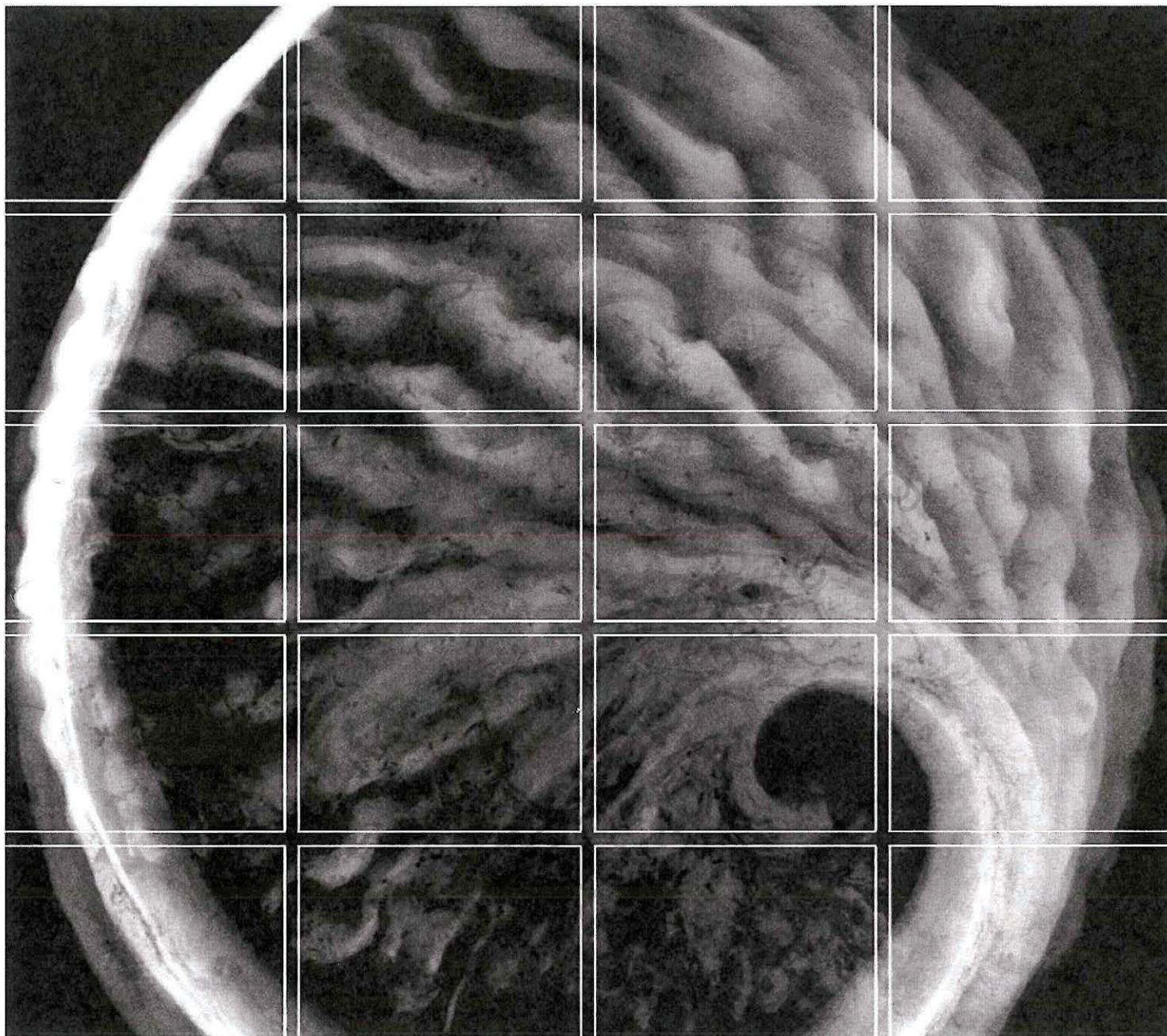




**Freedom Fuels Australia
Kuraby, 1319 Beenleigh Road,
Kuraby, Queensland**

FINAL-Stage 2 Environmental Site Assessment

Idemitsu Kosan Co., Ltd

February 2013

www.erm.com

Freedom Fuels Australia Kuraby, 1319 Beenleigh Road, Kuraby, Queensland

Stage 2 Environmental Site Assessment

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Idemitsu Kosan Co., Ltd

February 2013

Environmental Resources Management Australia Pty Ltd Quality System

0154511 Kuraby Stage 2 ESA Report_FINAL

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Statement

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**ANNEX F LABORATORY REPORTS AND CHAIN OF CUSTODY
DOCUMENTATION**

1.1

COMMISSION

Idemitsu Kosan Co. Ltd (Idemitsu) commissioned Environmental Resources Management Australia Pty Ltd (ERM) to conduct a Stage 2 Environmental Site Assessment (ESA) at the Kuraby located at 1319 Beenleigh Rd (Lots 5 though to 8 on RP 37307), Kuraby, Queensland, Australia (the Site).

1.2

PROJECT APPRECIATION

ERM conducted a Stage 1 environmental due diligence assessment on behalf of Idemitsu for a portfolio of 45 sites currently operated by Freedom Fuels Australia (FFA). Upon completion of that assessment, ERM provided recommendations on the preferred approach to refine the estimated environmental liabilities associated with the portfolio. A strategy was then developed to reduce the uncertainties, by conducting intrusive investigations at selected sites, with an emphasis on sites ranked as high risk and those with no previous environmental investigation data. A total of 35 of the original portfolio of 45 sites were selected for intrusive investigations (Stage 2 ESAs). These works (Stage 1 and Stage 2 ESAs) have been referenced as "Project Indigo".

