 0.30m	0.30		FILL, SAND, medium grained, brown, with shell fragments		M		FILL
			0.5		FILL, SAND, medium grained, pale brown, with shell fragments				
		0.90m TP15b 1.10m	1.0						
			1.5						
		1.90m TP15c 2.10m	2.0						
			2.5						
▽		2.80m TP15d 3.00m	2.80		FILL, SAND, medium grained, grey, with shell fragments		W		
			3.00		TEST PIT TP15 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP16

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					FILL, SAND, medium grained, pale brown		SM		FILL
		0.20m							
		TP16a							
		0.40m							
			0.5						
		0.90m							
		TP16b							
		1.10m	1.0		Becoming significant shell fragments				
			1.5						
		1.90m							
		TP16c							
		2.10m	2.0		Becoming with some shell fragments				
			2.5						
		2.70m							
			2.70		FILL, Silty CLAY, black, with some sand				
		TP16d 2.80m							
			2.80		FILL, SAND, medium grained, grey, with significant shell fragments		W		
▽		3.00m							
		TP16e 3.10m	3.0						
			3.20		TEST PIT TP16 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP17

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, brown		M		FILL
		TP17a 0.30m							
			0.5						
		0.90m							
		TP17b 1.10m	1.0		Becoming pale brown, with shell fragments				
			1.5						
		1.90m							
		TP17c 2.10m	2.0						
			2.5						
		2.90m							
▽		TP17d	3.00		FILL, SAND, medium grained, grey, with shell fragments		S		
		3.20m	3.20		TEST PIT TP17 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP18

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, Silty SAND, fine grained, brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, pale brown				FILL
		0.20m TP18a 0.30m							Sample part of composite 2
			0.5						
		0.90m TP18b 1.10m	1.0						
			1.5						
		1.90m TP18c 2.10m	2.0						
			2.5						
▽		3.00m TP18d QA7 3.10m	3.00		FILL, SAND, medium grained, grey, shell fragments		W		
			3.20		TEST PIT TP18 TERMINATED AT 3.20 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP19

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown, with shell fragments		M		FILL
		TP19a							
		0.40m							Sample part of composite 2
			0.5						
		0.90m							
		TP19b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP19c							
		2.10m	2.0						
			2.5						
▶		2.70m	2.70		FILL, SAND, medium grained, dark grey		W		
		TP19d							
		2.90m							
▽			3.00		TEST PIT TP19 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP20

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, medium grained, brown, with silt		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, brown, with shell fragments				FILL
		0.20m							
		TP20a							Sample part of composite 2
		0.40m							
			0.5						
		0.90m							
		TP20b							
		1.10m	1.0		Becoming pale brown				
			1.5						
		1.90m							
		TP20c							
		2.10m	2.0						
			2.5						
		2.90m							
▽		TP20d	3.00		FILL, SAND, medium gained, grey, with shell fragments		W		
		3.10m							
			3.20		TEST PIT TP20 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP21

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale grey		M		FILL
		TP21a QA8							Sample part of composite 2
		0.40m	0.5						
		0.90m							
		TP21b	1.0						
		1.10m							
			1.5						
		1.90m							
		TP21c	2.0						
		2.10m							
			2.5						
		2.90m							
▽		TP21d	3.00		FILL, SAND, fine to medium grained, grey with shell fragments		W		
		3.10m							
			3.20		TEST PIT TP21 TERMINATED AT 3.20 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP22

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, brown				FILL
		0.20m TP22a 0.30m							
			0.5						
		0.90m TP22b 1.10m	1.0						
			1.20		FILL, Silty Sandy CLAY, black/dark brown				
			1.30		FILL, SAND, medium grained, pale brown, with shell fragments				
			1.5						
		1.90m TP22c 2.10m	2.0						
			2.5		Becoming saturated at 2.8m				
		2.90m	2.90		FILL, SAND, medium grained, grey, with shell fragments		W		
▽		TP22d 3.10m	3.0						
			3.20		TEST PIT TP22 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP23

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, pale brown				FILL
		0.20m							
		TP23a QA9							
		0.40m							
			0.5						
		0.90m							
		TP23b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP23c							
		2.10m	2.0		Becoming saturated at 2.0m				
			2.5						
		2.90m							
▽		TP23d	3.00		FILL, SAND, medium grained, grey		W		
		3.10m							
			3.20		TEST PIT TP23 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP24

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP24a							
		0.40m							
			0.5						
		0.90m							
		TP24b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP24c							
		2.10m	2.0						
		2.50m	2.50						
		TP24d			FILL, Silty CLAY, black, with fine grained sand				Sulfuric odour at 2.5m
▽		2.60m	2.60				W		
					FILL, SAND, medium grained, grey, with shell fragments				
		2.80m							
		TP24e							
		3.00m	3.00						
					TEST PIT TP24 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP25

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, Silty SAND, fine grained, brown		M		TOPSOIL / FILL
		0.20m	0.20						
		TP25a			FILL, SAND, medium grained, light brown				FILL
		0.40m							
			0.5						
		0.90m							
		TP25b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP25c							
		2.10m	2.0						
		2.50m	2.50						
		TP25d			FILL, Silty CLAY, with fine grained sand				
▽		2.70m	2.70						
		2.80m			FILL, SAND, medium grained, dark grey		W		
		TP25e							
		3.00m	3.00						
					TEST PIT TP25 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP26

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m			FILL, SAND, medium grained, pale brown		M		FILL
		TP26a QA10							Sample part of composite 3
		0.40m	0.5						
		0.90m							
		TP26b	1.0						
		1.10m							
		1.90m	1.5						
		TP26c	2.0						
		2.10m			Shell fragments appearing at 2.1m				
▽			2.50		FILL, SAND, medium grained, grey to brown, with shell fragments		W		
		2.60m							
		TP26d							
		2.80m							
			3.00		TEST PIT TP26 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP27

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
		0.20m	0.20		TOPSOIL/FILL, SAND, medium grained, brown, with shell fragments		M		TOPSOIL / FILL
		TP27a 0.30m			FILL, SAND, medium grained, brown, with shell fragments				FILL Sample part of composite 3
			0.5						
		0.90m							
		TP27b 1.10m	1.0		Pale brown				
			1.5						
		1.90m							
		TP27c 2.10m	2.0				W		
▽		2.50m	2.50		FILL, SAND, medium grained, grey, with shell fragments				
		TP27d 2.70m	2.70		TEST PIT TP27 TERMINATED AT 2.70 m				
			3.0						

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP28

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, dark brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, pale brown, with shell fragments				FILL
		0.20m							
		TP28a QA11							
		0.40m							
			0.5						
		0.90m							
		TP28b							
		1.10m	1.0		Mottled orange at 1.0m				
			1.5						
		1.90m							
		TP28c							
		2.10m	2.0						
			2.5						
		2.90m							
▽		TP28d	3.00		FILL, SAND, medium grained, grey, with shell fragments		W		
		3.10m							
			3.20		TEST PIT TP28 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP29

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
			0.10		TOPSOIL/FILL, SAND, medium grained, brown		M		TOPSOIL / FILL
		0.20m			FILL, SAND, medium grained, brown, with shell fragments				FILL
		TP29a							
		0.40m							
			0.5						
		0.90m							
		TP29b							
		1.10m	1.0						
		1.50m	1.50						
		TP29c			FILL, SAND, medium gained, dark brown, with shell fragments, some silt				
		1.60m	1.60		FILL, SAND, medium grained, brown, with shell fragments				
		1.90m							
		TP29d							
		2.10m	2.0						
▽							W		
		2.80m							
		TP29e							
		3.00m	2.5						
			3.00		FILL, SAND, medium grained, grey, with shell fragments				
			3.10		TEST PIT TP29 TERMINATED AT 3.10 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP30

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
			0.10		TOPSOIL/FILL, SAND, brown		M		TOPSOIL / FILL
		0.20m			FILL, SAND, medium grained, brown, with shell fragments				FILL
		TP30a							
		0.40m							
			0.5						
		0.90m							
		TP30b							
		1.10m	1.0						
			1.5						
		1.90m							
		TP30c							
		2.10m	2.0		Light brown mottled orange and becoming saturated at 2.0m				
			2.5						
▽		3.00m	3.00						
		TP30d			FILL, SAND, medium grained, grey		W		
		3.20m	3.20						
					TEST PIT TP30 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP31

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, fine grained, brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, brown, with shell fragments				FILL
		0.20m							
		TP31a QA12							Sample part of composite 3
		0.40m							
			0.5						
		0.90m							
		TP31b							
		1.10m	1.0				S		
			1.5						
		1.90m							
		TP31c							
		2.10m	2.0		Becoming light brown at 2m				
			2.5						
▽		2.80m	2.80		FILL, SAND, medium grained, grey				
		TP31d							
		3.00m	3.00						
					TEST PIT TP31 TERMINATED AT 3.00 m				

LOGGED: JG/JC | CHECKED: FB | DATE: 27/05/2014

ENVIRONMENTAL TEST PIT LOG

TP32

SHEET 1 OF 1

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

PROJECT No: 10556
CLIENT: Port of Newcastle Operations
PROJECT: Baseline Environmental Assessment
LOCATION: Cnr Egret St & Cormorant Road, Kooragang Island

DATE: 03/04/2014
SURFACE RL:
COORDS:
EXCAVATION METHOD: 5.5t Excavator

Test Pit Information				Field Material Information						
WATER	FIELD TEST	SAMPLE	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	PID (ppm)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE/AESTHETICS AND ADDITIONAL OBSERVATIONS
					TOPSOIL/FILL, SAND, brown		M		TOPSOIL / FILL
			0.10		FILL, SAND, medium grained, brown, with shell fragments				FILL
		0.20m							
		TP32a							Sample part of composite 3
		0.40m							
			0.5						
		0.90m							
		TP32b							
		1.10m	1.0		Light brown				
			1.5						
		1.90m							
		TP32c							
		2.10m	2.0						
			2.5						
		2.90m							
▽		TP32d	3.00				W		
		3.10m							
					TEST PIT TP32 TERMINATED AT 3.20 m				

LOGGED: JG | CHECKED: FB | DATE: 27/05/2014

Appendix G

Field Sheets

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

ENGINEERING FIELD SHEET

WATER SAMPLING RECORD

CLIENT: NPC
DATE: 14/4/14
PROJECT: Kooringang Island Service Station
PROJECT No: 10556
LOCATION: Car Egret St / Cormorant RD
CLIENT REF:

WATER METER USED: 10650
DATE & TYPE OF LAST CALIBRATION (1PT OR FULL): 14/5/14
METHOD OF SAMPLING: Hand Bailer
PRESERVATION & STORAGE (TICK): Field Temp ☐ Chilled (<4°C) ☑ Frozen ☐
Un-preserved ☑ Preserved: ☐ Acid (H_2SO_4) ☐ Acid (HNO_3) ☐ Alkaline (NaOH) ☐ Filtered ☐
TESTS REQUIRED: TPH, BTEX, PAH, Metals 8.
OTHER DETAILS:

BORE OR LOCATION ID: MW1 (RCA well)
TIME: TO
BORE DEPTH: ~~5.50m~~ 5.07m HEIGHT ABOVE GROUND LEVEL: 0.5m
DEPTH TO AQUIFER: 2.40m VOLUME PURGED: 10 bailer vol
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved (O_2)	Temperature (°C)	Salinity (%)
1/	7.66	0.533	999	0.92	22.1	0.02
2/	7.52	0.495	999	0.60	21.9	0.02
3/	7.57	0.495	999	0.93	21.8	0.02
4/	7.54	0.495	999	0.91	21.8	0.02
5/						
6/						

Sample Appearance: grey, very turbid, slight sulfur odour
Duplicate/Equipment Wash Identification and Other Remarks: equipment washed with Decon 90 & water

BORE OR LOCATION ID: MW2 (RCA well)
TIME: TO
BORE DEPTH: 5.64m HEIGHT ABOVE GROUND LEVEL: 0.52m
DEPTH TO AQUIFER: 2.75m VOLUME PURGED: 10 bailer vol
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved (O_2)	Temperature (°C)	Salinity (%)
1/	7.67	0.555	999	1.41	21.8	0.02
2/	7.52	0.574	999	1.23	21.8	0.02
3/	7.48	0.584	999	1.57	21.8	0.02
4/	7.44	0.579	999	1.68	21.8	0.02
5/						
6/						

Sample Appearance: grey, very turbid, no odour
Duplicate/Equipment Wash Identification and Other Remarks: Equipment washed with Decon 90 & water

RCA Australia	Sampled by: JG	Date: 14/4/14
Office: Currigler		

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

Job No 10558 Date 14/4/14

BORE OR LOCATION ID: MW3 (RCA well)
TIME: TO
BORE DEPTH: 4.96m HEIGHT ABOVE GROUND LEVEL: 0.64m
DEPTH TO AQUIFER: 2.76m VOLUME PURGED: 8 bail vol.
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved (O_2)	Temperature (°C)	Salinity (%)
1/	7.85	0.413	999	2.13	21.6	0.01
2/	7.72	0.407	999	1.94	21.6	0.01
3/	7.72	0.406	999	2.17	21.6	0.01
4/	7.66	0.408	999	2.29	21.5	0.01
5/						
6/						

Sample Appearance: grey/brown, very turbid, No odour
Duplicate/Equipment Wash Identification and Other Remarks: Equipment washed with Decon 90 & water

BORE OR LOCATION ID: MW4 (existing well)
TIME: TO
BORE DEPTH: 5.09m HEIGHT ABOVE GROUND LEVEL: 0.51
DEPTH TO AQUIFER: 2.81m VOLUME PURGED: 9 bailer vol
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved (O_2)	Temperature (°C)	Salinity (%)
1/	7.56	0.715	999	1.64	21.9	0.03
2/	7.48	0.683	999	1.35	21.6	0.02
3/	7.48	0.671	999	1.62	21.6	0.02
4/	7.38	0.700	999	1.07	21.6	0.03
5/						
6/						

Sample Appearance: grey/brown, very turbid, no odour
Duplicate/Equipment Wash Identification and Other Remarks: Equipment washed with Decon 90 & water

BORE OR LOCATION ID:
TIME: TO
BORE DEPTH: HEIGHT ABOVE GROUND LEVEL:
DEPTH TO AQUIFER: VOLUME PURGED:
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved (O_2)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate/Equipment Wash Identification and Other Remarks: NE

Appendix H

External Quality Assurance

Sample Identification	TP3a	QA2	RPD %	TP6a	QA4	RPD %	TP15a	QA6	RPD %	TP11a	QA6(1)	RPD %	TP21a	QA8	RPD %	TP23a	QA9	RPD %
Sample Depth (m)	0.3			0.3			0.3			0.3			0.3			0.3		
Date	2/4/14			2/4/14			2/4/14			3/4/14			3/4/14			3/4/14		
Duplicate Type	Intralaboratory			Interlaboratory			Interlaboratory			Intralaboratory			Intralaboratory			Interlaboratory		
Sample Profile	Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments		
Sample Purpose	Baseline assessment			Baseline assessment			Baseline assessment			Baseline assessment			Baseline assessment			Baseline assessment		
Sample collected by	JG			JG			JG			JG			JG			JG		
Laboratory Reference Number	414510-S			ES1407458001			ES1407458002			414510-S			414510-S			ES1407458003		
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																		
Benzene	0.5	0.5	*0.0*	0.5	0.1	*133.3*	0.5	0.1	*133.3*	0.5	0.5	*0.0*	0.5	0.5	*0.0*	0.5	0.1	*133.3*
Toluene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.25	*66.7*	0.5	0.5	*0.0*	0.5	0.5	*0.0*	0.5	0.25	*66.7*
Ethylbenzene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.25	*66.7*	0.5	0.5	*0.0*	0.5	0.5	*0.0*	0.5	0.25	*66.7*
meta- and para-Xylene	0.1	0.1	*0.0*	0.1	0.25	*85.7*	0.1	0.25	*85.7*	0.1	0.1	*0.0*	0.1	0.1	*0.0*	0.1	0.25	*85.7*
ortho-Xylene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.25	*66.7*	0.5	0.5	*0.0*	0.5	0.5	*0.0*	0.5	0.25	*66.7*
Total Xylenes	0.6	0.6	*0.0*	0.6	0.5	*18.2*	0.6	0.5	*18.2*	0.6	0.6	*0.0*	0.6	0.6	*0.0*	0.6	0.5	*18.2*
Polycyclic Aromatic Hydrocarbons (PAH)																		
Naphthalene	0.25	0.25	*0.0*	0.5	0.5	*0.0*	0.5	0.5	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.5	*66.7*
Total Recoverable Hydrocarbons (TRH)																		
TRH C6-C10	10	10	*0.0*	10	5	*66.7*	10	5	*66.7*	10.0	10.0	*0.0*	10.0	10.0	*0.0*	10.0	5	*66.7*
TRH >C10-C16	25	25	*0.0*	25	25	*0.0*	25	25	*0.0*	25.0	25.0	*0.0*	25.0	25.0	*0.0*	25.0	25	*0.0*
TRH >C16-C34	50	50	*0.0*	50	50	*0.0*	50	50	*0.0*	50.0	50.0	*0.0*	50.0	50.0	*0.0*	50.0	50	*0.0*
TRH >C34-C40	50	50	*0.0*	50	50	*0.0*	50	50	*0.0*	50.0	50.0	*0.0*	50.0	50.0	*0.0*	50.0	50	*0.0*
F1	10	10	*0.0*	10	10	*0.0*	10	10	*0.0*	10	10	*0.0*	10	10	*0.0*	10	10	*0.0*
F2	25	25	*0.0*	25	25	*0.0*	25	25	*0.0*	25	25	*0.0*	25	25	*0.0*	25	25	*0.0*
Polycyclic Aromatic Hydrocarbons (PAH)																		
Acenaphthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Acenaphthylene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Benz(a)anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Benzo(a) pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Benzo(b)&(j)fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Benzo(g,h,i)perylene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Benzo(k)fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Chrysene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Dibenz(a,h)anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.7	*94.7*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Fluorene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Indeno(1,2,3-c,d)pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Naphthalene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.6	*82.4*	0.25	0.25	*0.0*	0.25	0.6	*82.4*	0.25	0.5	*66.7*
Phenanthrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.6	*82.4*	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	*0.0*
Carcinogenic PAH (B(a)P equivalent)	0.605	0.605	*0.0*	0.605	0.605	*0.0*	0.605	0.605	*0.0*	0.605	0.605	*0.0*	0.605	0.605	*0.0*	0.605	0.605	*0.0*
Sum of reported PAH	4	4	*0.0*	4	4	*0.0*	4	5.15	*25.1*	4	4	*0.0*	4	4.35	*8.4*	4	4.25	*6.1*
Metals																		
Arsenic	1	1	*0.0*	1	2.5	*85.7*	2.7	2.5	*7.7*	1	1	*0.0*	2.9	1	*97.4*	1	2.5	*150.0*
Cadmium	0.2	0.2	*0.0*	0.2	0.5	*85.7*	0.2	0.5	*85.7*	0.2	0.2	*0.0*	0.2	0.2	*0.0*	0.2	0.5	*150.0*
Chromium	2.5	2.5	*0.0*	2.5	2	*22.2*	2.5	2	*22.2*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2	*20.0*
Copper	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	*0.0*
Mercury	0.025	0.025	*0.0*	0.025	0.05	*66.7*	0.025	0.05	*66.7*	0.025	0.025	*0.0*	0.025	0.025	*0.0*	0.025	0.05	*100.0*
Lead	2.5	2.5	*0.0*	2.5	5	*66.7*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	7.5	5.8	*25.6*	2.5	2.5	*0.0*
Nickel	2.5	2.5	*0.0*	2.5	0.1	*184.6*	2.5	0.1	*184.6*	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	0.1	*96.0*
Zinc	7.6	8.7	*13.5*	17	18	*5.7*	16	22	*31.6*	6.9	8.4	*19.6*	74	32	*79.2*	14	18	*26.7*

Note all units in mg/kg

Results underlined were not detected and are reported as half the detection limit for statistical purpose.

BOLD identifies where RPD results

intralaboratory	*interlaboratory*	
>50	*>60*	*where both sample results exceed ten x PQL*
>75	*>85*	*where both sample results are within 5 to 10 x PQL*
>100	*>100*	*where both sample results are within 2 to 5 x PQL*
*AD>2.5 * PQL*		*where one or both sample results are <2 x PQL*

Where results are within two of the above ranges the most conservative criteria have been used to assess duplicate performance

Sample Identification	TP26a	QA10	RPD %	TP31a	QA12	RPD %	QB1	QB2	TS	TB
Sample Depth (m)	0.3			0.3						
Date	3/4/14			3/4/14						
Duplicate Type	Intralaboratory			Interlaboratory						
Sample Profile	Fill; SAND, pale brown, moist, medium grained, with shell fragments			Fill; SAND, pale brown, moist, medium grained, with shell fragments			Field Blank	Field Blank	Trip Spike	Trip Blank
Sample Purpose	Baseline assessment			Baseline assessment						
Sample collected by	JG			JG						
Laboratory Reference Number	414510-S			ES1407458004						
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)										
Benzene	0.5	0.5	*0.0*	0.5	0.1	*133.3*	0.5	0.5	86%	0.5
Toluene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.5	86%	0.5
Ethylbenzene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.5	86%	0.5
meta- and para-Xylene	0.1	0.1	*0.0*	0.1	0.25	*85.7*	0.1	0.1	88%	0.1
ortho-Xylene	0.5	0.5	*0.0*	0.5	0.25	*66.7*	0.5	0.5	88%	0.5
Total Xylenes	0.6	0.6	*0.0*	0.6	0.5	*18.2*	0.6	0.6	88%	0.6
Polycyclic Aromatic Hydrocarbons (PAH)										
Naphthalene	0.25	0.25	*0.0*	0.25	0.5	*66.7*	0.25	0.25	--	--
Total Recoverable Hydrocarbons (TRH)										
TRH C6-C10	10.0	10.0	*0.0*	10.0	5	*66.7*	10	10	87%	10
TRH >C10-C16	25.0	25.0	*0.0*	25.0	25	*0.0*	25	25	--	--
TRH >C16-C34	50.0	50.0	*0.0*	50.0	50	*0.0*	50	50	--	--
TRH >C34-C40	50.0	50.0	*0.0*	50.0	50	*0.0*	50	50	--	--
F1	10	10	*0.0*	10	10	*0.0*	10	10	--	--
F2	25	25	*0.0*	25	25	*0.0*	25	25	--	--
Polycyclic Aromatic Hydrocarbons (PAH)										
Acenaphthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Acenaphthylene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Benz(a)anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Benzo(a) pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Benzo(b)&(j)fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Benzo(g,h,i)perylene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Benzo(k)fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Chrysene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Dibenz(a,h)anthracene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Fluoranthene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Fluorene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Indeno(1,2,3-c,d)pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Naphthalene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Phenanthrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Pyrene	0.25	0.25	*0.0*	0.25	0.25	*0.0*	0.25	0.25	--	--
Carcinogenic PAH (B(a)P equivalent)	0.605	0.605	*0.0*	0.605	0.605	*0.0*	0.605	0.605	--	--
Sum of reported PAH	4	4	*0.0*	4	4	*0.0*	4	4	--	--
Metals										
Arsenic	1	1	*0.0*	1	2.5	*85.7*	1	1	--	--
Cadmium	0.2	0.2	*0.0*	0.2	0.5	*85.7*	0.2	0.2	--	--
Chromium	2.5	2.5	*0.0*	2.5	1	*85.7*	2.5	2.5	--	--
Copper	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	--	--
Mercury	0.025	0.025	*0.0*	0.025	0.05	*66.7*	0.025	0.025	--	--
Lead	2.5	2.5	*0.0*	2.5	2.5	*0.0*	2.5	2.5	--	--
Nickel	2.5	2.5	*0.0*	2.5	0.1	*184.6*	2.5	2.5	--	--
Zinc	11	16	*37.0*	6.5	8	*20.7*	2.5	**5.1**	--	--

Note all units in mg/kg except for trip spikes results in % recovery
Results underlined were not detected and are reported as half the detection limit for statistical purpose.

BOLD identifies where RPD results

intralaboratory	*interlaboratory*	
>50	*>60*	*where both sample results exceed ten x PQL*
>75	*>85*	*where both sample results are within 5 to 10 x PQL*
>100	*>100*	*where both sample results are within 2 to 5 x PQL*
*AD>2.5 * PQL*		*where one or both sample results are <2 x PQL*

Where results are within two of the above ranges the most conservative criteria have been used to assess duplicate performance
***BOLD identified where** blanks >0*
***BOLD identified where** spikes outside of 70-130% recovery range*

Sample Identification	TB	TS
Date	14/04/2014	14/04/2014
Duplicate Type	Trip Blank	Trip Spike
Sample Purpose		
Sample Appearance		
Sample collected by		
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)		
Benzene	< 0.001	106%
Toluene	< 0.001	97%
Ethylbenzene	< 0.002	103%
meta- & para-Xylene	< 0.001	101%
Ortho-xylene	< 0.001	100%
Total Recoverable Hydrocarbons (TRH)		
TRH C6-C10	< 0.02	104%
TRH >C10-C16	--	--
TRH >C16-C34	--	--
TRH >C34-C40	--	--
TRH C6-C40	--	--

Appendix I

Laboratory Report Sheets

eurofins | mgt

Certificate of Analysis

Robert Carr and Associates Pty Ltd
PO Box 175
Carrington
NSW 2294

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Fiona Brooker**

Report **414510-S**
Client Reference KI BASELINE 10556
Received Date Apr 08, 2014

Client Sample ID			**TP1A**	**TP2A**	**TP3A**	**TP4A**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Ap06411**	**S14-Ap06412**	**S14-Ap06413**	**S14-Ap06414**
Date Sampled			**Apr 02, 2014**	**Apr 02, 2014**	**Apr 02, 2014**	**Apr 02, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	79	83	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP1A	TP2A	TP3A	TP4A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06411	S14-Ap06412	S14-Ap06413	S14-Ap06414
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	116	108	109	110
p-Terphenyl-d14 (surr.)	1	%	109	105	126	110
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	7.4	7.4	7.6	16
% Moisture	0.1	%	2.9	2.9	2.8	3.9

Client Sample ID			TP5A	TP6A	TP7A	TP8A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06415	S14-Ap06416	S14-Ap06417	S14-Ap06418
Date Sampled			Apr 02, 2014	Apr 03, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	84	83	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP5A	TP6A	TP7A	TP8A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06415	S14-Ap06416	S14-Ap06417	S14-Ap06418
Date Sampled			Apr 02, 2014	Apr 03, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	105	116	115	111
p-Terphenyl-d14 (surr.)	1	%	104	129	96	106
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	5.4	17	8.0	6.2
% Moisture	0.1	%	2.7	3.5	2.4	3.1

Client Sample ID			TP9A	TP10A	TP11A	TP12A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06419	S14-Ap06420	S14-Ap06421	S14-Ap06422
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP9A	TP10A	TP11A	TP12A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06419	S14-Ap06420	S14-Ap06421	S14-Ap06422
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	87	76	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	103	115	110	101
p-Terphenyl-d14 (surr.)	1	%	123	106	123	128
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	9.1
Lead	5	mg/kg	< 5	< 5	< 5	25
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	12	17	6.9	80
% Moisture	0.1	%	2.3	2.9	2.2	2.5

Client Sample ID			TP13A	TP14A	TP15A	TP16A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06423	S14-Ap06424	S14-Ap06425	S14-Ap06426
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	78	79	75	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	2.4	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.4	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	2.2	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	8.6	0.6	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	1.2	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.5	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	95	98	91	90
p-Terphenyl-d14 (surr.)	1	%	119	124	108	106
Heavy Metals						
Arsenic	2	mg/kg	2.7	< 2	2.7	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			TP13A	TP14A	TP15A	TP16A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06423	S14-Ap06424	S14-Ap06425	S14-Ap06426
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	5.4	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	38	33	16	9.4
% Moisture	0.1	%	4.5	3.9	3.0	3.0

Client Sample ID			TP17A	TP18A	TP19A	TP20A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06427	S14-Ap06428	S14-Ap06429	S14-Ap06430
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96	92	91	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP17A	TP18A	TP19A	TP20A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06427	S14-Ap06428	S14-Ap06429	S14-Ap06430
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	2.2	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	3.9	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	91	92	87	95
p-Terphenyl-d14 (surr.)	1	%	106	107	103	110
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.2	2.5	2.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	14	< 5	< 5	7.5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	86	16	15	74
% Moisture	0.1	%	2.9	2.6	4.2	4.8

Client Sample ID			TP21A	TP22A	TP23A	TP24A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06431	S14-Ap06432	S14-Ap06433	S14-Ap06434
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	85	88	94	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP21A	TP22A	TP23A	TP24A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06431	S14-Ap06432	S14-Ap06433	S14-Ap06434
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	87	87	92	93
p-Terphenyl-d14 (surr.)	1	%	102	100	106	107
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	8.7	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	45	16	14	18
% Moisture	0.1	%	3.3	2.8	2.8	3.6

Client Sample ID			TP25A	TP26A	TP27A	TP28A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06435	S14-Ap06436	S14-Ap06437	S14-Ap06438
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP25A	TP26A	TP27A	TP28A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06435	S14-Ap06436	S14-Ap06437	S14-Ap06438
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	92	91	93	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Total PAH	0.5	mg/kg	0.6	< 0.5	1.3	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	92	90	97	89
p-Terphenyl-d14 (surr.)	1	%	106	105	111	102
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	15	11	14	8.3
% Moisture	0.1	%	3.0	1.7	3.0	3.1

Client Sample ID			TP29A	TP30A	TP31A	TP32A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06439	S14-Ap06440	S14-Ap06441	S14-Ap06442
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	92	93	94	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	90	92	89	94
p-Terphenyl-d14 (surr.)	1	%	101	106	101	106
Heavy Metals						
Arsenic	2	mg/kg	2.2	3.0	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			TP29A	TP30A	TP31A	TP32A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06439	S14-Ap06440	S14-Ap06441	S14-Ap06442
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	25	24	6.5	14
% Moisture	0.1	%	3.5	4.9	3.1	2.5

Client Sample ID			TP1C	TP1D	TP2B	TP2C
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06443	S14-Ap06444	S14-Ap06445	S14-Ap06446
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	101	97	98	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP1C	TP1D	TP2B	TP2C
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06443	S14-Ap06444	S14-Ap06445	S14-Ap06446
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	92	89	95	90
p-Terphenyl-d14 (surr.)	1	%	103	103	108	105
Heavy Metals						
Arsenic	2	mg/kg	5.2	3.9	< 2	5.2
Cadmium	0.4	mg/kg	0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	39	27	< 5	34
Copper	5	mg/kg	31	24	< 5	29
Lead	5	mg/kg	49	22	< 5	52
Mercury	0.05	mg/kg	0.12	0.10	< 0.05	0.12
Nickel	5	mg/kg	39	26	< 5	33
Zinc	5	mg/kg	440	220	7.2	410
% Moisture	0.1	%	34	29	3.8	25

Client Sample ID			TP2D	TP3D	TP3E	TP3F
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06447	S14-Ap06448	S14-Ap06449	S14-Ap06450
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	81	150	< 50
TRH C29-C36	50	mg/kg	< 50	130	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	210	150	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	81	112	122
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	1.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	200	160	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP2D	TP3D	TP3E	TP3F
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Ap06447**	**S14-Ap06448**	**S14-Ap06449**	**S14-Ap06450**
Date Sampled			**Apr 02, 2014**	**Apr 02, 2014**	**Apr 02, 2014**	**Apr 02, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	1.2	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	1.1	1.6	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.0	1.9	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	1.2	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	1.1	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	1.6	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.9	1.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	4.8	4.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	11	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	2.2	< 0.5
Pyrene	0.5	mg/kg	< 0.5	3.8	4.6	< 0.5
Total PAH	0.5	mg/kg	< 0.5	12	35	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	1.1	2.4	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	1.4	2.7	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.8	2.9	1.2
2-Fluorobiphenyl (surr.)	1	%	92	99	89	91
p-Terphenyl-d14 (surr.)	1	%	103	113	101	103
Heavy Metals						
Arsenic	2	mg/kg	6.3	4.1	8.0	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	10	31	5.1
Copper	5	mg/kg	14	11	14	< 5
Lead	5	mg/kg	16	8.0	44	< 5
Mercury	0.05	mg/kg	0.08	< 0.05	0.08	< 0.05
Nickel	5	mg/kg	17	16	20	< 5
Zinc	5	mg/kg	140	140	320	54
% Moisture	0.1	%	26	44	25	24

Client Sample ID			TP4D	TP5D	TP6D	TP7D
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Ap06451**	**S14-Ap06452**	**S14-Ap06453**	**S14-Ap06455**
Date Sampled			**Apr 02, 2014**	**Apr 02, 2014**	**Apr 02, 2014**	**Apr 03, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	140
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	140

Client Sample ID			TP4D	TP5D	TP6D	TP7D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06451	S14-Ap06452	S14-Ap06453	S14-Ap06455
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	120	120	111	114
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.0
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	150
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.0
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.2
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.4
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.3
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.9
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.1
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.0
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.4
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	8.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.9
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.3
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	27
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.8
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	2.0
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	2.3
2-Fluorobiphenyl (surr.)	1	%	93	95	97	97
p-Terphenyl-d14 (surr.)	1	%	106	110	109	110
Heavy Metals						
Arsenic	2	mg/kg	2.1	< 2	8.8	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	42
Copper	5	mg/kg	< 5	< 5	< 5	22
Lead	5	mg/kg	< 5	< 5	< 5	55
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.09
Nickel	5	mg/kg	< 5	< 5	< 5	33
Zinc	5	mg/kg	7.3	6.5	8.4	510
% Moisture	0.1	%	18	18	24	31

Client Sample ID			TP7E	TP8C	TP8D	TP9B
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06456	S14-Ap06457	S14-Ap06458	S14-Ap06459
Date Sampled			Apr 03, 2014	Apr 02, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	113	103	115	130
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	97	93	92	92
p-Terphenyl-d14 (surr.)	1	%	111	105	104	106
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			TP7E	TP8C	TP8D	TP9B
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06456	S14-Ap06457	S14-Ap06458	S14-Ap06459
Date Sampled			Apr 03, 2014	Apr 02, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	23	9.4
% Moisture	0.1	%	21	7.9	21	4.1

Client Sample ID			TP10B	TP11C	TP12D	TP13D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06460	S14-Ap06461	S14-Ap06462	S14-Ap06463
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	124	114	122	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP10B	TP11C	TP12D	TP13D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06460	S14-Ap06461	S14-Ap06462	S14-Ap06463
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	96	91	93	91
p-Terphenyl-d14 (surr.)	1	%	111	103	106	105
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	3.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	9.4
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	6.5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	9.0
Zinc	5	mg/kg	8.0	8.8	24	65
% Moisture	0.1	%	3.1	8.1	23	26

Client Sample ID			TP14D	TP15C	TP16B	TP16D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06464	S14-Ap06465	S14-Ap06466	S14-Ap06467
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	30
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	280
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	160
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	470
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	120	122	122	123
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	8.3
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	460
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP14D	TP15C	TP16B	TP16D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06464	S14-Ap06465	S14-Ap06466	S14-Ap06467
Date Sampled			Apr 02, 2014	Apr 02, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	1.0	0.9
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	1.1	0.7
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	0.6	1.0
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	1.0	0.9
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.9	0.8
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	2.1	1.9
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	14
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	2.2
Pyrene	0.5	mg/kg	< 0.5	< 0.5	2.1	1.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	8.8	24
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	1.4	1.0
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	1.7	1.2
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.9	1.5
2-Fluorobiphenyl (surr.)	1	%	96	92	75	88
p-Terphenyl-d14 (surr.)	1	%	106	104	95	112
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	6.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	1.3
Chromium	5	mg/kg	< 5	< 5	< 5	40
Copper	5	mg/kg	< 5	< 5	< 5	27
Lead	5	mg/kg	< 5	< 5	< 5	270
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.22
Nickel	5	mg/kg	< 5	< 5	< 5	20
Zinc	5	mg/kg	< 5	7.2	17	1500
% Moisture	0.1	%	21	4.4	3.8	22

Client Sample ID			TP17D	TP18C	TP19C	TP19D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06468	S14-Ap06469	S14-Ap06470	S14-Ap06471
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP17D	TP18C	TP19C	TP19D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06468	S14-Ap06469	S14-Ap06470	S14-Ap06471
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	118	130	127	120
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	88	92	91	95
p-Terphenyl-d14 (surr.)	1	%	112	119	117	122
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	8.7	< 5	7.4	< 5
% Moisture	0.1	%	17	3.9	6.6	18