1.3

OBJECTIVES

The objectives of the selected intrusive (Stage 2) environmental site assessments were to characterise soil and groundwater impacts associated with current and historical site operations. For sites where environmental investigations have previously been undertaken (and the reports provided by FFA), ERM's Stage 2 ESA scope aimed to further characterise (and where possible, delineate) identified impact. For sites with no known previous investigations, ERM aimed to characterise (and delineate where possible) the extent of impact.

SITE IDENTIFICATION

Table 2.1 below provides details of the Site where a Stage 2 ESA was completed.

Table 2.1 *Site Identification Details*

Site Identification	Kuraby Service Station.
Site Location	1319 Beenleigh Road, Kuraby, QLD 4390.
Latitude/Longitude	27°36'17.26"S and 153°05'27.89"E.
Property Description	Lots 5-8 on RP37307, Brisbane City Council.
Site Area (m ²)	1620m ² .
Ownership of Site	CAAM INTERPRISES PTY LTD and QUATTRINI PTY LTD, leased to Freedom Fuels Australia Pty Ltd.
Current Land Use Zoning	Low Density Residential.
Source of Information:	ERM

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SITE SETTING

The site location and local setting is summarised below in Table 3.1 and presented in Figure 1, Annex A.

Table 3.1 *Summary of Site Setting*

General Surrounding Land Use	
North	Beenleigh Road and railway line.
East	Commercial/Residential properties.
South	Commercial/Residential properties.
West	Donegal Street and Commercial and Commercial properties.
General Topography	Gentle slope to the North-west.
Surface Water and Water Courses	Bulimba Creek located 350m NW of the Site.
Regional Geology	Kuraby 1:100,000 Geology Sheet 9542 indicates site is on tertiary Lamington group soils overlaying Triassic-Jurassic Woogaroo subgroup.
Regional Hydrogeology	Based on nearby registered groundwater bores, depth to groundwater is approximately 9mbgs.
Local Water Bores	Four (4) groundwater bores are located within 1000m of the Site.
Potential Sensitive Receptors	Bulimba Creek and groundwater bores.
Potential Off-site Sources	No off-site sources of impact identified.
Source of Information: ERM desktop review, site visit and aerial photographs.	

3.1

SITE FEATURES

The site features are summarised below in Table 3.2 and presented in Figure 2, Annex A.

Table 3.2 *Summary of Site Features*

Surface Staining or Stressed Vegetation	Surface staining approximately 5m x 2m noted on dirt surface around the TIT and waste oil AST.
Triple Interceptors Tanks (TIT)	One (1) TIT noted to the south of the site behind shop.
Surface Covering	The site is generally surfaced with concrete on the service station forecourt and by dirt, grass and gravel behind the shop.
Other Notable Site Observations	Old air compressor adjacent to the workshop.
Source of Information: ERM site visit.	

3.2

HISTORICAL SITE ACTIVITIES

The site activities are summarised in *Table 3.3*, provided below.

Table 3.3 *Historical Site Activities*

Prior Site Uses	Private Residential.
Commencement as Petroleum Site	Unknown.
Equipment Replacements, Repairs or Additions	None known.
Significant Reported Leaks or Spills	No information.
Past Site Investigations and/or Remediation	ESA (20 April 2003) Otek: six (6) soil borings and the analysis of nine (9) samples.
Other Significant Activities	None.
Source of Information: ERM Stage 1 Review.	

Environmental investigations undertaken at the Site (by ERM and other previous investigations, where conducted) are detailed in *Table 1, Annex B*.

3.3

SITE INFRASTRUCTURE

The site petroleum infrastructure is summarised in *Table 2, Annex B* and the location of all known petroleum related site equipment is shown in *Figure 2*.

4.1

SCOPE OF WORK COMPLETED

The focused scope of fieldwork agreed at the commencement of Project Indigo was the drilling a total of seven (7) soil bores, four (4) to a depth of four (4) metres below ground level (bgl) and three (3) to a depth of 10 metres bgl, with collection of soil samples. In addition, the three (3) deeper soil bores were to be converted to groundwater monitoring wells, developed, gauged and groundwater samples collected. Selected soil and groundwater samples were to be submitted for laboratory analysis.

Upon commencement of the field works at the Site, the scope was modified to reflect the site conditions. As such, the following scope of field works was undertaken at the Site:

- Two (2) soil bores to a depth of 4m bgl; and
- Three (3) groundwater monitoring wells to a depth of 10m bgl.

This revised scope of works was due to soil results obtained from a previous site assessment undertaken by Otek on 8th March 2012.

The dates of field works activities are summarised in *Table 1, Annex B*. The location of soil bores and groundwater monitoring wells installed at the Site are presented in *Figure 2, Annex A*.

The methodology of the site activities is detailed in *Annex C*. Borehole logs showing the geology encountered and results of field Photo-Ionisation Detector (PID) screening are presented in *Annex D*. The samples selected for testing and analytical suite for samples collected is as presented in *Annex B*.

A photographic log showing key issues and observations at the Site is presented as *Annex E*.

4.2

GROUNDWATER MONITORING WELLS

A summary of groundwater monitoring wells and associated installation details at the Site is presented in *Table 3, Annex B*.