Client Sample ID			TP20C	TP21D	TP22C	TP23D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06472	S14-Ap06473	S14-Ap06474	S14-Ap06475
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	26	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	210	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	100	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	340	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	125	118	124	123
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	7.9	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	320	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	1.7	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	12	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	2.1	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	1.4	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	19	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.7	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	86	89	91	90
p-Terphenyl-d14 (surr.)	1	%	111	113	114	114
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	5.3	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.8	< 0.4
Chromium	5	mg/kg	< 5	< 5	25	< 5
Copper	5	mg/kg	< 5	< 5	17	< 5

Client Sample ID			TP20C	TP21D	TP22C	TP23D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06472	S14-Ap06473	S14-Ap06474	S14-Ap06475
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	< 5	< 5	130	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.11	< 0.05
Nickel	5	mg/kg	< 5	< 5	18	< 5
Zinc	5	mg/kg	5.3	< 5	780	6.9
% Moisture	0.1	%	3.6	20	17	17

Client Sample ID			TP24C	TP24D	TP24E	TP25D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06476	S14-Ap06477	S14-Ap06478	S14-Ap06479
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	23	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	130	< 50	65
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	150	< 50	65
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	125	114	124	117
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	5.2	< 0.5	3.0
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	160	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	1.9	< 0.5	1.0
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP24C	TP24D	TP24E	TP25D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06476	S14-Ap06477	S14-Ap06478	S14-Ap06479
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	5.2	< 0.5	2.2
Phenanthrene	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	1.7	< 0.5	0.9
Total PAH	0.5	mg/kg	< 0.5	9.9	< 0.5	4.1
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	90	90	87	91
p-Terphenyl-d14 (surr.)	1	%	116	111	109	113
Heavy Metals						
Arsenic	2	mg/kg	< 2	12	< 2	4.1
Cadmium	0.4	mg/kg	< 0.4	1.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	52	< 5	12
Copper	5	mg/kg	< 5	48	< 5	8.8
Lead	5	mg/kg	< 5	300	< 5	66
Mercury	0.05	mg/kg	< 0.05	0.22	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	32	< 5	7.6
Zinc	5	mg/kg	8.6	2000	8.3	570
% Moisture	0.1	%	4.0	39	9.5	25

Client Sample ID			TP25E	TP26C	TP26D	TP27C
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06480	S14-Ap06481	S14-Ap06482	S14-Ap06483
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	116	118	121	123
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP25E	TP26C	TP26D	TP27C
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06480	S14-Ap06481	S14-Ap06482	S14-Ap06483
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.0	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	2.6	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	2.1	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	2.2	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	11	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	1.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.9	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	89	92	94	88
p-Terphenyl-d14 (surr.)	1	%	113	118	120	114
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	8.9	25	15	< 5
% Moisture	0.1	%	20	13	17	5.0

Client Sample ID			TP28C	TP29C	TP30B	TP31D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06484	S14-Ap06485	S14-Ap06486	S14-Ap06487
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP28C	TP29C	TP30B	TP31D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06484	S14-Ap06485	S14-Ap06486	S14-Ap06487
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 03, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	129	121	129	118
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	85	88	73	89
p-Terphenyl-d14 (surr.)	1	%	110	110	88	113
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	15	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	77	19	< 5
% Moisture	0.1	%	3.4	6.5	5.0	20

Client Sample ID			TP32C	QB1	QB2	COMP 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06488	S14-Ap06489	S14-Ap06490	S14-Ap06491
Date Sampled			Apr 03, 2014	Apr 02, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	95	93	97	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	90	86	87	-
p-Terphenyl-d14 (surr.)	1	%	117	111	111	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05

Client Sample ID			TP32C	QB1	QB2	COMP 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06488	S14-Ap06489	S14-Ap06490	S14-Ap06491
Date Sampled			Apr 03, 2014	Apr 02, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.2	mg/kg	-	-	-	< 0.2
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	104
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	89
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	-	< 0.5
Total PCB	0.5	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	-	104
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	-	< 1
Diazinon	0.5	mg/kg	-	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	-	< 0.5
Malathion	0.5	mg/kg	-	-	-	< 0.5
Methyl parathion	0.5	mg/kg	-	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	-	< 10
Parathion	0.5	mg/kg	-	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			TP32C	QB1	QB2	COMP 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06488	S14-Ap06489	S14-Ap06490	S14-Ap06491
Date Sampled			Apr 03, 2014	Apr 02, 2014	Apr 03, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Ronnel	0.5	mg/kg	-	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	-	91
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	< 5	< 5	< 5	-
Copper	5	mg/kg	< 5	< 5	< 5	-
Lead	5	mg/kg	< 5	< 5	< 5	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	< 5	< 5	< 5	-
Zinc	5	mg/kg	9.1	< 5	5.1	-
% Moisture	0.1	%	9.6	0.3	0.2	3.3

Client Sample ID			COMP 2	COMP 3	QA2	QA6(1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06492	S14-Ap06493	S14-Ap06494	S14-Ap06495
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	93	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100

Client Sample ID			COMP 2	COMP 3	QA2	QA6(1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06492	S14-Ap06493	S14-Ap06494	S14-Ap06495
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	86	84
p-Terphenyl-d14 (surr.)	1	%	-	-	110	107
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	100	102	-	-
Tetrachloro-m-xylene (surr.)	1	%	86	84	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	COMP 2 Soil S14-Ap06492 Apr 03, 2014	COMP 3 Soil S14-Ap06493 Apr 03, 2014	QA2 Soil S14-Ap06494 Apr 02, 2014	QA6(1) Soil S14-Ap06495 Apr 03, 2014
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	100	102	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	-	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Demeton (total)	1	mg/kg	< 1	< 1	-	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	-	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	-	-
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	-	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Monocrotophos	10	mg/kg	< 10	< 10	-	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	-	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	-	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	92	100	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	< 2	< 2
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	< 5	< 5
Copper	5	mg/kg	-	-	< 5	< 5
Lead	5	mg/kg	-	-	< 5	< 5
Mercury	0.05	mg/kg	-	-	< 0.05	< 0.05
Nickel	5	mg/kg	-	-	< 5	< 5
Zinc	5	mg/kg	-	-	8.7	8.4
% Moisture	0.1	%	3.2	3.0	2.5	2.2

Client Sample ID			QA8	QA10	TS	TB
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06496	S14-Ap06497	S14-Ap06498	S14-Ap06499
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	87%	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	86%	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	86%	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	86%	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	88%	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	88%	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	88%	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96	96	109	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	0.6	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	0.5	mg/kg	0.6	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	89	83	-	-
p-Terphenyl-d14 (surr.)	1	%	113	106	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	< 5	< 5	-	-
Copper	5	mg/kg	< 5	< 5	-	-

Client Sample ID			QA8	QA10	TS	TB
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Ap06496	S14-Ap06497	S14-Ap06498	S14-Ap06499
Date Sampled			Apr 03, 2014	Apr 03, 2014	Apr 02, 2014	Apr 02, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	5.8	< 5	-	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	5	mg/kg	< 5	< 5	-	-
Zinc	5	mg/kg	32	16	-	-
% Moisture	0.1	%	2.8	2.5	-	-

Client Sample ID			TP17C
Sample Matrix			Soil
Eurofins | mgt Sample No.			S14-Ap07322
Date Sampled			Apr 03, 2014
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5

Client Sample ID			TP17C
Sample Matrix			Soil
Eurofins | mgt Sample No.			S14-Ap07322
Date Sampled			Apr 03, 2014
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2
2-Fluorobiphenyl (surr.)	1	%	90
p-Terphenyl-d14 (surr.)	1	%	115
Heavy Metals			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	< 5
Copper	5	mg/kg	< 5
Lead	5	mg/kg	< 5
Mercury	0.05	mg/kg	< 0.05
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	< 5
% Moisture	0.1	%	10

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Apr 17, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Apr 17, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 17, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Apr 15, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Apr 15, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 15			
Organochlorine Pesticides	Sydney	Apr 15, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Apr 15, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Organophosphorus Pesticides (OP)	Sydney	Apr 15, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
% Moisture	Sydney	Apr 15, 2014	28 Day
- Method: E005 Moisture Content			

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NATA # 1261 Site # 20794

Company Name:	Robert Carr and Associates Pty Ltd	**Order No.:**		**Received:**	Apr 8, 2014 9:00 AM
Address:	PO Box 175	**Report #:**	414510	**Due:**	Apr 15, 2014
	Carrington	**Phone:**	02 4902 9200	**Priority:**	5 Day
	NSW 2294	**Fax:**	02 4902 9299	**Contact Name:**	Fiona Brooker
Client Job No.:	KI BASELINE 10556				

Eurofins | mgt Client Manager: Ruth Callander

Sample Detail					% Moisture	CANCELLED	TRH C6-C9	BTEX	Eurofins | mgt Suite 15	Eurofins | mgt Suite 7
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
TP1A	Apr 02, 2014		Soil	S14-Ap06411	X					X
TP2A	Apr 02, 2014		Soil	S14-Ap06412	X					X
TP3A	Apr 02, 2014		Soil	S14-Ap06413	X					X
TP4A	Apr 02, 2014		Soil	S14-Ap06414	X					X
TP5A	Apr 02, 2014		Soil	S14-Ap06415	X					X
TP6A	Apr 03, 2014		Soil	S14-Ap06416	X					X
TP7A	Apr 03, 2014		Soil	S14-Ap06417	X					X
TP8A	Apr 02, 2014		Soil	S14-Ap06418	X					X
TP9A	Apr 03, 2014		Soil	S14-Ap06419	X					X
TP10A	Apr 03, 2014		Soil	S14-Ap06420	X					X

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Robert Carr and Associates Pty Ltd
Address: PO Box 175
Carrington
NSW 2294

Client Job No.: KI BASELINE 10556

Order No.:
Report #: 414510
Phone: 02 4902 9200
Fax: 02 4902 9299

Received: Apr 8, 2014 9:00 AM
Due: Apr 15, 2014
Priority: 5 Day
Contact Name: Fiona Brooker

Eurofins | mgt Client Manager: Ruth Callander

Sample Detail					% Moisture	CANCELLED	TRH C6-C9	BTEX	Eurofins | mgt Suite 15	Eurofins | mgt Suite 7
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP11A	Apr 03, 2014		Soil	S14-Ap06421	X					X
TP12A	Apr 02, 2014		Soil	S14-Ap06422	X					X
TP13A	Apr 02, 2014		Soil	S14-Ap06423	X					X
TP14A	Apr 02, 2014		Soil	S14-Ap06424	X					X
TP15A	Apr 02, 2014		Soil	S14-Ap06425	X					X
TP16A	Apr 03, 2014		Soil	S14-Ap06426	X					X
TP17A	Apr 03, 2014		Soil	S14-Ap06427	X					X
TP18A	Apr 03, 2014		Soil	S14-Ap06428	X					X
TP19A	Apr 02, 2014		Soil	S14-Ap06429	X					X
TP20A	Apr 03, 2014		Soil	S14-Ap06430	X					X
TP21A	Apr 03, 2014		Soil	S14-Ap06431	X					X

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NATA # 1261 Site # 20794

Company Name: Robert Carr and Associates Pty Ltd
Address: PO Box 175
Carrington
NSW 2294

Client Job No.: KI BASELINE 10556

Order No.:
Report #: 414510
Phone: 02 4902 9200
Fax: 02 4902 9299

Received: Apr 8, 2014 9:00 AM
Due: Apr 15, 2014
Priority: 5 Day
Contact Name: Fiona Brooker

Eurofins | mgt Client Manager: Ruth Callander

Sample Detail					% Moisture	CANCELLED	TRH C6-C9	BTEX	Eurofins | mgt Suite 15	Eurofins | mgt Suite 7
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP22A	Apr 03, 2014		Soil	S14-Ap06432	X					X
TP23A	Apr 03, 2014		Soil	S14-Ap06433	X					X
TP24A	Apr 03, 2014		Soil	S14-Ap06434	X					X
TP25A	Apr 03, 2014		Soil	S14-Ap06435	X					X
TP26A	Apr 03, 2014		Soil	S14-Ap06436	X					X
TP27A	Apr 03, 2014		Soil	S14-Ap06437	X					X
TP28A	Apr 03, 2014		Soil	S14-Ap06438	X					X
TP29A	Apr 03, 2014		Soil	S14-Ap06439	X					X
TP30A	Apr 03, 2014		Soil	S14-Ap06440	X					X
TP31A	Apr 03, 2014		Soil	S14-Ap06441	X					X
TP32A	Apr 03, 2014		Soil	S14-Ap06442	X					X

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP1C	Apr 02, 2014		Soil	S14-Ap06443	X					X
TP1D	Apr 02, 2014		Soil	S14-Ap06444	X					X
TP2B	Apr 02, 2014		Soil	S14-Ap06445	X					X
TP2C	Apr 02, 2014		Soil	S14-Ap06446	X					X
TP2D	Apr 02, 2014		Soil	S14-Ap06447	X					X
TP3D	Apr 02, 2014		Soil	S14-Ap06448	X					X
TP3E	Apr 02, 2014		Soil	S14-Ap06449	X					X
TP3F	Apr 02, 2014		Soil	S14-Ap06450	X					X
TP4D	Apr 02, 2014		Soil	S14-Ap06451	X					X
TP5D	Apr 02, 2014		Soil	S14-Ap06452	X					X
TP6D	Apr 02, 2014		Soil	S14-Ap06453	X					X

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Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP7	Apr 03, 2014		Soil	S14-Ap06454		X				
TP7D	Apr 03, 2014		Soil	S14-Ap06455	X					X
TP7E	Apr 03, 2014		Soil	S14-Ap06456	X					X
TP8C	Apr 02, 2014		Soil	S14-Ap06457	X					X
TP8D	Apr 02, 2014		Soil	S14-Ap06458	X					X
TP9B	Apr 03, 2014		Soil	S14-Ap06459	X					X
TP10B	Apr 03, 2014		Soil	S14-Ap06460	X					X
TP11C	Apr 03, 2014		Soil	S14-Ap06461	X					X
TP12D	Apr 02, 2014		Soil	S14-Ap06462	X					X
TP13D	Apr 02, 2014		Soil	S14-Ap06463	X					X
TP14D	Apr 02, 2014		Soil	S14-Ap06464	X					X

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Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP15C	Apr 02, 2014		Soil	S14-Ap06465	X					X
TP16B	Apr 03, 2014		Soil	S14-Ap06466	X					X
TP16D	Apr 03, 2014		Soil	S14-Ap06467	X					X
TP17D	Apr 03, 2014		Soil	S14-Ap06468	X					X
TP18C	Apr 03, 2014		Soil	S14-Ap06469	X					X
TP19C	Apr 02, 2014		Soil	S14-Ap06470	X					X
TP19D	Apr 02, 2014		Soil	S14-Ap06471	X					X
TP20C	Apr 03, 2014		Soil	S14-Ap06472	X					X
TP21D	Apr 03, 2014		Soil	S14-Ap06473	X					X
TP22C	Apr 03, 2014		Soil	S14-Ap06474	X					X
TP23D	Apr 03, 2014		Soil	S14-Ap06475	X					X

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Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP24C	Apr 03, 2014		Soil	S14-Ap06476	X					X
TP24D	Apr 03, 2014		Soil	S14-Ap06477	X					X
TP24E	Apr 03, 2014		Soil	S14-Ap06478	X					X
TP25D	Apr 03, 2014		Soil	S14-Ap06479	X					X
TP25E	Apr 03, 2014		Soil	S14-Ap06480	X					X
TP26C	Apr 03, 2014		Soil	S14-Ap06481	X					X
TP26D	Apr 03, 2014		Soil	S14-Ap06482	X					X
TP27C	Apr 03, 2014		Soil	S14-Ap06483	X					X
TP28C	Apr 03, 2014		Soil	S14-Ap06484	X					X
TP29C	Apr 03, 2014		Soil	S14-Ap06485	X					X
TP30B	Apr 03, 2014		Soil	S14-Ap06486	X					X

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Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TP31D	Apr 03, 2014		Soil	S14-Ap06487	X					X
TP32C	Apr 03, 2014		Soil	S14-Ap06488	X					X
QB1	Apr 02, 2014		Soil	S14-Ap06489	X					X
QB2	Apr 03, 2014		Soil	S14-Ap06490	X					X
COMP 1	Apr 02, 2014		Soil	S14-Ap06491	X				X	
COMP 2	Apr 03, 2014		Soil	S14-Ap06492	X				X	
COMP 3	Apr 03, 2014		Soil	S14-Ap06493	X				X	
QA2	Apr 02, 2014		Soil	S14-Ap06494	X					X
QA6(1)	Apr 03, 2014		Soil	S14-Ap06495	X					X
QA8	Apr 03, 2014		Soil	S14-Ap06496	X					X
QA10	Apr 03, 2014		Soil	S14-Ap06497	X					X

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Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
TS	Apr 02, 2014		Soil	S14-Ap06498			X	X		
TB	Apr 02, 2014		Soil	S14-Ap06499			X	X		
TSLAB	Apr 02, 2014		Soil	S14-Ap06500			X	X		
TP17C	Apr 03, 2014		Soil	S14-Ap07322	X					X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	91			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
TRH C6-C10	%	88			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	108			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Anthracene	%	105			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	94			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	106			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	110			70-130	Pass	
Phenanthrene	%	101			70-130	Pass	
Pyrene	%	98			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	85			70-130	Pass	
4.4'-DDD	%	85			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	85			70-130	Pass	
a-BHC	%	90			70-130	Pass	
Aldrin	%	90			70-130	Pass	
b-BHC	%	90			70-130	Pass	
d-BHC	%	95			70-130	Pass	
Dieldrin	%	80			70-130	Pass	
Endosulfan I	%	85			70-130	Pass	
Endosulfan II	%	85			70-130	Pass	
Endosulfan sulphate	%	90			70-130	Pass	
Endrin	%	85			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	85			70-130	Pass	
g-BHC (Lindane)	%	95			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	120			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	103			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	90			70-130	Pass	
Coumaphos	%	76			70-130	Pass	
Diazinon	%	83			70-130	Pass	
Dichlorvos	%	95			70-130	Pass	
Dimethoate	%	83			70-130	Pass	
Disulfoton	%	83			70-130	Pass	
Ethoprop	%	89			70-130	Pass	
Fenitrothion	%	82			70-130	Pass	
Fensulfothion	%	84			70-130	Pass	
Fenthion	%	83			70-130	Pass	
Methyl azinphos	%	76			70-130	Pass	
Malathion	%	82			70-130	Pass	
Methyl parathion	%	81			70-130	Pass	
Mevinphos	%	88			70-130	Pass	
Monocrotophos	%	85			70-130	Pass	
Parathion	%	100			70-130	Pass	
Phorate	%	81			70-130	Pass	
Profenofos	%	82			70-130	Pass	
Prothiofos	%	82			70-130	Pass	
Ronnel	%	94			70-130	Pass	
Stirophos	%	79			70-130	Pass	
Trichloronate	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			70-130	Pass	
Cadmium	%	97			70-130	Pass	
Chromium	%	106			70-130	Pass	
Copper	%	118			70-130	Pass	
Lead	%	102			70-130	Pass	
Mercury	%	106			70-130	Pass	
Nickel	%	108			70-130	Pass	
Zinc	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06411	CP	%	102			70-130	Pass	
TRH C10-C14	S14-Ap06411	CP	%	83			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06411	CP	%	109			70-130	Pass	
Toluene	S14-Ap06411	CP	%	98			70-130	Pass	
Ethylbenzene	S14-Ap06411	CP	%	96			70-130	Pass	
m&p-Xylenes	S14-Ap06411	CP	%	101			70-130	Pass	
o-Xylene	S14-Ap06411	CP	%	99			70-130	Pass	
Xylenes - Total	S14-Ap06411	CP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06411	CP	%	100			70-130	Pass	
TRH C6-C10	S14-Ap06411	CP	%	96			70-130	Pass	
TRH >C10-C16	S14-Ap06411	CP	%	87			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06411	CP	%	100			70-130	Pass	
Acenaphthylene	S14-Ap06411	CP	%	101			70-130	Pass	
Anthracene	S14-Ap06411	CP	%	104			70-130	Pass	
Benz(a)anthracene	S14-Ap06411	CP	%	103			70-130	Pass	
Benzo(a)pyrene	S14-Ap06411	CP	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06411	CP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06411	CP	%	79			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06411	CP	%	108			70-130	Pass	
Chrysene	S14-Ap06411	CP	%	108			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06411	CP	%	108			70-130	Pass	
Fluoranthene	S14-Ap06411	CP	%	110			70-130	Pass	
Fluorene	S14-Ap06411	CP	%	101			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06411	CP	%	81			70-130	Pass	
Naphthalene	S14-Ap06411	CP	%	102			70-130	Pass	
Phenanthrene	S14-Ap06411	CP	%	99			70-130	Pass	
Pyrene	S14-Ap06411	CP	%	112			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06411	CP	%	103			70-130	Pass	
Cadmium	S14-Ap06411	CP	%	102			70-130	Pass	
Chromium	S14-Ap06411	CP	%	107			70-130	Pass	
Copper	S14-Ap06411	CP	%	112			70-130	Pass	
Lead	S14-Ap06411	CP	%	98			70-130	Pass	
Mercury	S14-Ap06411	CP	%	108			70-130	Pass	
Nickel	S14-Ap06411	CP	%	106			70-130	Pass	
Zinc	S14-Ap06411	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Ap06412	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Ap06412	CP	%	91			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06412	CP	%	101			70-130	Pass	
Acenaphthylene	S14-Ap06412	CP	%	101			70-130	Pass	
Anthracene	S14-Ap06412	CP	%	106			70-130	Pass	
Benz(a)anthracene	S14-Ap06412	CP	%	105			70-130	Pass	
Benzo(a)pyrene	S14-Ap06412	CP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06412	CP	%	92			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06412	CP	%	77			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06412	CP	%	110			70-130	Pass	
Chrysene	S14-Ap06412	CP	%	107			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06412	CP	%	107			70-130	Pass	
Fluoranthene	S14-Ap06412	CP	%	111			70-130	Pass	
Fluorene	S14-Ap06412	CP	%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06412	CP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	S14-Ap06412	CP	%	103			70-130	Pass	
Phenanthrene	S14-Ap06412	CP	%	100			70-130	Pass	
Pyrene	S14-Ap06412	CP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06421	CP	%	88			70-130	Pass	
TRH C10-C14	S14-Ap06421	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06421	CP	%	74			70-130	Pass	
Toluene	S14-Ap06421	CP	%	81			70-130	Pass	
Ethylbenzene	S14-Ap06421	CP	%	87			70-130	Pass	
m&p-Xylenes	S14-Ap06421	CP	%	92			70-130	Pass	
o-Xylene	S14-Ap06421	CP	%	91			70-130	Pass	
Xylenes - Total	S14-Ap06421	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06421	CP	%	99			70-130	Pass	
TRH C6-C10	S14-Ap06421	CP	%	86			70-130	Pass	
TRH >C10-C16	S14-Ap06421	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06421	CP	%	101			70-130	Pass	
Acenaphthylene	S14-Ap06421	CP	%	102			70-130	Pass	
Anthracene	S14-Ap06421	CP	%	106			70-130	Pass	
Benz(a)anthracene	S14-Ap06421	CP	%	104			70-130	Pass	
Benzo(a)pyrene	S14-Ap06421	CP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06421	CP	%	84			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06421	CP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06421	CP	%	112			70-130	Pass	
Chrysene	S14-Ap06421	CP	%	107			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06421	CP	%	86			70-130	Pass	
Fluoranthene	S14-Ap06421	CP	%	111			70-130	Pass	
Fluorene	S14-Ap06421	CP	%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06421	CP	%	85			70-130	Pass	
Naphthalene	S14-Ap06421	CP	%	103			70-130	Pass	
Phenanthrene	S14-Ap06421	CP	%	100			70-130	Pass	
Pyrene	S14-Ap06421	CP	%	112			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06421	CP	%	101			70-130	Pass	
Cadmium	S14-Ap06421	CP	%	89			70-130	Pass	
Chromium	S14-Ap06421	CP	%	100			70-130	Pass	
Copper	S14-Ap06421	CP	%	102			70-130	Pass	
Lead	S14-Ap06421	CP	%	96			70-130	Pass	
Mercury	S14-Ap06421	CP	%	109			70-130	Pass	
Nickel	S14-Ap06421	CP	%	100			70-130	Pass	
Zinc	S14-Ap06421	CP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Ap06422	CP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Ap06422	CP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06422	CP	%	98			70-130	Pass	
Acenaphthylene	S14-Ap06422	CP	%	100			70-130	Pass	
Anthracene	S14-Ap06422	CP	%	102			70-130	Pass	
Benz(a)anthracene	S14-Ap06422	CP	%	107			70-130	Pass	
Benzo(a)pyrene	S14-Ap06422	CP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06422	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06422	CP	%	85			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06422	CP	%	110			70-130	Pass	
Chrysene	S14-Ap06422	CP	%	109			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06422	CP	%	89			70-130	Pass	
Fluoranthene	S14-Ap06422	CP	%	126			70-130	Pass	
Fluorene	S14-Ap06422	CP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06422	CP	%	88			70-130	Pass	
Naphthalene	S14-Ap06422	CP	%	106			70-130	Pass	
Phenanthrene	S14-Ap06422	CP	%	100			70-130	Pass	
Pyrene	S14-Ap06422	CP	%	128			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06431	CP	%	109			70-130	Pass	
TRH C10-C14	S14-Ap06431	CP	%	93			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06431	CP	%	94			70-130	Pass	
Toluene	S14-Ap06431	CP	%	88			70-130	Pass	
Ethylbenzene	S14-Ap06431	CP	%	88			70-130	Pass	
m&p-Xylenes	S14-Ap06431	CP	%	93			70-130	Pass	
o-Xylene	S14-Ap06431	CP	%	93			70-130	Pass	
Xylenes - Total	S14-Ap06431	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06431	CP	%	129			70-130	Pass	
TRH C6-C10	S14-Ap06431	CP	%	106			70-130	Pass	
TRH >C10-C16	S14-Ap06431	CP	%	105			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06431	CP	%	90			70-130	Pass	
Acenaphthylene	S14-Ap06431	CP	%	87			70-130	Pass	
Anthracene	S14-Ap06431	CP	%	88			70-130	Pass	
Benz(a)anthracene	S14-Ap06431	CP	%	88			70-130	Pass	
Benzo(a)pyrene	S14-Ap06431	CP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06431	CP	%	87			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06431	CP	%	86			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06431	CP	%	91			70-130	Pass	
Chrysene	S14-Ap06431	CP	%	92			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06431	CP	%	85			70-130	Pass	
Fluoranthene	S14-Ap06431	CP	%	94			70-130	Pass	
Fluorene	S14-Ap06431	CP	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06431	CP	%	86			70-130	Pass	
Naphthalene	S14-Ap06431	CP	%	73			70-130	Pass	
Phenanthrene	S14-Ap06431	CP	%	90			70-130	Pass	
Pyrene	S14-Ap06431	CP	%	89			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Arsenic	S14-Ap06431	CP	%	96			70-130	Pass	
Cadmium	S14-Ap06431	CP	%	96			70-130	Pass	
Chromium	S14-Ap06431	CP	%	100			70-130	Pass	
Copper	S14-Ap06431	CP	%	109			70-130	Pass	
Lead	S14-Ap06431	CP	%	95			70-130	Pass	
Mercury	S14-Ap06431	CP	%	111			70-130	Pass	
Nickel	S14-Ap06431	CP	%	100			70-130	Pass	
Zinc	S14-Ap06431	CP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06441	CP	%	82			70-130	Pass	
TRH C10-C14	S14-Ap06441	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06441	CP	%	97			70-130	Pass	
Toluene	S14-Ap06441	CP	%	101			70-130	Pass	
Ethylbenzene	S14-Ap06441	CP	%	88			70-130	Pass	
m&p-Xylenes	S14-Ap06441	CP	%	106			70-130	Pass	
o-Xylene	S14-Ap06441	CP	%	106			70-130	Pass	
Xylenes - Total	S14-Ap06441	CP	%	106			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06441	CP	%	99			70-130	Pass	
TRH C6-C10	S14-Ap06441	CP	%	79			70-130	Pass	
TRH >C10-C16	S14-Ap06441	CP	%	66			70-130	Fail	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06441	CP	%	118			70-130	Pass	
Acenaphthylene	S14-Ap06441	CP	%	113			70-130	Pass	
Anthracene	S14-Ap06441	CP	%	118			70-130	Pass	
Benz(a)anthracene	S14-Ap06441	CP	%	112			70-130	Pass	
Benzo(a)pyrene	S14-Ap06441	CP	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06441	CP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06441	CP	%	115			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06441	CP	%	117			70-130	Pass	
Chrysene	S14-Ap06441	CP	%	117			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06441	CP	%	116			70-130	Pass	
Fluoranthene	S14-Ap06441	CP	%	114			70-130	Pass	
Fluorene	S14-Ap06441	CP	%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06441	CP	%	115			70-130	Pass	
Naphthalene	S14-Ap06441	CP	%	117			70-130	Pass	
Phenanthrene	S14-Ap06441	CP	%	112			70-130	Pass	
Pyrene	S14-Ap06441	CP	%	108			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06441	CP	%	112			70-130	Pass	
Cadmium	S14-Ap06441	CP	%	91			70-130	Pass	
Chromium	S14-Ap06441	CP	%	88			70-130	Pass	
Copper	S14-Ap06441	CP	%	93			70-130	Pass	
Lead	S14-Ap06441	CP	%	100			70-130	Pass	
Mercury	S14-Ap06441	CP	%	112			70-130	Pass	
Nickel	S14-Ap06441	CP	%	88			70-130	Pass	
Zinc	S14-Ap06441	CP	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06451	CP	%	87			70-130	Pass	
TRH C10-C14	S14-Ap06451	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06451	CP	%	95			70-130	Pass	
Toluene	S14-Ap06451	CP	%	86			70-130	Pass	
Ethylbenzene	S14-Ap06451	CP	%	78			70-130	Pass	
m&p-Xylenes	S14-Ap06451	CP	%	80			70-130	Pass	
o-Xylene	S14-Ap06451	CP	%	81			70-130	Pass	
Xylenes - Total	S14-Ap06451	CP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06451	CP	%	90			70-130	Pass	
TRH C6-C10	S14-Ap06451	CP	%	90			70-130	Pass	
TRH >C10-C16	S14-Ap06451	CP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06451	CP	%	119			70-130	Pass	
Acenaphthylene	S14-Ap06451	CP	%	117			70-130	Pass	
Anthracene	S14-Ap06451	CP	%	121			70-130	Pass	
Benz(a)anthracene	S14-Ap06451	CP	%	113			70-130	Pass	
Benzo(a)pyrene	S14-Ap06451	CP	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06451	CP	%	109			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06451	CP	%	119			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06451	CP	%	119			70-130	Pass	
Chrysene	S14-Ap06451	CP	%	118			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06451	CP	%	119			70-130	Pass	
Fluoranthene	S14-Ap06451	CP	%	117			70-130	Pass	
Fluorene	S14-Ap06451	CP	%	119			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06451	CP	%	118			70-130	Pass	
Naphthalene	S14-Ap06451	CP	%	120			70-130	Pass	
Phenanthrene	S14-Ap06451	CP	%	115			70-130	Pass	
Pyrene	S14-Ap06451	CP	%	110			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06451	CP	%	84			70-130	Pass	
Cadmium	S14-Ap06451	CP	%	83			70-130	Pass	
Chromium	S14-Ap06451	CP	%	82			70-130	Pass	
Copper	S14-Ap06451	CP	%	86			70-130	Pass	
Lead	S14-Ap06451	CP	%	92			70-130	Pass	
Mercury	S14-Ap06451	CP	%	114			70-130	Pass	
Nickel	S14-Ap06451	CP	%	80			70-130	Pass	
Zinc	S14-Ap06451	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06462	CP	%	83			70-130	Pass	
TRH C10-C14	S14-Ap06462	CP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06462	CP	%	96			70-130	Pass	
Toluene	S14-Ap06462	CP	%	87			70-130	Pass	
Ethylbenzene	S14-Ap06462	CP	%	79			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S14-Ap06462	CP	%	81			70-130	Pass	
o-Xylene	S14-Ap06462	CP	%	83			70-130	Pass	
Xylenes - Total	S14-Ap06462	CP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06462	CP	%	89			70-130	Pass	
TRH C6-C10	S14-Ap06462	CP	%	91			70-130	Pass	
TRH >C10-C16	S14-Ap06462	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06462	CP	%	90			70-130	Pass	
Cadmium	S14-Ap06462	CP	%	94			70-130	Pass	
Chromium	S14-Ap06462	CP	%	90			70-130	Pass	
Copper	S14-Ap06462	CP	%	91			70-130	Pass	
Lead	S14-Ap06462	CP	%	99			70-130	Pass	
Mercury	S14-Ap06462	CP	%	118			70-130	Pass	
Nickel	S14-Ap06462	CP	%	88			70-130	Pass	
Zinc	S14-Ap06462	CP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06472	CP	%	92			70-130	Pass	
TRH C10-C14	S14-Ap06472	CP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06472	CP	%	110			70-130	Pass	
Toluene	S14-Ap06472	CP	%	99			70-130	Pass	
Ethylbenzene	S14-Ap06472	CP	%	90			70-130	Pass	
m&p-Xylenes	S14-Ap06472	CP	%	93			70-130	Pass	
o-Xylene	S14-Ap06472	CP	%	95			70-130	Pass	
Xylenes - Total	S14-Ap06472	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06472	CP	%	99			70-130	Pass	
TRH C6-C10	S14-Ap06472	CP	%	103			70-130	Pass	
TRH >C10-C16	S14-Ap06472	CP	%	90			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06472	CP	%	84			70-130	Pass	
Acenaphthylene	S14-Ap06472	CP	%	84			70-130	Pass	
Anthracene	S14-Ap06472	CP	%	90			70-130	Pass	
Benz(a)anthracene	S14-Ap06472	CP	%	89			70-130	Pass	
Benzo(a)pyrene	S14-Ap06472	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06472	CP	%	77			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06472	CP	%	73			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06472	CP	%	99			70-130	Pass	
Chrysene	S14-Ap06472	CP	%	94			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06472	CP	%	110			70-130	Pass	
Fluoranthene	S14-Ap06472	CP	%	96			70-130	Pass	
Fluorene	S14-Ap06472	CP	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06472	CP	%	74			70-130	Pass	
Naphthalene	S14-Ap06472	CP	%	88			70-130	Pass	
Phenanthrene	S14-Ap06472	CP	%	84			70-130	Pass	
Pyrene	S14-Ap06472	CP	%	98			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Arsenic	S14-Ap06472	CP	%	101			70-130	Pass	
Cadmium	S14-Ap06472	CP	%	84			70-130	Pass	
Chromium	S14-Ap06472	CP	%	103			70-130	Pass	
Copper	S14-Ap06472	CP	%	102			70-130	Pass	
Lead	S14-Ap06472	CP	%	94			70-130	Pass	
Mercury	S14-Ap06472	CP	%	114			70-130	Pass	
Nickel	S14-Ap06472	CP	%	103			70-130	Pass	
Zinc	S14-Ap06472	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06482	CP	%	88			70-130	Pass	
TRH C10-C14	S14-Ap06482	CP	%	78			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Ap06482	CP	%	109			70-130	Pass	
Toluene	S14-Ap06482	CP	%	96			70-130	Pass	
Ethylbenzene	S14-Ap06482	CP	%	86			70-130	Pass	
m&p-Xylenes	S14-Ap06482	CP	%	89			70-130	Pass	
o-Xylene	S14-Ap06482	CP	%	92			70-130	Pass	
Xylenes - Total	S14-Ap06482	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06482	CP	%	100			70-130	Pass	
TRH C6-C10	S14-Ap06482	CP	%	98			70-130	Pass	
TRH >C10-C16	S14-Ap06482	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Ap06482	CP	%	109			70-130	Pass	
Acenaphthylene	S14-Ap06482	CP	%	109			70-130	Pass	
Anthracene	S14-Ap06482	CP	%	113			70-130	Pass	
Benz(a)anthracene	S14-Ap06482	CP	%	117			70-130	Pass	
Benzo(a)pyrene	S14-Ap06482	CP	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Ap06482	CP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	S14-Ap06482	CP	%	81			70-130	Pass	
Benzo(k)fluoranthene	S14-Ap06482	CP	%	123			70-130	Pass	
Chrysene	S14-Ap06482	CP	%	119			70-130	Pass	
Dibenz(a.h)anthracene	S14-Ap06482	CP	%	122			70-130	Pass	
Fluoranthene	S14-Ap06482	CP	%	124			70-130	Pass	
Fluorene	S14-Ap06482	CP	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06482	CP	%	87			70-130	Pass	
Naphthalene	S14-Ap06482	CP	%	114			70-130	Pass	
Phenanthrene	S14-Ap06482	CP	%	109			70-130	Pass	
Pyrene	S14-Ap06482	CP	%	127			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06482	CP	%	101			70-130	Pass	
Cadmium	S14-Ap06482	CP	%	87			70-130	Pass	
Chromium	S14-Ap06482	CP	%	106			70-130	Pass	
Copper	S14-Ap06482	CP	%	102			70-130	Pass	
Lead	S14-Ap06482	CP	%	95			70-130	Pass	
Mercury	S14-Ap06482	CP	%	92			70-130	Pass	
Nickel	S14-Ap06482	CP	%	105			70-130	Pass	
Zinc	S14-Ap06482	CP	%	112			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Ap05844	NCP	%	85			70-130	Pass	
4.4'-DDD	S14-Ap05844	NCP	%	80			70-130	Pass	
4.4'-DDE	S14-Ap05844	NCP	%	100			70-130	Pass	
4.4'-DDT	S14-Ap05844	NCP	%	90			70-130	Pass	
a-BHC	S14-Ap05844	NCP	%	85			70-130	Pass	
Aldrin	S14-Ap05844	NCP	%	90			70-130	Pass	
b-BHC	S14-Ap05844	NCP	%	85			70-130	Pass	
d-BHC	S14-Ap05844	NCP	%	90			70-130	Pass	
Dieldrin	S14-Ap05844	NCP	%	85			70-130	Pass	
Endosulfan I	S14-Ap05844	NCP	%	85			70-130	Pass	
Endosulfan II	S14-Ap05844	NCP	%	80			70-130	Pass	
Endosulfan sulphate	S14-Ap05844	NCP	%	80			70-130	Pass	
Endrin	S14-Ap05844	NCP	%	85			70-130	Pass	
Endrin aldehyde	S14-Ap05844	NCP	%	80			70-130	Pass	
Endrin ketone	S14-Ap05844	NCP	%	80			70-130	Pass	
g-BHC (Lindane)	S14-Ap05844	NCP	%	85			70-130	Pass	
Heptachlor	S14-Ap05844	NCP	%	90			70-130	Pass	
Heptachlor epoxide	S14-Ap05844	NCP	%	85			70-130	Pass	
Hexachlorobenzene	S14-Ap05844	NCP	%	120			70-130	Pass	
Methoxychlor	S14-Ap05844	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Ap10235	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Ap05847	NCP	%	106			70-130	Pass	
Coumaphos	S14-Ap05847	NCP	%	102			70-130	Pass	
Diazinon	S14-Ap05847	NCP	%	94			70-130	Pass	
Dichlorvos	S14-Ap05847	NCP	%	96			70-130	Pass	
Dimethoate	S14-Ap05847	NCP	%	97			70-130	Pass	
Disulfoton	S14-Ap05847	NCP	%	82			70-130	Pass	
Ethoprop	S14-Ap05847	NCP	%	99			70-130	Pass	
Fenitrothion	S14-Ap05847	NCP	%	96			70-130	Pass	
Fensulfothion	S14-Ap05847	NCP	%	106			70-130	Pass	
Fenthion	S14-Ap05847	NCP	%	92			70-130	Pass	
Methyl azinphos	S14-Ap05847	NCP	%	98			70-130	Pass	
Malathion	S14-Ap05847	NCP	%	97			70-130	Pass	
Methyl parathion	S14-Ap05847	NCP	%	98			70-130	Pass	
Mevinphos	S14-Ap05847	NCP	%	103			70-130	Pass	
Monocrotophos	S14-Ap05847	NCP	%	96			70-130	Pass	
Parathion	S14-Ap05847	NCP	%	89			70-130	Pass	
Phorate	S14-Ap05847	NCP	%	85			70-130	Pass	
Profenofos	S14-Ap05847	NCP	%	101			70-130	Pass	
Prothiofos	S14-Ap05847	NCP	%	98			70-130	Pass	
Ronnel	S14-Ap05847	NCP	%	104			70-130	Pass	
Stirophos	S14-Ap05847	NCP	%	95			70-130	Pass	
Trichloronate	S14-Ap05847	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Ap06495	CP	%	79			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	S14-Ap06495	CP	%	91			70-130	Pass	
Toluene	S14-Ap06495	CP	%	98			70-130	Pass	
Ethylbenzene	S14-Ap06495	CP	%	85			70-130	Pass	
m&p-Xylenes	S14-Ap06495	CP	%	99			70-130	Pass	
o-Xylene	S14-Ap06495	CP	%	98			70-130	Pass	
Xylenes - Total	S14-Ap06495	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Ap06495	CP	%	82			70-130	Pass	
TRH C6-C10	S14-Ap06495	CP	%	73			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Ap06495	CP	%	86			70-130	Pass	
Cadmium	S14-Ap06495	CP	%	78			70-130	Pass	
Chromium	S14-Ap06495	CP	%	86			70-130	Pass	
Copper	S14-Ap06495	CP	%	89			70-130	Pass	
Lead	S14-Ap06495	CP	%	82			70-130	Pass	
Mercury	S14-Ap06495	CP	%	91			70-130	Pass	
Nickel	S14-Ap06495	CP	%	85			70-130	Pass	
Zinc	S14-Ap06495	CP	%	78			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06411	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06411	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06411	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06411	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06411	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06411	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06411	CP	mg/kg	< 2	2.0	64	30%	Fail	
Cadmium	S14-Ap06411	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06411	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06411	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06411	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06411	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06411	CP	mg/kg	7.4	5.6	28	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Ap06412	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06412	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06412	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Ap06412	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06412	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06412	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06412	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06421	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06421	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06421	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06421	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06421	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06421	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06421	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06421	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06421	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06421	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06421	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06421	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06421	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06421	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06421	CP	mg/kg	6.9	7.1	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Ap06422	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06422	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06422	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Ap06422	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06422	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06422	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06431	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06431	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06431	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06431	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06431	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06431	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06431	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06431	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06431	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06431	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06431	CP	mg/kg	0.7	0.9	26	30%	Pass	
TRH C6-C10	S14-Ap06431	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06431	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06431	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06431	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06431	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06431	CP	mg/kg	1.1	1.3	12	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06431	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06431	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06431	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06431	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06431	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06431	CP	mg/kg	8.7	8.6	1.0	30%	Pass	
Mercury	S14-Ap06431	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06431	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06431	CP	mg/kg	45	46	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06441	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06441	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06441	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06441	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06441	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06441	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06441	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06441	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06441	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06441	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06441	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06441	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06441	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06441	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06441	CP	mg/kg	6.5	6.1	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06451	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06451	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06451	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06451	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06451	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06451	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06451	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06451	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06451	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06451	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06451	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06451	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06451	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06451	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06451	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06451	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06451	CP	mg/kg	2.1	< 2	30	30%	Pass	
Cadmium	S14-Ap06451	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06451	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06451	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S14-Ap06451	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06451	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06451	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06451	CP	mg/kg	7.3	6.8	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06462	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06462	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06462	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06462	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06462	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06462	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06462	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06462	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06462	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06462	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06462	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06462	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06462	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06462	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06462	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06462	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06462	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06462	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06462	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06462	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06462	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06462	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06462	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06462	CP	mg/kg	24	29	14	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06472	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06472	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06472	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06472	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06472	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06472	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06472	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06472	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06472	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06472	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06472	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06472	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06472	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06472	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06472	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06472	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06472	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06472	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06472	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06472	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06472	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06472	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06472	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06472	CP	mg/kg	5.3	< 5	8.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06482	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Ap06482	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Ap06482	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Ap06482	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06482	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06482	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06482	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06482	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06482	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06482	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06482	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06482	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Ap06482	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Ap06482	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Ap06482	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Ap06482	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06482	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06482	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06482	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06482	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06482	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06482	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06482	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06482	CP	mg/kg	15	17	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Ap10200	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan II	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Ap10200	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Ap10200	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Ap10200	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Ap10200	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Ap05847	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Ap05847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Ap06495	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Ap06495	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Ap06495	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Ap06495	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Ap06495	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Ap06495	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Ap06495	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Ap06495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Ap06495	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Ap06495	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Ap06495	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Ap06495	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Ap06495	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Ap06495	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Ap06495	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Ap06495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Ap06495	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Ap06495	CP	mg/kg	8.4	8.8	4.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Ruth Callander	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Robert Carr and Associates Pty Ltd**