4.3

GROUNDWATER GAUGING

A summary of groundwater gauging is detailed in *Table 4, Annex B*.

4.4

GROUNDWATER FIELD PARAMETERS

A summary of groundwater field parameters collected during groundwater sampling is detailed in *Table 5, Annex B*.

Soil samples were collected from soil bores and after field screening a selection of samples were sent to MGT-Labmark (a NATA accredited laboratory) for laboratory analysis. The groundwater samples from the monitoring wells and the requisite QA/QC samples were also sent to MGT-Labmark for analysis. The summary of analytical results, which also presents the samples selected for testing and the analytical suite for samples collected, is presented in *Annex B*. Laboratory results reports and chain of custody (COC) documentation are presented in *Annex F*.

5.1

ASSESSMENT CRITERIA

At present, there are a number of health investigation levels (HILs) and ecological investigation levels (EILs) that provide guidance to hydrocarbon exposure in both soil and groundwater. These investigation levels are limited and do not extend to a variety of soil types and aquifer situations (Friebel & Nadebaum, 2011).

The Co-operative Research Centre, as part of their research program for Contamination Assessment and Remediation of the Environment (CRC CARE) published technical report No. 10, Health screening levels for petroleum hydrocarbons in soil and groundwater in September 2011. This technical document provides human exposure levels for volatile organic carbons (VOCs) based upon the actual soil composition of the potential vapour pathway (sand, clay etc) within the already established framework of residential, commercial/industrial or ecological land uses.

Exposure criteria presented within that report are expected to be either partially or wholly incorporated into the revised National Environmental Protection Measure (NEPM) Guidelines. As such, the soil vapour health screening levels (HSLs) provided in the CRC CARE technical report represent the most relevant screening levels applicable to Australian geological and meteorological conditions and are appropriate for the assessment of the soil and groundwater data.

5.1.1

Soil Assessment Criteria

Based on consideration of the site location, current land use, and the most representative lithology beneath the Site, the following guidelines were nominated as Screening Levels (SLs) for soil for the analytical suite:

- Department of Environment and Heritage Protection Guideline for Contaminated Land Professionals;
- NEPM 1999 Schedule B (1) - Guideline on Investigation Levels for Soil and Groundwater;

- CRC CARE (2011) Health Screening Levels (HSLs) for Vapour Intrusion HSL-D (Commercial/Industrial) Sand 0 to <1m, Sand 1 to <2, Sand 2m to 4m, Sand >4m; and
- CRC CARE (2011) Health Screening Levels for Direct Contact HSL-D (Commercial/Industrial).

Nominated screening levels (SLs) are summarised on the soil analytical results *Tables 6a and 6b, Annex B*.

5.1.2 Groundwater Assessment Criteria

Based on consideration of the site location, current land use, and the most representative depth to groundwater at the Site, the following SLs for groundwater have been nominated for on-site and/or off-site locations:

- CRC CARE (2011) Groundwater Health Screening Levels for Vapour Intrusion HSL-D (Commercial/Industrial) >8m Sand; and
- Australia and New Zealand Environment Conservation Council (ANZECC) (2000) Australian and New Zealand Guidelines for Fresh Water (95% protection of species).

Nominated SLs are summarised in the groundwater analytical results in *Tables 7a and 7b, Annex B*.

5.2 SOIL ANALYTICAL RESULTS

Soil analytical results and comparison with adopted assessment criteria are presented in *Tables 6a and 6b, Annex B*. There are no soil sample results that exceed the adopted assessment criteria.

5.3 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results and comparison with adopted assessment criteria are presented in *Tables 7a and 7b, Annex B*. Groundwater sample results that exceeded the adopted assessment criteria are presented on *Figure 4, Annex A*. The number of exceedences and maximum concentrations recorded for these analytes is presented in *Table 5.1, below*.

Table 5.1 Groundwater Sample Results Exceeding Adopted Assessment Criteria

Analyte	No. Samples Analysed	Number of Exceedences	Maximum Concentration (ug/L)
TRH C6-C10 less	3	1	15,000
BTEX			
Benzene	3	2	40,000
Xylene (o)	3	1	1,600
Naphthalene	3	3	420

QUALITY OF ANALYTICAL DATA

The quality of analytical data produced for this project has been assessed with reference to the following issues:

- Sample technique;
- Preservation and storage of samples upon collection and transport to the laboratory;
- Sample holding times;
- Analytical procedures;
- Laboratory LOR;
- Field duplicate agreement;
- Laboratory QA procedures; and
- The occurrence of apparently unusual or anomalous results.

A summary of field blank results, field duplicate samples and relative percentage differences (RPD%) is included in *Tables 8a and 8b, Annex B*. Laboratory QA/QC procedures and results are detailed in the certified laboratory results contained in *Annex F*.

These checks are made to assess data in terms of completeness, representativeness, comparability, accuracy and precision in order to meet the data quality objectives. QC results exceeding acceptable limits are detailed in *Table 5.2, below*.