Contact name: Fiona Brooker
Client job number: KI BASELINE 10556
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 8, 2014 9:00 AM
Eurofins | mgt reference: **414510**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 8 degrees Celsius.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample TP7 not received - cancelled | Extra sample TP17C received and allocated Suite 7 analysis as per client request

Contact notes

If you have any questions with respect to these samples please contact:

Ruth Callander on Phone : (+61) (3) 8564 5000 or by e.mail: RuthCallander@eurofins.com.au

Results will be delivered electronically via e.mail to Fiona Brooker - fionab@rca.com.au.

Note: A copy of these results will also be delivered to the general Robert Carr and Associates Pty Ltd email address.

eurofins | mgt

Sydney
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

Brisbane
Unit 1-21 Smallwood Place, Murrarie
Phone +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

Melbourne
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name :	RCA Australia	Contact Name:	John Gilbert	Purchase Order :	COC Number :
Office Address :	92 Hill St Carrington NSW	Project Manager :	Fiona Brooker	PROJECT Number : 10556	Eurofins | mgt quote ID :
		Email for results :	johng@rca.com.au; fionab@rca.com.a	PROJECT Name : KI Baseline	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	TP1A	2/04/2014	Soil	x		
2	TP2A	2/04/2014	Soil	x		
3	TP3A	2/04/2014	Soil	x		
4	TP4A	2/04/2014	Soil	x		
5	TP5A	2/04/2014	Soil	x		
6	TP6A	3/04/2014	Soil	x		
7	TP7A	3/04/2014	Soil	x		
8	TP8A	2/04/2014	Soil	x		
9	TP9A	3/04/2014	Soil	x		
10	TP10A	3/04/2014	Soil	x		
11	TP11A	3/04/2014	Soil	x		
12	TP12A	2/04/2014	Soil	x		
13	TP13A	2/04/2014	Soil	x		
14	TP14A	2/04/2014	Soil	x		
15	TP15A	2/04/2014	Soil	x		
16	TP16A	3/04/2014	Soil	x		

Analytes

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff

Relinquished By:	Received By: Andrew Black
Date & Time::	Date & Time: 7/4/14 9am
Signature:	Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 8

Report number: 444510

RECEIVED
08 APR 2014
BY: Jasmine 9am

CHAIN OF CUSTODY RECORD

Page 1 of 1

CLIENT DETAILS

Company Name : RCA Australia

Office Address : 92 Hill St Carrington NSW

Contact Name:

Project Manager :

Email for results :

Purchase Order :

PROJECT Number :

PROJECT Name :

COC Number :

Eurofins | mgt quote ID :

Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	TP17A	3/04/2014	Soil	X		
2	TP18A	3/04/2014	Soil	X		
3	TP19A	2/04/2014	Soil	X		
4	TP20A	3/04/2014	Soil	X		
5	TP21A	3/04/2014	Soil	X		
6	TP22A	3/04/2014	Soil	X		
7	TP23A	3/04/2014	Soil	X		
8	TP24A	3/04/2014	Soil	X		
9	TP25A	3/04/2014	Soil	X		
10	TP26A	3/04/2014	Soil	X		
11	TP27A	3/04/2014	Soil	X		
12	TP28A	3/04/2014	Soil	X		
13	TP29A	3/04/2014	Soil	X		
14	TP30A	3/04/2014	Soil	X		
15	TP31A	3/04/2014	Soil	X		
16	TP32A	3/04/2014	Soil	X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Pheno's, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar

Sample comments:

Laboratory Staff

Relinquished By:

Date & Time::

Signature:

Received By:

Date & Time:

Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal

Courier Consignment # :

Temperature on arrival: 8

Report number: 414510

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0 8 APR 2014
BY: Jasmine Yan

CHAIN OF CUSTODY RECORD

Page 1 of 1

CLIENT DETAILS

Company Name :	RCA Australia
Office Address :	92 Hill St Carrington NSW

Contact Name:	Purchase Order :	COC Number :
Project Manager :	PROJECT Number :	Eurofins | mgt quote ID :
Email for results :	PROJECT Name :	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	TP1C	2/04/2014	Soil	X		
2	TP1D	2/04/2014	Soil	X		
3	TP2B	2/04/2014	Soil	X		
4	TP2C	2/04/2014	Soil	X		
5	TP2D	2/04/2014	Soil	X		
6	TP3D	2/04/2014	Soil	X		
7	TP3E	2/04/2014	Soil	X		
8	TP3F	2/04/2014	Soil	X		
9	TP4D	2/04/2014	Soil	X		
10	TP5D	2/04/2014	Soil	X		
11	TP6D	2/04/2014	Soil	X		
12	TP7	3/04/2014	Soil	X		
13	TP7D	3/04/2014	Soil	X		
14	TP7E	3/04/2014	Soil	X		
15	TP8C	2/04/2014	Soil	X		
16	TP8D	2/04/2014	Soil	X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar

Sample comments:

Laboratory Staff

Relinquished By:	Received By:
Date & Time::	Date & Time:
Signature:	Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
Hand Delivered
Postal
Courier Consignment # :

Temperature on arrival: 8

Report number: 414510

RECEIVED
08 APR 2014
BY: Jasmine Nam

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : RCA Australia

Office Address : 92 Hill St Carrington NSW

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Contact Name:

Project Manager :

Email for results :

Purchase Order :

PROJECT Number :

PROJECT Name :

COC Number :

Eurofins | mgt quote ID :

Data output format:

Analytes

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	TP9B	3/04/2014	Soil	X		
2	TP10B	3/04/2014	Soil	X		
3	TP11C	3/04/2014	Soil	X		
4	TP12D	2/04/2014	Soil	X		
5	TP13D	2/04/2014	Soil	X		
6	TP14D	2/04/2014	Soil	X		
7	TP15C	2/04/2014	Soil	X		
8	TP16B	3/04/2014	Soil	X		
9	TP16D	3/04/2014	Soil	X		
10	TP17D	3/04/2014	Soil	X		
11	TP18C	3/04/2014	Soil	X		
12	TP19C	2/04/2014	Soil	X		
13	TP19D	2/04/2014	Soil	X		
14	TP20C	3/04/2014	Soil	X		
15	TP21D	3/04/2014	Soil	X		
16	TP22C	3/04/2014	Soil	X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff

Relinquished By:

Date & Time::

Signature:

Received By:

Date & Time:

Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal

Courier Consignment # |

Temperature on arrival: 8

Report number: 414510

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0 8 APR 2014
BY: Jasmine 9am

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : RCA Australia

Office Address : 92 Hill St Carrington NSW

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Contact Name:

Project Manager :

Email for results :

Purchase Order :

PROJECT Number :

PROJECT Name :

COC Number :

Eurofins | mgt quote ID :

Data output format:

Analytes

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	TP23D	3/04/2014	Soil	X		
2	TP24C	3/04/2014	Soil	X		
3	TP24D	3/04/2014	Soil	X		
4	TP24E	3/04/2014	Soil	X		
5	TP25D	3/04/2014	Soil	X		
6	TP25E	3/04/2014	Soil	X		
7	TP26C	3/04/2014	Soil	X		
8	TP26D	3/04/2014	Soil	X		
9	TP27C	3/04/2014	Soil	X		
10	TP28C	3/04/2014	Soil	X		
11	TP29C	3/04/2014	Soil	X		
12	TP30B	3/04/2014	Soil	X		
13	TP31D	3/04/2014	Soil	X		
14	TP32C	3/04/2014	Soil	X		
15	QB1	2/04/2014	Soil	X		
16	QB2	3/04/2014	Soil	X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar

Sample comments:

Laboratory Staff

Relinquished By:

Date & Time::

Signature:

Received By:

Date & Time:

Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal

Courier Consignment # :

Temperature on arrival: 8

Report number: 414510

RECEIVED
0 8 APR 2014
BY: Jasmine 9am

CHAIN OF CUSTODY RECORD

Page 1 of 1

CLIENT DETAILS

Company Name : RCA Australia	**Contact Name:**	**Purchase Order :**	**COC Number :**
Office Address : 92 Hill St Carrington NSW	**Project Manager :**	**PROJECT Number :**	**Eurofins | mgt quote ID :**
	Email for results :	**PROJECT Name :**	**Data output format:**

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Combo 7	Combo15	TRH(C6-C9), BTEX
1	Comp1	2/04/2014	Soil		x	
2	Comp2	3/04/2014	Soil		x	
3	Comp3	3/04/2014	Soil		x	
4						
5	QA2	2/04/2014	Soil	x		
6	QA8(1)	3/04/2014	Soil	x		
7	QA8	3/04/2014	Soil	x		
8	QA10	3/04/2014	Soil	x		
9						
10	TS/TB	2/04/2014	Soil			x
11						
12						
13						
14						
15						
16						

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous Iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar

Sample comments:

Laboratory Staff

Relinquished By:	**Received By:**
Date & Time::	**Date & Time:**
Signature:	**Signature:**

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 8

Report number: 414510

RECEIVED
0 8 APR 2014
BY: Jasmine 9am

#414510 ok 9/4/14

Sample Receipt 1 Syd

Subject: FW: Eurofins | mgt Sample Receipt Advice - Report 414510 : Site KI BASELINE 10556

-----Original Message-----
From: John Gilbert [mailto:johng@rca.com.au]
Sent: Wednesday, 9 April 2014 9:41 AM
To: EnviroSampleNSW
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 414510 : Site KI BASELINE 10556

Hello,

Would you be able to place TP17C on the COC and test for Combo 7? Sorry for the inconvenience

Regards,

John Gilbert

PO Box175, 92 Hill Street,
NSW,
2294
http://www.rca.com.au
Phone: 02 49029200
Mobile:
E-mail:
mailto:johng@rca.com.au

A division of RCA
Australia

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1407458**	Page	: 1 of 6
Client	: **ROBERT CARR & ASSOCIATES P/L**	Laboratory	: Environmental Division Sydney
Contact	: MS FIONA BROOKER	Contact	: Client Services
Address	: P O BOX 175 CARRINGTON NSW, AUSTRALIA 2294	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: fionab@rca.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 4902 9200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 4902 9299	Facsimile	: +61-2-8784 8500
Project	: KI BASELINE 10556	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-APR-2014
Sampler	: JG	Issue Date	: 12-APR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: SY/393/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QA4	QA6	QA9	QA12	----
				Client sampling date / time	02-APR-2014 00:00	03-APR-2014 15:00	03-APR-2014 15:00	[04-APR-2014]	----
Compound	CAS Number	LOR	Unit		ES1407458-001	ES1407458-002	ES1407458-003	ES1407458-004	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		<1.0	1.9	2.0	1.7	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg		2	2	2	<2	----
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	----
Lead	7439-92-1	5	mg/kg		5	<5	<5	<5	----
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	----
Zinc	7440-66-6	5	mg/kg		18	22	18	8	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	0.6	0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	0.7	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	0.6	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	1.9	0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QA4	QA6	QA9	QA12	----
				Client sampling date / time	02-APR-2014 00:00	03-APR-2014 15:00	03-APR-2014 15:00	[04-APR-2014]	----
Compound	CAS Number	LOR	Unit		ES1407458-001	ES1407458-002	ES1407458-003	ES1407458-004	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		**96.9**	**108**	**104**	**103**	----
2-Chlorophenol-D4	93951-73-6	0.1	%		**97.9**	**108**	**113**	**105**	----
2.4.6-Tribromophenol	118-79-6	0.1	%		**81.7**	**82.0**	**85.2**	**77.1**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**100**	**108**	**111**	**99.8**	----
Anthracene-d10	1719-06-8	0.1	%		**105**	**111**	**116**	**105**	----
4-Terphenyl-d14	1718-51-0	0.1	%		**104**	**109**	**115**	**104**	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		**108**	**111**	**107**	**109**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QA4	QA6	QA9	QA12	----
			Client sampling date / time	02-APR-2014 00:00	03-APR-2014 15:00	03-APR-2014 15:00	[04-APR-2014]	----
Compound	CAS Number	LOR	Unit	ES1407458-001	ES1407458-002	ES1407458-003	ES1407458-004	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	**106**	**104**	**105**	**106**	----
4-Bromofluorobenzene	460-00-4	0.1	%	**102**	**96.8**	**101**	**103**	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

QUALITY CONTROL REPORT

Work Order	: **ES1407458**	Page	: 1 of 9
Client	: **ROBERT CARR & ASSOCIATES P/L**	Laboratory	: Environmental Division Sydney
Contact	: MS FIONA BROOKER	Contact	: Client Services
Address	: P O BOX 175 CARRINGTON NSW, AUSTRALIA 2294	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: fionab@rca.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 4902 9200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 4902 9299	Facsimile	: +61-2-8784 8500
Project	: KI BASELINE 10556	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 04-APR-2014
Sampler	: JG	Issue Date	: 12-APR-2014
Order number	: ----		
		No. of samples received	: 4
Quote number	: SY/393/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 3382363)									
ES1407418-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	49.9	41.6	18.1	0% - 20%
ES1407488-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	39.2	33.5	15.6	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3384632)									
ES1407458-001	QA4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	20	7.0	No Limit
ES1407459-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	7	7	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3384633)									
ES1407458-001	QA4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3378394)									
ES1407458-001	QA4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3378394) - continued									
ES1407458-001	QA4	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1407591-012	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3378376)									
ES1407458-001	QA4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1407537-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3378393)									
ES1407458-001	QA4	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES1407591-012	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	160	120	27.4	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3378376)									
ES1407458-001	QA4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1407537-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3378393)									
ES1407458-001	QA4	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1407591-012	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	190	160	15.9	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3378393) - continued									
ES1407591-012	Anonymous	EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 3378376)									
ES1407458-001	QA4	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1407537-003	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3384632)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	113	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	109	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	102	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	116	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	110	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	109	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3384633)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	89.6	70	105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3378394)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	115	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	109	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	114	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	113	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	115	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	117	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	112	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	104	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	109	81	123
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	99.3	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	108	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	110	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	96.2	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	94.2	71.7	113
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.1	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378376)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.9	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378393)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	103	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	98.7	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	86.3	64	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378376)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	75.5	68.4	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378393)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	105	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	92.6	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	67.2	63	131
EP080: BTEXN (QCLot: 3378376)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	95.1	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	91.3	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	82.0	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	81.0	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	89.7	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	98.4	62	138

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 3384632)							
ES1407458-001	QA4	EG005T: Arsenic	7440-38-2	50 mg/kg	116	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	111	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	114	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	115	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	111	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	115	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3384633)							
ES1407458-001	QA4	EG035T: Mercury	7439-97-6	5 mg/kg	97.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3378394)							
ES1407458-001	QA4	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	100	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378376)							
ES1407458-001	QA4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378393)							
ES1407458-001	QA4	EP071: C10 - C14 Fraction	----	640 mg/kg	74.9	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.6	53	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378393) - continued							
ES1407458-001	QA4	EP071: C29 - C36 Fraction	----	2860 mg/kg	82.7	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378376)							
ES1407458-001	QA4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.2	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378393)							
ES1407458-001	QA4	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	68.1	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.8	52	132
EP080: BTEXN (QCLot: 3378376)							
ES1407458-001	QA4	EP080: Benzene	71-43-2	2.5 mg/kg	96.2	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	95.8	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	94.0	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.8	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	95.1	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	70	130

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378376)										
ES1407458-001	QA4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.5	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378376)										
ES1407458-001	QA4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.2	----	70	130	----	----
EP080: BTEXN (QCLot: 3378376)										
ES1407458-001	QA4	EP080: Benzene	71-43-2	2.5 mg/kg	96.2	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	95.8	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	94.0	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.8	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	95.1	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378393)										
ES1407458-001	QA4	EP071: C10 - C14 Fraction	----	640 mg/kg	74.9	----	73	137	----	----

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3378393) - continued										
ES1407458-001	QA4	EP071: C15 - C28 Fraction	----	3140 mg/kg	77.6	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	82.7	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3378393)										
ES1407458-001	QA4	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	68.1	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.8	----	52	132	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3378394)										
ES1407458-001	QA4	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	100	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3384632)										
ES1407458-001	QA4	EG005T: Arsenic	7440-38-2	50 mg/kg	116	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	111	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	114	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	115	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	111	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	103	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	115	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3384633)										
ES1407458-001	QA4	EG035T: Mercury	7439-97-6	5 mg/kg	97.7	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1407458**	Page	: 1 of 6
Client	: ROBERT CARR & ASSOCIATES P/L	Laboratory	: Environmental Division Sydney
Contact	: MS FIONA BROOKER	Contact	: Client Services
Address	: P O BOX 175 CARRINGTON NSW, AUSTRALIA 2294	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: fionab@rca.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 4902 9200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 4902 9299	Facsimile	: +61-2-8784 8500
Project	: KI BASELINE 10556	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 04-APR-2014
Sampler	: JG	Issue Date	: 12-APR-2014
Order number	: ----		
		No. of samples received	: 4
Quote number	: SY/393/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) QA4	**02-APR-2014**	**----**	----	----	**09-APR-2014**	16-APR-2014	✓
Soil Glass Jar - Unpreserved (EA055-103) QA6, QA9	**03-APR-2014**	**----**	----	----	**09-APR-2014**	17-APR-2014	✓
Soil Glass Jar - Unpreserved (EA055-103) QA12	**04-APR-2014**	**----**	----	----	**09-APR-2014**	18-APR-2014	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QA4	**02-APR-2014**	**10-APR-2014**	29-SEP-2014	✓	**10-APR-2014**	29-SEP-2014	✓
Soil Glass Jar - Unpreserved (EG005T) QA6, QA9	**03-APR-2014**	**10-APR-2014**	30-SEP-2014	✓	**10-APR-2014**	30-SEP-2014	✓
Soil Glass Jar - Unpreserved (EG005T) QA12	**04-APR-2014**	**10-APR-2014**	01-OCT-2014	✓	**10-APR-2014**	01-OCT-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QA4	**02-APR-2014**	**10-APR-2014**	30-APR-2014	✓	**11-APR-2014**	30-APR-2014	✓
Soil Glass Jar - Unpreserved (EG035T) QA6, QA9	**03-APR-2014**	**10-APR-2014**	01-MAY-2014	✓	**11-APR-2014**	01-MAY-2014	✓
Soil Glass Jar - Unpreserved (EG035T) QA12	**04-APR-2014**	**10-APR-2014**	02-MAY-2014	✓	**11-APR-2014**	02-MAY-2014	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) QA4	**02-APR-2014**	**07-APR-2014**	16-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓
Soil Glass Jar - Unpreserved (EP071) QA6, QA9	**03-APR-2014**	**07-APR-2014**	17-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓
Soil Glass Jar - Unpreserved (EP071) QA12	**04-APR-2014**	**07-APR-2014**	18-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QA4	**02-APR-2014**	**07-APR-2014**	16-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QA6, QA9	**03-APR-2014**	**07-APR-2014**	17-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QA12	**04-APR-2014**	**07-APR-2014**	18-APR-2014	✓	**10-APR-2014**	17-MAY-2014	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QA4	**02-APR-2014**	**08-APR-2014**	16-APR-2014	✓	**09-APR-2014**	16-APR-2014	✓
Soil Glass Jar - Unpreserved (EP080) QA6, QA9	**03-APR-2014**	**08-APR-2014**	17-APR-2014	✓	**09-APR-2014**	17-APR-2014	✓
Soil Glass Jar - Unpreserved (EP080) QA12	**04-APR-2014**	**08-APR-2014**	18-APR-2014	✓	**09-APR-2014**	18-APR-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Soil Glass Jar - Unpreserved (EP080) QA4	**02-APR-2014**	**08-APR-2014**	16-APR-2014	✓	**09-APR-2014**	16-APR-2014	✓
Soil Glass Jar - Unpreserved (EP080) QA6, QA9	**03-APR-2014**	**08-APR-2014**	17-APR-2014	✓	**09-APR-2014**	17-APR-2014	✓
Soil Glass Jar - Unpreserved (EP080) QA12	**04-APR-2014**	**08-APR-2014**	18-APR-2014	✓	**09-APR-2014**	18-APR-2014	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (2013) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

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

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

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

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1407458**		
Client	: **ROBERT CARR & ASSOCIATES P/L**	Laboratory	: Environmental Division Sydney
Contact	: MS FIONA BROOKER	Contact	: Client Services
Address	: P O BOX 175 CARRINGTON NSW, AUSTRALIA 2294	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: fionab@rca.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 4902 9200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 4902 9299	Facsimile	: +61-2-8784 8500
Project	: KI BASELINE 10556	Page	: 1 of 2
Order number	: ----		
C-O-C number	: ----	Quote number	: ES2013ROBCAR0324 (SY/393/13)
Site	: ----		
Sampler	: JG	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 04-APR-2014	Issue Date	: 05-APR-2014 08:52
Client Requested Due Date	: 11-APR-2014	Scheduled Reporting Date	: **11-APR-2014**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 3.7'C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 4
Security Seal	: Intact.	No. of samples analysed	: 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1407458-001	02-APR-2014 00:00	QA4	✓
ES1407458-002	03-APR-2014 15:00	QA6	✓
ES1407458-003	03-APR-2014 15:00	QA9	✓
ES1407458-004	[04-APR-2014]	QA12	✓

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES

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

JOHN GILBERT

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

MS DANIELLE WHITE

- A4 - AU Tax Invoice (INV)	Email	daniellew@rca.com.au

MS FIONA BROOKER

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2176 Ph: 02 8784 8555 E:samples.sydney@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph:07 3243 7222 E:samples.brisbane@alsenviro.com
☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph:03 8549 9600 E: samples.melbourne@alsenviro.com
☐ Perth: 10 Hod Way, Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph:02 4968 0433 E:samples.newcastle@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph:07 4796 0600 E: townsville.environmental@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E:adelaide@alsenviro.com
☐ Launceston: 27 Wellington St, Launceston TAS 7250 Ph: 03 6331 2158 E: launceston@alsenviro.com

CLIENT:	RCA	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	92 Hill St Carrington		
PROJECT:	KI Baseline PROJECT NO 10556	ALS QUOTE NO.: SY/393/13	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER:	PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	FOR LABORATORY USE ONLY (Circle) Custody Seal Intact? Yes No N/A; Free ice / frozen ice bricks present upon receipt? Yes No N/A; Random Sample Temperature on Receipt: 2 °C; Other comments:
PROJECT MANAGER:	Fiona Brooker	CONTACT PH:	
SAMPLER:	John Gilbert	SAMPLER MOBILE:	
COC Emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed):	johng@rca.com.au; fionab@rca.com.au		
Email Invoice to (will default to PM if no other addresses are listed):	as above + daniellw@rca.com.au		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: 4/5/14.12.60	DATE/TIME: 12.45 pm	DATE/TIME: 1700	DATE/TIME: 4-4-14 19:00

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	BTEX, TRH, PAH, Metals B								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	QA4	2/04/2014 0:00	Soil			X								
2	QA6	3/04/2014	Soil			X								
3	QA9	3/04/2014	Soil			X								
4	QA12	Apr-14	Soil			X								
				TOTAL										

E-MAILED

Environmental Division
Sydney
Work Order
ES1407458

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

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Certificate of Analysis

Robert Carr and Associates Pty Ltd
PO Box 175
Carrington
NSW 2294

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Fiona Brooker**

Report **418379-W**
Client Reference KOORAGANG ISLAND SERVICE STATION 10556
Received Date May 15, 2014

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**MW1** **Water** **M14-My12556** **May 14, 2014**	**MW2** **Water** **M14-My12557** **May 14, 2014**	**MW3** **Water** **M14-My12558** **May 14, 2014**	**TB** **Water** **M14-My12559** **May 14, 2014**
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	51	78	82	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			MW1	MW2	MW3	TB
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			M14-My12556	M14-My12557	M14-My12558	M14-My12559
Date Sampled			May 14, 2014	May 14, 2014	May 14, 2014	May 14, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	82	76	55	-
p-Terphenyl-d14 (surr.)	1	%	94	87	63	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.002	0.001	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc (filtered)	0.001	mg/L	0.004	0.005	0.005	-

Client Sample ID			TS	MW4
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M14-My12560	M14-My12561
Date Sampled			May 14, 2014	May 14, 2014
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	88%	< 0.02
TRH C10-C14	0.05	mg/L	-	< 0.05
TRH C15-C28	0.1	mg/L	-	< 0.1
TRH C29-C36	0.1	mg/L	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	< 0.1
BTEX				
Benzene	0.001	mg/L	106%	< 0.001
Toluene	0.001	mg/L	100%	< 0.001
Ethylbenzene	0.001	mg/L	97%	< 0.001
m&p-Xylenes	0.002	mg/L	103%	< 0.002
o-Xylene	0.001	mg/L	101%	< 0.001
Xylenes - Total	0.003	mg/L	102%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	100	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.02	mg/L	-	< 0.02
TRH C6-C10	0.02	mg/L	104%	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	< 0.1
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	-	< 0.001
Acenaphthylene	0.001	mg/L	-	< 0.001
Anthracene	0.001	mg/L	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	< 0.001

Client Sample ID			TS	MW4
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**M14-My12560**	**M14-My12561**
Date Sampled			**May 14, 2014**	**May 14, 2014**
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	< 0.001
Chrysene	0.001	mg/L	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	< 0.001
Fluoranthene	0.001	mg/L	-	< 0.001
Fluorene	0.001	mg/L	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	< 0.001
Naphthalene	0.001	mg/L	-	< 0.001
Phenanthrene	0.001	mg/L	-	< 0.001
Pyrene	0.001	mg/L	-	< 0.001
Total PAH	0.001	mg/L	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	59
p-Terphenyl-d14 (surr.)	1	%	-	70
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	-	0.003
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	< 0.001
Copper (filtered)	0.001	mg/L	-	< 0.001
Lead (filtered)	0.001	mg/L	-	< 0.001
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	< 0.001
Zinc (filtered)	0.001	mg/L	-	0.003

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 19, 2014	7 Day
- Method: TRH C6-C36 - MGT 100A			
BTEX	Melbourne	May 15, 2014	14 Day
- Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons and MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 19, 2014	7 Day
- Method: LM-LTM-ORG2010			
Eurofins | mgt Suite 7 (filtered metals)			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 19, 2014	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Metals M8 filtered	Melbourne	May 15, 2014	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			

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3-5 Kingston Town Close
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NATA # 1261
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Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Robert Carr and Associates Pty Ltd	**Order No.:**		**Received:**	May 15, 2014 8:43 AM
Address:	PO Box 175	**Report #:**	418379	**Due:**	May 22, 2014
	Carrington	**Phone:**	02 4902 9200	**Priority:**	5 Day
	NSW 2294	**Fax:**	02 4902 9299	**Contact Name:**	Fiona Brooker
Client Job No.:	KOORAGANG ISLAND SERVICE STATION 10556				

Eurofins | mgt Client Manager: Ruth Callander

Sample Detail					Eurofins | mgt Suite 7 (filtered metals)	BTEX and Volatile TRH	BTEX and Volatile TRH
Laboratory where analysis is conducted							
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	
Sydney Laboratory - NATA Site # 18217							X
Brisbane Laboratory - NATA Site # 20794							
External Laboratory							
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
MW1	May 14, 2014		Water	M14-My12556	X		
MW2	May 14, 2014		Water	M14-My12557	X		
MW3	May 14, 2014		Water	M14-My12558	X		
TB	May 14, 2014		Water	M14-My12559		X	
TS	May 14, 2014		Water	M14-My12560			X
MW4	May 14, 2014		Water	M14-My12561	X		