Table 5.2 *Quality Control Results Exceeding Acceptable Limits*

QC Result	Comment
RPD for primary soil sample SB1_0.3 & duplicate soil sample QA01 for TRH C10-C36 and lead reported as 54% and 170%, respectively and for soil sample MW1_0.5 & QA02 for TRH C10-C14 and Naphthalene reported as 105% and 44% respectively.	Sample field/ duplicate pairs with high RPD% values may have resulted from sample heterogeneity. The inability to mix samples associated with potential volatile components, can affect the repeatability of results in soil duplicate. As a precautionary approach the highest result has been used for interpretive purposes.
RPD for primary groundwater sample MW03 and duplicate groundwater sample D01 for TRH and 4-nitrophenol reported at between 50% and 164%.	The high RPDs are likely due to small variations between high concentrations of hydrocarbons. As a precautionary approach the highest result has been used for interpretive purposes.

Overall, the data quality information provides confidence that the data is of sufficient quality to serve as a basis for interpretation for the purposes of this assessment with reference to the comments made above.

LIMITATIONS

The findings of this report are based on the Scope of Work in *Section 4*. ERM performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties, express or implied, are made.

Although normal standards of professional practice have been applied, the absence of any identified hazardous or toxic materials on the Site should not be interpreted as a guarantee that such materials do not exist on the Site.

This assessment is based on data and information provided to ERM by Freedom Fuels Australia and the limited Stage 2 ESA. Assessment criteria selections made in the report are the professional opinions of the ERM personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ERM assumes no responsibility or liability for errors in data obtained from regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

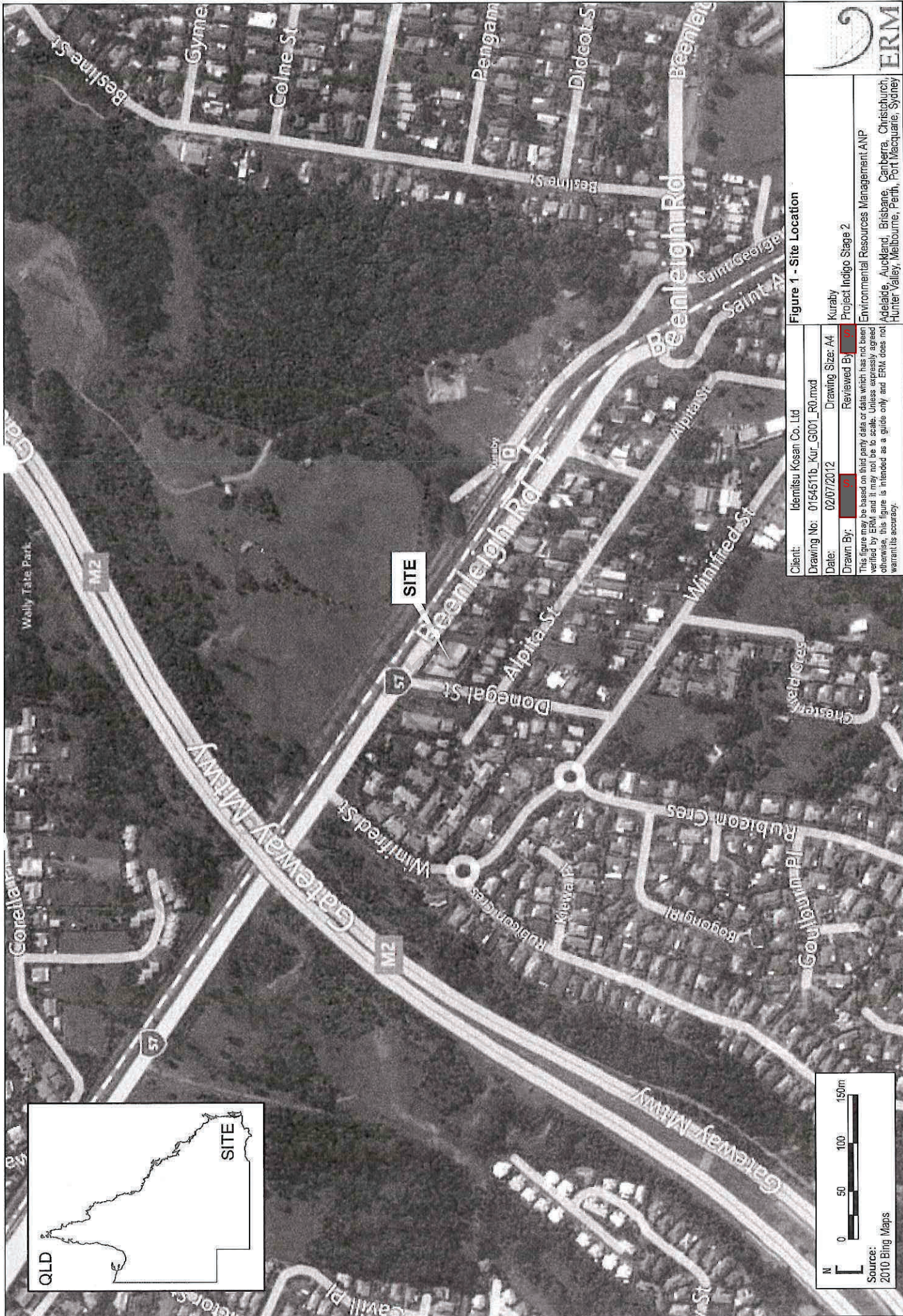
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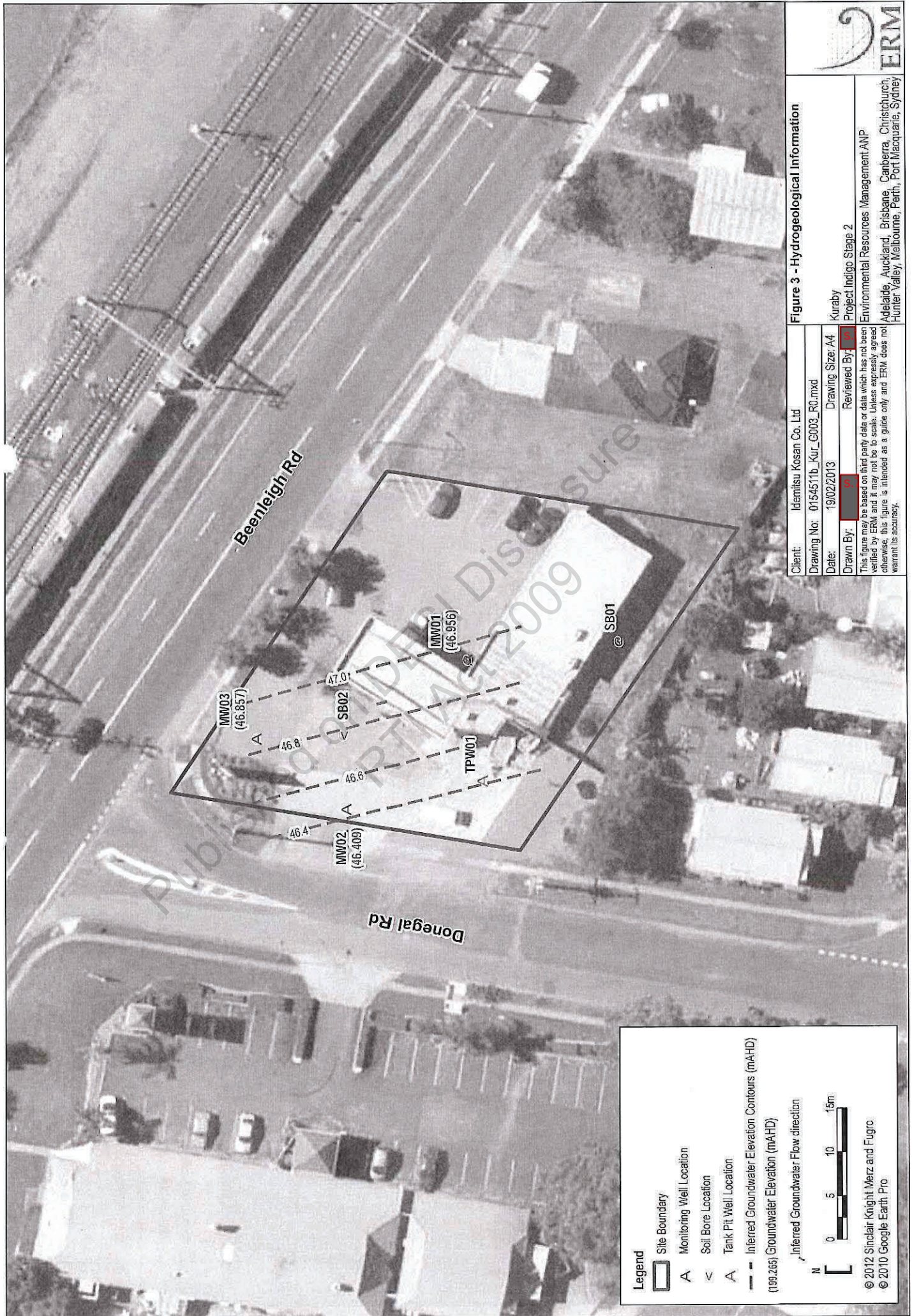
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Annex A