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	123			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	105			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
Xylenes - Total	%	92			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	128			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	109			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	110			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	122			70-130	Pass	
Benzo(b&j)fluoranthene	%	119			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	109			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	128			70-130	Pass	
Fluoranthene	%	97			70-130	Pass	
Fluorene	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	118			70-130	Pass	
Naphthalene	%	111			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	98			80-120	Pass	
Cadmium (filtered)	%	97			80-120	Pass	
Chromium (filtered)	%	96			80-120	Pass	
Copper (filtered)	%	99			80-120	Pass	
Lead (filtered)	%	99			80-120	Pass	
Mercury (filtered)	%	81			70-130	Pass	
Nickel (filtered)	%	96			80-120	Pass	
Zinc (filtered)	%	101			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M14-My12982	NCP	%	120			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M14-My12982	NCP	%	88			70-130	Pass	
Toluene	M14-My12982	NCP	%	80			70-130	Pass	
Ethylbenzene	M14-My12982	NCP	%	81			70-130	Pass	
m&p-Xylenes	M14-My12982	NCP	%	83			70-130	Pass	
o-Xylene	M14-My12982	NCP	%	79			70-130	Pass	
Xylenes - Total	M14-My12982	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M14-My12982	NCP	%	120			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M14-My15651	NCP	%	89			70-130	Pass	
Cadmium (filtered)	M14-My15651	NCP	%	92			70-130	Pass	
Chromium (filtered)	M14-My15651	NCP	%	82			70-130	Pass	
Copper (filtered)	M14-My15704	NCP	%	76			70-130	Pass	
Lead (filtered)	M14-My15651	NCP	%	95			70-130	Pass	
Nickel (filtered)	M14-My15651	NCP	%	81			70-130	Pass	
Zinc (filtered)	M14-My15651	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M14-My12557	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M14-My12557	CP	%	109			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M14-My12558	CP	%	104			70-130	Pass	
Acenaphthylene	M14-My12558	CP	%	104			70-130	Pass	
Anthracene	M14-My12558	CP	%	104			70-130	Pass	
Benz(a)anthracene	M14-My12558	CP	%	96			70-130	Pass	
Benzo(a)pyrene	M14-My12558	CP	%	123			70-130	Pass	
Benzo(b&j)fluoranthene	M14-My12558	CP	%	122			70-130	Pass	
Benzo(g.h.i)perylene	M14-My12558	CP	%	102			70-130	Pass	
Benzo(k)fluoranthene	M14-My12558	CP	%	127			70-130	Pass	
Chrysene	M14-My12558	CP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	M14-My12558	CP	%	124			70-130	Pass	
Fluoranthene	M14-My12558	CP	%	99			70-130	Pass	
Fluorene	M14-My12558	CP	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M14-My12558	CP	%	115			70-130	Pass	
Naphthalene	M14-My12558	CP	%	105			70-130	Pass	
Phenanthrene	M14-My12558	CP	%	104			70-130	Pass	
Pyrene	M14-My12558	CP	%	99			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M14-My12983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M14-My12556	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M14-My12556	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M14-My12556	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M14-My12983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M14-My12983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M14-My12983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M14-My12983	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M14-My12983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M14-My12983	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M14-My12983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	M14-My12983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M14-My12983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M14-My12556	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C16-C34	M14-My12556	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M14-My12556	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M14-My12556	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M14-My15651	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	M14-My15651	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M14-My15651	NCP	mg/L	0.0015	0.0011	23	30%	Pass	
Copper (filtered)	M14-My15651	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M14-My15651	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M14-My13157	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M14-My15651	NCP	mg/L	0.0011	0.0011	1.9	30%	Pass	
Zinc (filtered)	M14-My15651	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Ruth Callander	Client Services
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Glenn Jackson

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Robert Carr and Associates Pty Ltd**

Contact name: Fiona Brooker
Client job number: KOORAGANG ISLAND SERVICE STATION 10556
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 15, 2014 8:43 AM
Eurofins | mgt reference: **418379**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 6.8 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☒ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Ruth Callander on Phone : (+61) (3) 8564 5000 or by e.mail: RuthCallander@eurofins.com.au

Results will be delivered electronically via e.mail to Fiona Brooker - fionab@rca.com.au.

Note: A copy of these results will also be delivered to the general Robert Carr and Associates Pty Ltd email address.

Eurofins | mgt Sample Receipt

AP2M000905

COURIER

eurofins | mgt

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : RCA Australia	**Contact Name:** John Gilbert	**Purchase Order :**	**COC Number :**
Office Address : 92 Hill St Carrington NSW	**Project Manager :** Fiona Brooker	**PROJECT Number :** 10556	**Eurofins | mgt quote ID :**
	Email for results : johng@rca.com.au; fionab@ra.com.au	**PROJECT Name :** Kooragang Island Service Station	**Data output format:**

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Combo 7 (TRH, BTEX, PAH, Metals (As,Cd,Cr,Cu,Ni,Pb,Zn,Hg)	TRH (C6-C9), BTEX
1	MW1	14/05/014	water	x	
2	MW2	14/05/2014		x	
3	MW3	14/05/015		x	
4	TS/TB	14/05/2014			x
5	DUP4	14/5/14		X	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Laboratory Staff

Relinquished By:

Date & Time::

Signature:

Received By: Andrew Black

Date & Time: 14/5/14 3:45pm

Signature: A Black

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal

Courier Consignment # :

Temperature on arrival:

Report number: 418379.

Tony W.
15/5/14 8:43am.
~~Rpt: 418379.~~

Appendix J

Exposure Scenarios

Table 5-A

Residential with garden/accessible soil

Summary of Exposure Pathways	Abbreviations	Units	Parameters	
			Adult	Child
Body weight	BW_A or BW_C	kg	70	15
Exposure duration	ED_A or ED_C	years	29	6
Exposure frequency	EF	days	365	365
Soil/dust ingestion rate[1]	IR_{SA} or IR_{SC}	mg/day	50 [2]	100 [2]
Soil/dust to skin adherence factor	AF	$mg/cm^2/day$	0.5	0.5
Skin surface area	SA_A or SA_C	cm^2	20 000	6100
Fraction of skin exposed	F_s	%	31.5	44.3
Dermal absorption factor	DAF	%	Chemical specific values applied	
Time spent indoors on site each day	ET_i	hours	20	20
Time spent outdoors on site each day	ET_o	hours	4	4
Home-grown fraction of vegetables consumed	F_{HG}	%	10	10
Vegetable & fruit consumption rate	C_y (veg and fruit)	g/day	400	280
Averaging time for carcinogens (‘lifetime’)	AT_{NT}	years	70	70
Dust lung retention factor	RF	%	37.5	37.5

Soil ingestion rates for children are based on a child aged two to three years where normal hand-to-mouth activity is assumed and does not account for pica behaviour.

Soil ingestion rates for the HIL ‘A’ scenario include the ingestion of both outdoor soil, including soil adhering to home-grown produce, and indoor dust (derived from outdoor soil tracked indoors)

Table 5-B
Residential with minimal soil access

Summary of Exposure Pathways	Abbreviations	Units	Parameters	
			Adult	Child
Body weight	BW_A or BW_C	kg	70	15
Exposure duration	ED_A or ED_C	years	29	6
Exposure frequency	EF	days	365	365
Soil/dust ingestion rate[1]	IR_{SA} or IR_{SC}	mg/day	12.5 [3]	25 [3]
Soil/dust to skin adherence factor	AF	$mg/cm^2/day$	0.5	0.5
Skin surface area	SA_A or SA_C	cm^2	20 000	6100
Fraction of skin exposed	F_s	%	31.5	44.3
Dermal absorption factor	DAF	%	Chemical specific values applied	
Time spent indoors on site each day	ET_i	hours	20	20
Time spent outdoors on site each day	ET_o	hours	1	1
Home-grown fraction of vegetables consumed	F_{HG}	%	0	0
Vegetable and fruit consumption rate	C_y (veg and fruit)	g/day	-	-
Averaging time for carcinogens ('lifetime')	AT_{NT}	years	70	70
Dust lung retention factor	RF	%	37.5	37.5

Soil ingestion rates for children are based on a child aged two to three years where normal hand-to-mouth activity is assumed and does not account for pica behaviour.

Soil ingestion rates for the HIL 'B' scenario are based on the assumption that a quarter of the HIL 'A' soil/dust ingestion occurs.

Table 5-C
Public open space/recreational areas

Summary of Exposure Pathways	Abbreviations	Units	Parameters	
			Adult	Child
Body weight	BW_A or BW_C	kg	70	15
Exposure duration	ED_A or ED_C	years	29	6
Exposure frequency	EF	days	365	365
Soil/dust ingestion rate[1]	IR_{SA} or IR_{SC}	mg/day	25 [4]	50 [4]
Soil/dust to skin adherence factor	AF	$mg/cm^2/day$	0.5	0.5
Skin surface area	SA_A or SA_C	cm^2	20 000	6100
Fraction of skin exposed	F_s	%	31.5	44.3
Dermal absorption factor	DAF	%	Chemical specific values applied	
Time spent indoors on site each day	ET_i	hours	0	0
Time spent outdoors on site each day	ET_o	hours	2	2
Home-grown fraction of vegetables consumed	F_{HG}	%	0	0
Vegetable & fruit consumption rate	C_y (veg and fruit)	g/day	-	-
Averaging time for carcinogens (‘lifetime’)	AT_{NT}	years	70	70
Dust lung retention factor	RF	%	37.5	37.5

Soil ingestion rates for children are based on a child aged two to three years where normal hand-to-mouth activity is assumed and does not account for pica behaviour.

Soil ingestion rates for the HIL ‘C’ scenario are based on the assumption that half of the HIL ‘A’ soil/dust ingestion occurs, i.e. ingestion of outdoor soil only (no indoor dust).

Table 5-D
Commercial/Industrial premises

Summary of Exposure Pathways	Abbreviations	Units	Parameters
			Adult
Body weight	BW_A or BW_C	kg	70
Exposure duration	ED_A or ED_C	years	30
Exposure frequency	EF	days	240
Soil/dust ingestion rate[1]	IR_{SA} or IR_{SC}	mg/day	25 [5]
Soil/dust to skin adherence factor	AF	$mg/cm^2/day$	0.5
Skin surface area	SA_A or SA_C	cm^2	20 000
Fraction of skin exposed	F_s	%	19
Dermal absorption factor	DAF	%	Chemical specific values applied
Time spent indoors on site each day	ET_i	hours	8
Time spent outdoors on site each day	ET_o	hours	1
Home-grown fraction of vegetables consumed	F_{HG}	%	0
Vegetable & fruit consumption rate	C_y (veg and fruit)	g/day	-
Averaging time for carcinogens ('lifetime')	AT_{NT}	years	70
Dust lung retention factor	RF	%	37.5

Soil ingestion rates for children are based on a child aged two to three years where normal hand-to-mouth activity is assumed and does not account for pica behaviour. Soil ingestion rates for the HIL 'D' scenario are based on the default soil/dust ingestion rates, corrected for an eight hour/day daily exposure duration (50% of total waking hours).

Appendix K

Summary of Results

Sample Identification	PQL	Guideline [A]						TP1A	TP2A	TP3A	TP4A	TP5A	TP6A	TP7A	TP8A	TP9A	TP10A
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14
Sample Profile								Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Industrial)

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP11A	TP12A	TP13A	TP14A	TP15A	TP16A	TP17A	TP18A	TP19A	TP20A
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		3/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	2.2	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP21A	TP22A	TP23A	TP24A	TP25A	TP26A	TP27A	TP28A	TP29A	TP30A
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	1.1	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP31A	TP32A	TP1C	TP1D	TP2B	TP2C	TP2D	TP3D	TP3E	TP3F
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	0.3	0.3	1.3	2	1	1.3	1.95	2.5	2.6	2.7
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		3/4/14	3/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14
Sample Profile								Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Clay, Black, moist	Fill; Clay, dark grey, moist	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silty SAND, dark brown motled orage, moist, fine grained	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silt with organic matter, moist	Fill; Sandy CLAY, dark grey, with shell fragments, wet	Fill; Sand, dark grey, fine to medium grained, with shell fragments, wet
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	200	160	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP4D	TP5D	TP6D	TP7D	TP7E	TP8C	TP8D	TP9B	TP10B	TP11C
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	2.8	2.9	3	2.8	3	2	3	1	1	2
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; sandy CLAY, dark grey, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Vegetative matter mixed with and, grey.	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	8.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	150	< 100	< 100	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP12D	TP13D	TP14D	TP15C	TP16B	TP16D	TP17C	TP17D	TP18C	TP19C
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	3	3	2.7	2	1	2.8	2	3	2	2
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silty CLAY, Black wih some sand, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	14	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	460	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP19D	TP20C	TP21D	TP22C	TP23D	TP24C	TP24D	TP24E	TP25D	TP25E
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	2.7	2	3	1.3	3	2	2.5	2.7	2.5	3
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Silty Clay, black, with fine grained sand	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Silty Clay, black, with fine grained sand	Fill; Sand, grey, fine to medium grained, with shell fragments, wet
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)																	
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)																	
Naphthalene	0.5	NL	NL	NL	370		11000	< 0.5	< 0.5	< 0.5	12	< 0.5	< 0.5	5.2	< 0.5	2.2	< 0.5
Total Recoverable Hydrocarbons (TRH)																	
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	320	< 100	< 100	160	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]						TP26C	TP26D	TP27C	TP28C	TP29C	TP30B	TP31D	TP32C
Sample Depth (m) [B]		HSL 'D'			ESL C&I	Non-sensitive ML	DC D	2	2.5	2	2	1.5	1	2.8	2
Date		SAND 0-<1m	SAND 1-<2m	SAND 2-<4m	Coarse	Coarse		3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile								Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, dark brown, moist, medium grained, with shell fragments and silt	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Dominant Stratum [C]								SAND	SAND	SAND	SAND	SAND	SAND	SAND	SAND
Sample Purpose								baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by								JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference								414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)															
Benzene	0.1	3	3	3	75		430	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	NL	NL	NL	135		99000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	NL	NL	NL	165		27000	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
meta- and para-Xylene	0.2							< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
ortho-Xylene	0.1							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Xylenes	0.3	230	NL	NL	180		81000	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Polycyclic Aromatic Hydrocarbons (PAH)															
Naphthalene	0.5	NL	NL	NL	370		11000	2.1	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons (TRH)															
TRH C6-C10	20					700	26000	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH >C10-C16	50				170	1000	20000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TRH >C16-C34	100				1700	3500	27000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
TRH >C34-C40	100				3300	10000	38000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F1	20	260	370	630	215			<20	<20	<20	<20	<20	<20	<20	<20
F2	50	NL	NL	NL				<50	<50	<50	<50	<50	<50	<50	<50

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 1999 (amended April 2013) Vapour Based Health Screening Levels (HSL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Screening Levels (ESL) C&I (Commercial and Industrial)

[A] NEPM 1999 (amended April 2013) Management Limits (ML) Non-Sensitive Sites (Commercial and Industrial)

[A] CRC Care Technical Report 10, Sptember 2011 Direct Contact (DC) Health Screening Levels'D' (Commercial/Indu

[B] Start of sample over a 0.1m interval

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk

Presented ESL for naphthalene is an Ecological Investigation Level

Results for TRH have been compared to TPH guidelines.

ESL for TRH >C16-C34 and >C34-C40 are low reliability

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in **BOLD** are in excess of the vapour based HSL

Results shown in shading are >250% of the vapour based HSL

Results shown in underline are in excess of the ESL

Results shown in *italics* are in excess of the management limit

Results shown in patterned cells are in excess of the direct contact HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]		COMP1	COMP2	COMP3
Sample Depth (m) [B]		HIL 'D'	EIL C&I	0.3	0.3	0.3
Date				2/4/14	3/4/14	3/4/14
Sample Profile				Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S
Organochlorine Pesticides (OCP)						
HCB	0.05	80		<0.05	<0.05	<0.05
Heptachlor	0.05	50		<0.05	<0.05	<0.05
DDT	0.05		640	<0.05	<0.05	<0.05
Methoxychlor	0.2	2500		<0.2	<0.2	<0.2
Toxaphene	1	160		1	1	1
DDT+DDD+DDE	0.15	3600		0.075	0.075	0.075
Aldrin + Dieldrin	0.1	45		0.05	0.05	0.05
Chlordane	0.1	530		<0.1	<0.1	<0.1
Endosulfan	0.1	2000		0.05	0.05	0.05
Organophosphorous Pesticides (OPP)						
Chlorpyrifos	0.5	2000		<0.5	<0.5	<0.5
Total OPP	0.5			<0.5	<0.5	<0.5
Polychlorinated Biphenyls (PCB)						
Total PCB	3	50		1.5	1.5	1.5

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

EIL for DDT are for fresh (<2years) DDT

PCB analysis includes non-Dioxin like and Dixin-like compounds compared to a guideline of non-Dioxin like PCB

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH, OCP, PCB) calculation includes components reported as non detected as 1/2 PQL.

Results only show analytes that were tested and have relative guideline criteria

Sample Identification	PQL	Guideline [A]		TP1A	TP2A	TP3A	TP4A	TP5A	TP6A	TP7A	TP8A	TP9A	TP10A	TP11A	TP12A	TP13A	TP14A	TP15A	TP16A
Sample Depth (m) [B]		HIL 'D'	EIL C&I	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Date				2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14	3/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14
Sample Profile				Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Polycyclic Aromatic Hydrocarbons (PAH)																			
Acenaphthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5
Benzo(a) pyrene	0.5		1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5
Benzo(b)&(j)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5
Chrysene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	< 0.5	< 0.5
Fluorene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-c,d)pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5		370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5
Phenanthrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 0.5	< 0.5
Pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	< 0.5	< 0.5	< 0.5
Carcinogenic PAH (B(a)P equivalent)	1.21	40		0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	1.1385	0.605	0.605	0.605
Sum of reported PAH	8	4000		4	4	4	4	4	4	4	4	4.35	4	4	4	10.85	4.35	4	4
Metals																			
Arsenic	2	3000	160	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2.7	< 2	2.7	< 2
Cadmium	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	3600	310	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Copper	5	240000	400	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9.1	< 5	< 5	< 5	< 5
Mercury	0.05	730		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	5	1500	1800	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	25	5.4	< 5	< 5	< 5
Nickel	5	6000	55	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Zinc	5	400000	360	7.4	7.4	7.6	16	5.4	17	8	6.2	12	17	6.9	80	38	33	16	9.4

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

HIL for Chromium are for Chromium VI

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

Presented ecological value for benzo(a)pyrene is a low reliability ESL

EIL for Naphthalene are for fresh (<2years) Naphthalene

EIL for Arsenic are for aged (>2years) Arsenic

EIL for Chromium are the added contaminant limit for aged (>2years) Chromium III in soils of 1% clay, the most conservative of the criteria.