Figures

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Annex B

Tables

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Table 1 - Environmental Investigations
Kuraby
Project Indigo Stage 2 ESA - 0154511

Date	Site Activities
April 2003	Otek perform a Environmental Site Assessment (ESA) which included the drilling of six soil bores.
28 to 30 May 2012	ERM conducted drilling at the site which included the installation of three groundwater well and drilling of two soil bores as part of a Stage 2 Environmental Site Assessment (ESA).
May 2012	ERM conducted a Groundwater Monitoring Event (GME) on three groundwater monitoring wells as part of the Stage 2 ESA.
31-May-12	Usher and Company (an ERM contractor) surveyed the monitoring wells on site as part of the Stage 2 ESA.

Source of Information: ERM

Table 2 - UPSS Infrastructure
Kuraby
Project Indigo Stage 2 ESA - 0154511

Tank ID	Tank Type	Tank Size (kL)	Product Stored	Status	Removal or Abandonment Date
1	UST	9.182	E10 Unleaded	Active	N/A
2	UST	9.182	E10 Premium Unleaded	Active	N/A
3	UST	11.8	E10 Unleaded	Active	N/A
4	UST	57.9	Unleaded	Active	N/A
5	UST	17.8	Diesel	Active	N/A
6	UST	2.273	Kerosene	Active	N/A

Notes:

kL Kilolitre
 UST Underground Storage Tank
 AST Aboveground Storage Tank
 NA Not Applicable
 LPG Liquid Petroleum Gas
 E10 Ethanol (10%)

Source of Information: Freedom Fuels
 Australia

Table 3 - Groundwater Monitoring Well Construction Details
Kuraby
Project Indigo Stage 2 ESA - 0154511