EIL for Copper are the added contaminant limit for aged (>2years) Copper in soils of pH 6.5.

EIL for Lead are the added contaminant limit for aged (>2years) Lead.

EIL for Nickel are the added contaminant limit for aged (>2years) Nickel in soils of 5% clay, the most conservative of the criteria.

EIL for Zinc are the added contaminant limit for aged (>2years) Zinc in soils of 5% clay and pH of 6.5, the most conservative of the criteria at pH 6.5.

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]		TP17A	TP18A	TP19A	TP20A	TP21A	TP22A	TP23A	TP24A	TP25A	TP26A	TP27A	TP28A	TP29A	TP30A	TP31A	TP32A
Sample Depth (m) [B]		HIL 'D'	EIL C&I	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Date				3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile				Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Polycyclic Aromatic Hydrocarbons (PAH)																			
Acenaphthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a) pyrene	0.5		1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)&(j)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5			0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-c,d)pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5		370	2.2	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5			0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carcinogenic PAH (B(a)P equivalent)	1.21	40		0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
Sum of reported PAH	8	4000		7.15	4	4	4	4.85	4	4	4	4.35	4	4.8	4	4	4	4	4
Metals																			
Arsenic	2	3000	160	< 2	2.2	2.5	2.9	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2.2	3	< 2	< 2
Cadmium	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	3600	310	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Copper	5	240000	400	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Mercury	0.05	730		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	5	1500	1800	14	< 5	< 5	7.5	8.7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	6000	55	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Zinc	5	400000	360	86	16	15	74	45	16	14	18	15	11	14	8.3	25	24	6.5	14

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

HIL for Chromium are for Chromium VI

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

Presented ecological value for benzo(a)pyrene is a low reliability ESL

EIL for Naphthalene are for fresh (<2years) Naphthalene

EIL for Arsenic are for aged (>2years) Arsenic

EIL for Chromium are the added contaminant limit for aged (>2years) Chromium III in soils of 1% clay, the most conservative of the criteria.

EIL for Copper are the added contaminant limit for aged (>2years) Copper in soils of pH 6.5.

EIL for Lead are the added contaminant limit for aged (>2years) Lead.

EIL for Nickel are the added contaminant limit for aged (>2years) Nickel in soils of 5% clay, the most conservative of the criteria.

EIL for Zinc are the added contaminant limit for aged (>2years) Zinc in soils of 5% clay and pH of 6.5, the most conservative of the criteria at pH 6.5.

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]		TP1C	TP1D	TP2B	TP2C	TP2D	TP3D	TP3E	TP3F	TP4D	TP5D	TP6D	TP7D	TP7E	TP8C	TP8D	TP9B
Sample Depth (m) [B]		HIL 'D'	EIL C&I	1.3	2	1	1.3	1.95	2.5	2.6	2.7	2.8	2.9	3	2.8	3	2	3	1
Date				2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14
Sample Profile				Fill; Clay, Black, moist	Fill; Clay, dark grey, moist	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silty SAND, dark brown motled orage, moist, fine grained	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silt with organic matter, moist	Fill; Sandy CLAY, dark grey, with shell fragments, wet	Fill; Sand, dark grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; sandy CLAY, dark grey, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Vegetative matter mixed with and, grey.	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Polycyclic Aromatic Hydrocarbons (PAH)																			
Acenaphthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	1.6	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a) pyrene	0.5		1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	1.9	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)&(j)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 0.5	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	1.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.8	4.5	< 0.5	< 0.5	< 0.5	< 0.5	3.4	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-c,d)pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5		370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11	< 0.5	< 0.5	< 0.5	< 0.5	8.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.8	4.6	< 0.5	< 0.5	< 0.5	< 0.5	3.3	< 0.5	< 0.5	< 0.5	< 0.5
Carcinogenic PAH (B(a)P equivalent)	1.21	40		0.605	0.605	0.605	0.605	0.605	1.4465	2.706	0.605	0.605	0.605	0.605	2.054	0.605	0.605	0.605	0.605
Sum of reported PAH	8	4000		4	4	4	4	4	14.35	35.5	4	4	4	4	27.35	4	4	4	4
Metals																			
Arsenic	2	3000	160	5.2	3.9	< 2	5.2	6.3	4.1	8	< 2	2.1	< 2	8.8	4.2	< 2	< 2	< 2	< 2
Cadmium	0.4	900		0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	3600	310	39	27	< 5	34	18	10	31	5.1	< 5	< 5	< 5	42	< 5	< 5	< 5	< 5
Copper	5	240000	400	31	24	< 5	29	14	11	14	< 5	< 5	< 5	< 5	22	< 5	< 5	< 5	< 5
Mercury	0.05	730		0.12	0.1	< 0.05	0.12	0.08	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05
Lead	5	1500	1800	49	22	< 5	52	16	8	44	< 5	< 5	< 5	< 5	55	< 5	< 5	< 5	< 5
Nickel	5	6000	55	39	26	< 5	33	17	16	20	< 5	< 5	< 5	< 5	33	< 5	< 5	< 5	< 5
Zinc	5	400000	360	440	220	7.2	410	140	140	320	54	7.3	6.5	8.4	510	< 5	< 5	23	9.4

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

HIL for Chromium are for Chromium VI

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

Presented ecological value for benzo(a)pyrene is a low reliability ESL

EIL for Naphthalene are for fresh (<2years) Naphthalene

EIL for Arsenic are for aged (>2years) Arsenic

EIL for Chromium are the added contaminant limit for aged (>2years) Chromium III in soils of 1% clay, the most conservative of the criteria.

EIL for Copper are the added contaminant limit for aged (>2years) Copper in soils of pH 6.5.

EIL for Lead are the added contaminant limit for aged (>2years) Lead.

EIL for Nickel are the added contaminant limit for aged (>2years) Nickel in soils of 5% clay, the most conservative of the criteria.

EIL for Zinc are the added contaminant limit for aged (>2years) Zinc in soils of 5% clay and pH of 6.5, the most conservative of the criteria at pH 6.5.

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]		TP10B	TP11C	TP12D	TP13D	TP14D	TP15C	TP16B	TP16D	TP17C	TP17D	TP18C	TP19C	TP19D	TP20C	TP21D	TP22C
Sample Depth (m) [B]		HIL 'D'	EIL C&I	1	2	3	3	2.7	2	1	2.8	2	3	2	2	2.7	2	3	1.3
Date				3/4/14	3/4/14	2/4/14	2/4/14	2/4/14	2/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile				Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; silty CLAY, Black wih some sand, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Polycyclic Aromatic Hydrocarbons (PAH)																			
Acenaphthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7
Benzo(a) pyrene	0.5		1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)&(j)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7
Dibenz(a,h)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.1	1.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.7
Fluorene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-c,d)pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5		370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	14	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	12
Phenanthrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.1
Pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.1	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.4
Carcinogenic PAH (B(a)P equivalent)	1.21	40		0.605	0.605	0.605	0.605	0.605	0.605	1.6465	1.2655	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.6545
Sum of reported PAH	8	4000		4	4	4	4	4	4	11.05	25.65	4	4	4	4	4	4	4	21.1
Metals																			
Arsenic	2	3000	160	< 2	< 2	< 2	3.4	< 2	< 2	< 2	6.9	< 1	< 2	< 2	< 2	< 2	< 2	< 2	5.3
Cadmium	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1.3	< 0.3	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.8
Chromium	5	3600	310	< 5	< 5	< 5	9.4	< 5	< 5	< 5	40	< 5	< 5	< 5	< 5	< 5	< 5	< 5	25
Copper	5	240000	400	< 5	< 5	< 5	< 5	< 5	< 5	< 5	27	< 5	< 5	< 5	< 5	< 5	< 5	< 5	17
Mercury	0.05	730		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.22	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11
Lead	5	1500	1800	< 5	< 5	< 5	6.5	< 5	< 5	< 5	270	< 5	< 5	< 5	< 5	< 5	< 5	< 5	130
Nickel	5	6000	55	< 5	< 5	< 5	9	< 5	< 5	< 5	20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	18
Zinc	5	400000	360	8	8.8	24	65	< 5	7.2	17	1500	<5	8.7	< 5	7.4	< 5	5.3	< 5	780

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

HIL for Chromium are for Chromium VI

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

Presented ecological value for benzo(a)pyrene is a low reliability ESL

EIL for Naphthalene are for fresh (<2years) Naphthalene

EIL for Arsenic are for aged (>2years) Arsenic

EIL for Chromium are the added contaminant limit for aged (>2years) Chromium III in soils of 1% clay, the most conservative of the criteria.

EIL for Copper are the added contaminant limit for aged (>2years) Copper in soils of pH 6.5.

EIL for Lead are the added contaminant limit for aged (>2years) Lead.

EIL for Nickel are the added contaminant limit for aged (>2years) Nickel in soils of 5% clay, the most conservative of the criteria.

EIL for Zinc are the added contaminant limit for aged (>2years) Zinc in soils of 5% clay and pH of 6.5, the most conservative of the criteria at pH 6.5.

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Guideline [A]		TP23D	TP24C	TP24D	TP24E	TP25D	TP25E	TP26C	TP26D	TP27C	TP28C	TP29C	TP30B	TP31D	TP32C
Sample Depth (m) [B]		HIL 'D'	EIL C&I	3	2	2.5	2.7	2.5	3	2	2.5	2	2	1.5	1	2.8	2
Date				3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14	3/4/14
Sample Profile				Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Silty Clay, black, with fine grained sand	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; Silty Clay, black, with fine grained sand	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; SAND, dark brown, moist, medium grained, with shell fragments and silt	Fill; SAND, pale brown, moist, medium grained, with shell fragments	Fill; Sand, grey, fine to medium grained, with shell fragments, wet	Fill; SAND, pale brown, moist, medium grained, with shell fragments
Sample Purpose				baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment	baseline assessment
Sample collected by				JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG	JG
Laboratory Report Reference				414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S	414510-S
Polycyclic Aromatic Hydrocarbons (PAH)																	
Acenaphthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a) pyrene	0.5		1.4	< 0.5	< 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
Benzo(b)&(j)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5			< 0.5	< 0.5	1.9	< 0.5	1	< 0.5	2.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-c,d)pyrene	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5		370	< 0.5	< 0.5	5.2	< 0.5	2.2	< 0.5	2.1	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5			< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5			< 0.5	< 0.5	1.7	< 0.5	0.9	< 0.5	2.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carcinogenic PAH (B(a)P equivalent)	1.21	40		0.605	0.605	0.605	0.605	0.605	0.605	1.5465	0.605	0.605	0.605	0.605	0.605	0.605	0.605
Sum of reported PAH	8	4000		4	4	12.9	4	7.35	4	13.4	4	4	4	5.15	4	4	4
Metals																	
Arsenic	2	3000	160	< 2	< 2	12	< 2	4.1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Cadmium	0.4	900		< 0.4	< 0.4	1.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	3600	310	< 5	< 5	52	< 5	12	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Copper	5	240000	400	< 5	< 5	48	< 5	8.8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Mercury	0.05	730		< 0.05	< 0.05	0.22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	5	1500	1800	< 5	< 5	300	< 5	66	< 5	< 5	< 5	< 5	< 5	15	< 5	< 5	< 5
Nickel	5	6000	55	< 5	< 5	32	< 5	7.6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Zinc	5	400000	360	6.9	8.6	2000	8.3	570	8.9	25	15	< 5	< 5	77	19	< 5	9.1

All results are in units of mg/kg.

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit

[A] NEPM 1999 (amended April 2013) Health Investigation Levels (HIL) 'D' (Commercial/Industrial)

[A] NEPM 1999 (amended April 2013) Ecological Investigation Levels (EIL) C&I (Commercial and Industrial)

[B] Start of sample over a 0.1m interval

HIL for Chromium are for Chromium VI

For the purpose of the Tier 1 ESL/EIL assessment, all background concentrations are assumed to be zero

Presented ecological value for benzo(a)pyrene is a low reliability ESL

EIL for Naphthalene are for fresh (<2years) Naphthalene

EIL for Arsenic are for aged (>2years) Arsenic

EIL for Chromium are the added contaminant limit for aged (>2years) Chromium III in soils of 1% clay, the most conservative of the criteria.

EIL for Copper are the added contaminant limit for aged (>2years) Copper in soils of pH 6.5.

EIL for Lead are the added contaminant limit for aged (>2years) Lead.

EIL for Nickel are the added contaminant limit for aged (>2years) Nickel in soils of 5% clay, the most conservative of the criteria.

EIL for Zinc are the added contaminant limit for aged (>2years) Zinc in soils of 5% clay and pH of 6.5, the most conservative of the criteria at pH 6.5.

Results shown in **BOLD** are in excess of the primary acceptance criteria

Results shown in shading are >250%of the primary acceptance criteria

Results shown in underline are in excess of primary EIL

Where summation required (PAH) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Human Health (Vapour Based) Guideline [A]	MW1	MW2	MW3	MW4
Sample Depth (m) [B]		HSL 'D'	1.9	2.2	2.12	2.3
Date		SAND 2-<4m	14/4/14	14/4/14	14/4/14	14/4/14
Sample Description			Grey, very Turbid, slight sulfure odour	Grey, very trubid, no odour	Grey, very trubid, no odour	Grey, very trubid, no odour
Dominant Stratum [C]			SAND	SAND	SAND	SAND
Sample Purpose			Baseline assessment	Baseline assessment	Baseline assessment	Baseline assessment
Sample collected by			JG	JG	JG	JG
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)						
Benzene	0.001	5	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	NL	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.002	NL	< 0.002	< 0.002	< 0.002	< 0.002
meta- and para-Xylene	0.001		< 0.001	< 0.001	< 0.001	< 0.001
ortho-Xylene	0.001		< 0.001	< 0.001	< 0.001	< 0.001
Total Xylenes	0.002	NL	0.001	0.001	0.001	0.001
Polycyclic Aromatic Hydrocarbons (PAH)						
Naphthalene	0.001	NL	< 0.001	< 0.001	< 0.001	< 0.001
Total Recoverable Hydrocarbons (TRH)						
TRH C6-C10	0.02		< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05		< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1		< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1		< 0.1	< 0.1	< 0.1	< 0.1
F1	0.02	6	<0.02	<0.02	<0.02	<0.02
F2	0.05	NL	<0.05	<0.05	<0.05	<0.05

All results are in units of mg/L

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit.

F1 PQL deemed equal TRH C6-C10.

F2 PQL deemed equal TRH >C10-C16.

[A] NEPM 2013 HIL 'D' (Commercial/Industrial)

[B] Sample depths presented are as encountered during drilling except for MW4 which was an existing well.

[C] Note that this is a generalisation for the purpose of comparing to the HSL criteria. Where two strata equally represented, most conservative criterion used

NL designates 'Not Limiting' indicating that the pore water concentration required to constitute a vapour risk is higher than the solubility capacity for that compound based on a petroleum mixture. Vapour is therefore not a risk for this compound.

Results for TRH have been compared to TPH guidelines.

F1 = TRH C6-C10 minus BTEX

F2 = TRH >C10-C16 minus naphthalene

Results shown in shading are in excess of the HSL

Where summation required (Xylene, F1, F2) calculation includes components reported as non detected as 1/2 PQL.

Sample Identification	PQL	Aquatic Ecosystem Guideline [A]	Human Health (Ingestion) Guideline [B]	MW1	MW2	MW3	MW4
Sample Depth (m) [C]		95% Fresh		1.9	2.2	2.1	2.3
Date				14/4/14	14/4/14	14/4/14	14/4/14
Sample Description				Grey, very Turbid, slight sulfure odour	Grey, very trubid, no odour	Grey, very trubid, no odour	Grey, very trubid, no odour
Sample Purpose				Baseline assessment	Baseline assessment	Baseline assessment	Baseline assessment
Sample collected by				JG	JG	JG	JG
Laboratory Report Reference				418379-W	418379-W	418379-W	418379-W
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)							
Benzene	0.001	0.95	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	*0.18*	0.8	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.002	*0.08*	0.3	< 0.002	< 0.002	< 0.002	< 0.002
meta- and para-Xylene	0.001	*0.275*		< 0.001	< 0.001	< 0.001	< 0.001
ortho-Xylene	0.001	0.35		< 0.001	< 0.001	< 0.001	< 0.001
Total Xylenes	0.002		0.6	0.001	0.001	0.001	0.001
Total Recoverable Hydrocarbons (TRH)							
TRH C6-C10	0.02			< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05			< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1			< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1			< 0.1	< 0.1	< 0.1	< 0.1
TRH C6-C40	0.27	*0.007*		0.135	0.135	0.135	0.135
Polycyclic Aromatic Hydrocarbons (PAH)							
Acenaphthene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	*0.0004*		< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a) pyrene	0.001	*0.0002*	0.00001	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b)&(j)fluoranthene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	*0.0014*		< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-c,d)pyrene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	0.016		< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	*0.002*		< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001			< 0.001	< 0.001	< 0.001	< 0.001
Sum of reported PAH	0.016			0.008	0.008	0.008	0.008
Metals							
Arsenic	0.001	0.013	0.01	0.003	0.002	0.001	0.003
Cadmium	0.0002	0.0002	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	0.001	0.05	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	0.0014	2	< 0.001	< 0.001	< 0.001	< 0.001
Lead	0.001	0.0034	0.01	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	0.0006	0.001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	0.011		< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.001	0.008		0.004	0.005	0.005	0.003

All results are in units of mg/L

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit.

[A] ANZECC 2000 % Protection Level for Receiving Water Type

[B] NHMRC Australian Drinking Water Guidelines, 2011

[C] Sample depths presented are as during drilling except for MW4 which was an existing well.

ANZECC guidelines in *italics* are low level reliability guidelines

ANZECC arsenic guideline based on As (V) for fresh water, the lowest of presented guidelines.

NHMRC arsenic guidelines are based on total arsenic

ANZECC and NHMRC guidelines for chromium are based on Cr (VI)

ANZECC guidelines for mercury are based on inorganic mercury.

NHMRC guidelines for mercury are based on total mercury.

Results for TRH have been compared to TPH guidelines.

Results shown in **BOLD** are in excess of the aquatic ecosystems guidelines

Results shown in underline are in excess of the human health (ingestion) guideline

Where summation required (Xylene,TRH,PAH) calculation includes components reported as non detected as 1/2 PQL.

MW4 is the existing well found on site.