Well ID	Date of Installation	Top of Well Casing Elevation (mAHD)	Bottom of Well Depth		Top of Well Screen		Bottom of Well Screen		Lithology of screened selection
			mAHD	mBGS	mAHD	mBGS	mAHD	mBGS	
MW1	29-May-12	54.382	44.38	10.00	49.38	5.00	44.38	10.00	Sandstone
MW2	30-May-12	53.663	43.66	10.00	49.66	4.00	43.66	10.00	Silty Gravelly
MW3	30-May-12	53.536	43.54	10.00	49.54	4.00	43.54	10.00	Silty Gravelly

Source of Information: *Environmental Resources Management (2012)*

Well ID	Gauging Date	Event	TOC Elevation (mAHD)	Total Measured Depth (mbTOC)	Depth to PSH (mbTOC)	SWL (mbTOC)	PSH Thickness (m)	Corrected SWL (mbTOC)	Corrected SWL Elevation (mAHD)
MW01	31.05.12	GMB	54.382	10.407	-	7.426	-	7.426	46.956
MW02	31.05.12		53.663	9.790	-	7.254	-	7.254	46.409
MW03	31.05.12		53.536	9.991	-	6.679	-	6.679	46.857

Notes:

mAHD: metres Australian Height Datum

mbTOC: metres below Top of Casing

PSH: Phase Separated Hydrocarbon

SWL: Static Water Level

m: metres

Table 5 - Groundwater Field Parameters
Kuraby
Project Indigo Stage 2 ESA - 0154511

Well ID	Purge Date	DO (mg/L)	EC (μScm^{-1})	pH	Eh (mV)	TEMP ($^{\circ}\text{C}$)	TDS (mg/L)	Purge Volume (L)	Comments
MW01	31.05.12	3.89	1829	6.10	126.2	23.7	1188.9	2.0	Slight odour, no sheen
MW02	31.05.12	1.49	4041	6.30	112.1	24.6	2626.7	1.5	Clear. No odour or sheen
MW03	31.05.12	2.65	3203	6.61	90.6	25.4	2082.0	1.0	Clear. Slight odour and sheen

Notes:

MW	Monitoring Well	Eh	Redox
Post	Post Purging	mV	millivolts
DO	Dissolved Oxygen	TDS	Total Dissolved Solids
mg/L	milligrams per litre	L	Litres
EC	Electrical Conductivity	TDS	= EC x 0.65
μScm^{-1}	microsiemens per centimetre	Operator	Joseph James

					TRH										BTEX										Lead		PAH		Grain Size Analysis																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
					C10 - C36 (Sum of total)					C6-C10					C6-C10 less BTEX (F1)					C10-C16					C10-C16 less Naphthalene (F2)					C16-C34					C34-C40					Benzene					Toluene					Ethylbenzene					Xylene (m & p)					Xylene (o)					Xylene Total					Lead					Naphthalene					1000-2000 Micron					125-250 Micron					250-500 Micron					500-1000 Micron					Moisture Content (dried @ 103°C)					63-125 Micron					<63 Micron					>2000 Micron																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

Phenols		PAH/Phenols															
4,6-Dinitro-o-cyclohexyl phenol	Dioxob	Verethersphenol	4-ethoxyphenols	Phenols (Total Halogenated)	Phenols (Total Non Halogenated)	2,4-dimethylphenol	2,6-dimethylphenol	2-nitrophenol	2,4,6-trimethylphenol	4-nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(e)fluoranthene	
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
20	20	1	5	1	20	10.5	5	0.2	1	0.4	5	1	5	0.5	0.5	0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
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<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
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<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
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<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
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<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	<20	<10.5	<5	<0.2	<1	<0.4	<5	<1	<5	<0.5	<0.5	<0.5	
<20	<20	<1	<5	<1	&												

Table 7a Groundwater Analytical Results
Kuraby
Project Indigo Stage 2 ESA - 0154511

	TRH										BTEX						Lead	PAH	Solvents	
	C6 - C9 µg/L	C10 - C14 µg/L	C15 - C28 µg/L	C29-C36 µg/L	+C10 - C36 (Sum of total) µg/L	C6-C10 µg/L	C6-C10 less BTEX (F1) µg/L	C10-C16 µg/L	C10-C16 less Naphthalene (F2) µg/L	C16-C34 µg/L	C34-C40 µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylene (m & p) µg/L	Xylene (o) µg/L				Xylene Total µg/L
LOR	20	50	100	100	100	20	20	50	50	100	100	1	1	1	2	1	3	1		1
ANZECC 2000 (Fresh Water) 95%												950	NL	NL		350	NL	3.4	16	
CRC Care HSI-D (Commercial/Industrial) Sand 8m+							6500		NL			5400	NL	NL			NL		NL	

SampleCode	Field_ID	LocCode	Sampled_Date	C6 - C9	C10 - C14	C15 - C28	C29 - C36	+C10 - C36 (Sum of total)	C6 - C10	C6 - C10 less BTEX (F1)	C10 - C16	C10 - C16 less Naphthalene (F2)	C16 - C34	C34 - C40	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Lead (Filtered)	PAH	Solvents
B12-Jn00353	MW01	MW01	31-May-12	1100	8800	1000	100	9900	2000	1500	7900	6800	400	<100	43	29	94	350	84	410	<1	420	27
B12-Jn00354	MW02	MW02	31-May-12	68,000	9900	1200	200	11,000	73,000	15,000	5100	5100	900	<100	40,000	9400	1000	5700	1600	7400	2	120	300
B12-Jn00355	MW03	MW03	31-May-12	9700	3400	700	300	4400	11,000	6200	1800	1600	700	<100	1900	21	700	2200	12	2200	3	80	290



Sample Code	Field ID	Loc Code	Sampled Date	Phenols										PAH/Phenols																										
				2,4,5-trichlorophenol µg/L	2,4,6-trichlorophenol µg/L	2,4-dichlorophenol µg/L	2,6-dichlorophenol µg/L	2-chlorophenol µg/L	4,5-Dinitro-o-cyclohexyl phenol µg/L	Dinitroeb µg/L	Pentachlorophenol µg/L	Tetrachlorophenols µg/L	Phenols (Total Halogenated) µg/L	Phenols (Total Non Halogenated) µg/L	2,4-dimethylphenol µg/L	2-methylphenol µg/L	2-nitrophenol µg/L	3,4-dimethylphenol µg/L	4,6-Dinitro-2-methylphenol µg/L	4-chloro-3-methylphenol µg/L	2-nitrophenol µg/L	Acenaphthylene µg/L	Acenaphthylene µg/L	Anthracene µg/L	Benz(a)anthracene µg/L	Benz(a) pyrene µg/L	Benz(b)fluoranthene µg/L	Benz(g,h,i)perylene µg/L	Benz(k)fluoranthene µg/L	Chrysene µg/L	Dibenz(a,h)anthracene µg/L	Fluoranthene µg/L	Fluorene µg/L	Indeno(1,2,3-c,d)pyrene µg/L	PAHs (Sum of total) µg/L	Phenanthrene µg/L	Phenol µg/L	Pyrene µg/L		
MS				1	10	1	3	100	100	10	30	10	100	1	1	3	6	5	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	320
ANZECC 2000 (Fresh water) 95%				1	10	1	3	100	100	10	30	10	100	1	1	3	6	5	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	320
B12-m0333	MW01		31-May-12	<1	<10	<1	<3	<100	<100	<10	<30	<10	<100	<1	<1	<3	<6	<5	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B12-m0334	MW02		31-May-12	<1	<10	<1	<3	<100	<100	<10	<30	<10	<100	<1	<1	<3	<6	<5	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B12-m0335	MW03		31-May-12	<1	<10	<1	<3	<100	<100	<10	<30	<10	<100	<1	<1	<3	<6	<5	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 8a Quality Assurance/Quality Control Results - Field Duplicates
Kuraby
Project Indigo Stage 2 ESA - 0154511

[illegible]

***High RTDs are in bold (Acceptable RTDs for each EOL number range are: 100 (5-10 x EOL); 40 (5-10 x EOL); 40 (5-10 x EOL); 40 (5-10 x EOL)).

Field Blanks (WATER)
Filter: SDG in(339351,339188)

SDG	339351	339188	339351	339188
Field_ID	R01	QA03	TB01	QA04
Sampled_Date	31-May-12	30-May-12	31-May-12	30-May-12
Sample_Type	Rinsate	Rinsate	Trip_B	Trip_B

ChemName	Units	LOR				
TRH						
C6 - C9	µg/l	20	<20	<20	<20	<20
C10 - C14	µg/l	50	<50	<50		<50
C15 - C28	µg/l	100	<100	<100		<100
C29-C36	µg/l	100	<100	<100		<100
+C10 - C36 (Sum of total)	µg/l	100	<100	<100		<100
C6-C10	µg/l	20	<20	<20		<20
C6-C10 less BTEX (F1)	µg/l	20	<20	<20		<20
C10-C16	µg/l	50	<50	<50		<50
F2-NAPHTHALENE	µg/l	50	<50	<50		<50
C16-C34	µg/l	100	<100	<100		<100
C34-C40	µg/l	100	<100	<100		<100
BTEX						
Benzene	µg/l	1	<1	<1	<1	<1
Ethylbenzene	µg/l	1	<1	<1	<1	<1
Toluene	µg/l	1	<1	<1	<1	<1
Xylene (m & p)	µg/l	2	<2	<2	<2	<2
Xylene (o)	µg/l	1	<1	<1	<1	<1
Xylene Total	µg/l	3	<3	<3	<3	<3
Lead						
Lead (Filtered)	µg/l	1				
PAH/Phenols						
2,4-dimethylphenol	µg/l	1	<1			
2,4-dinitrophenol	µg/l	1	<1			
2-methylphenol	µg/l	3	<3			
2-nitrophenol	µg/l	5	<5			
3-&4-methylphenol	µg/l	6	<6			
4,6-Dinitro-2-methylphenol	µg/l	5	<5			
4-chloro-3-methylphenol	µg/l	10	<10			
4-nitrophenol	µg/l	1	<1			
Acenaphthene	µg/l	1	<1			
Acenaphthylene	µg/l	1	<1			
Anthracene	µg/l	1	<1			
Benz(a)anthracene	µg/l	1	<1			
Benzo(a) pyrene	µg/l	1	<1			
Benzo(b)fluoranthene	µg/l	1	<1			
Benzo(g,h,i)perylene	µg/l	1	<1			
Benzo(k)fluoranthene	µg/l	1	<1			
Chrysene	µg/l	1	<1			
Dibenz(a,h)anthracene	µg/l	1	<1			
Fluoranthene	µg/l	1	<1			
Fluorene	µg/l	1	<1			
Indeno(1,2,3-c,d)pyrene	µg/l	1	<1			
Naphthalene	µg/l	1	<20	<20		<20
PAHs (Sum of total)	µg/l	1	<1			
Phenanthrene	µg/l	1	<1			
Phenol	µg/l	3	<3			
Pyrene	µg/l	1	<1			
Phenols						
2,4,5-trichlorophenol	µg/l	1	<1			
2,4,6-trichlorophenol	µg/l	10	<10			
2,4-dichlorophenol	µg/l	1	<1			
2,6-dichlorophenol	µg/l	3	<3			
2-chlorophenol	µg/l	3	<3			
4,6-Dinitro-o-cyclohexyl phenol	µg/l	100	<100			
Dinoseb	µg/l	100	<100			
Pentachlorophenol	µg/l	10	<10			
tetrachlorophenols	µg/l	30	<30			
Phenols (Total Halogenated)	µg/l	10	<10			
Phenols (Total Non Halogenated)	µg/l	100	<100			
Solvents						
MTBE	µg/l	1				

Annex C

Fieldwork Methodology

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C.1 *FIELDWORK METHODOLOGY SUMMARY*

C.1.1 *Sub-Surface Clearance*

Prior to works on Site a Dial Before You Dig (DBYD) search was conducted to gather subsurface information relating to the Site, along with a site features plan supplied by Freedom Fuels Australia (FFA).

At the commencement of on-site work a site walk-over was performed with a qualified utility locator in which utilities within the vicinity of the proposed disturbance locations were marked-out.

Physical clearance was undertaken by concrete coring (where required) and Non-Destructive Drilling (NDD) to a depth of 2.1m for all proposed point disturbance locations.

C.1.2 *Soil Sampling*

Soil samples were collected via a number of techniques. These included:

- Grab samples during NDD between the surface and 2.1 metres below ground surface (mbgs);
- Push tube collection with a Geoprobe mechanical drill; and
- Solid flight auger collection with a Geoprobe mechanical drill.

Soil samples were screened with a photo-ionisation detector as per ERM's *Standard Operating Procedure (SOP) #18*.

Sampling techniques were carried out as per ERM's *SOP#02*.

Soil description and logging was performed as per ERM's *SOP#01*.

Quality assurance and quality control measures applied in soil sampling are outlined in ERM's *SOP#16*.

C.1.3 *Monitoring Well Installation*

Monitoring wells were installed when moist to saturated soil was observed at selected locations. They consist of 50mm Poly Vinyl Chloride (PVC) casing down to approximately 1.5m above the groundwater table. Slotted screen casing then follows an appropriate distance above the water table to the bottom of the well to allow for variations in groundwater elevation. An end cap is placed to prevent influx of gravel pack and sediment through the base of the well screen.

Filter pack was then slowly poured into the borehole at different locations around the well to prevent it from building up on one side of the screen until reaching a minimum depth of 0.5m above the screen. A bentonite plug was then poured approximately 1.0m in thickness followed by cement grout to the top of the well which set around a flush-mounted metal gatic to seal off the top of the well from the surface surroundings.

Monitoring well installation was performed in accordance with ERM's SOP#07.

C.1.4 Well Development

Well development consisted of purging a minimum of three to five (3-5) well volumes, until the well becomes dry or until the groundwater is clear with a disposable plastic bailer.

The well volume was calculated by subtracting the depth to groundwater by the total well depth and multiplying this value by the conversion factor for 50mm casing diameter (1.96).

Well depth measurements were recorded by using an intrinsically safe interface probe (IP).

Well development was conducted in accordance with ERM's SOP#08.

C.1.5 Groundwater Sampling

Groundwater sampling was undertaken using the *Low Flow* sampling method outlined in ERM's SOP#03.

Quality assurance and quality control measures applied in groundwater sampling are outlined in ERM's SOP#16.

C.1.6 Surveying

Usher & Company Surveyors were sub-contracted by ERM to conduct surveying tasks required. All groundwater monitoring wells (both those installed by ERM, and existing identified wells) were accurately located and levelled, with measurements recorded for the top-of-casing level.

Surveying was conducted in accordance with ERM's SOP#09.

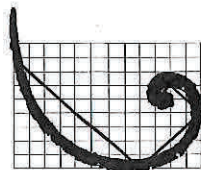
C.1.7 Waste Disposal

Soil and purge water generated from the Stage 2 ESA was removed and disposed of by TransPacific at a licensed waste disposal facility.

Annex D

Borehole Logs

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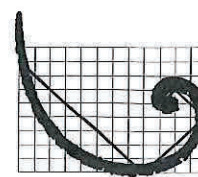
Client: Idemitsu Kosan Co. Ltd Project No.: 0154511 Project Name: Project Indigo Stage 2 Site Name: Kuraby Site Address: 1319 Beenleigh Road, Kuraby QLD 4112			ID: MW01  ERM ERM Australia Pty Ltd	
Drill Start Date: 29/05/2012 Drill Finish Date: 29/05/2012 Drill Co: Proactive Drilling Driller: S.73 Imoleva Drill Method: NDD/GP/SA Hole Type: Monitoring Well	Total Depth (m): 10 Hole Diam. / Width (mm): 150 Casing Type: PVC Casing Diam. (mm): 50 Surface Completion: Gatic Water Strike (m bgl): 8.5	Final Water Level (m bgl): 7.426 Elevation (Ground): 54.466 Elevation (Case): 54.466 Easting (MGA): 508815.765 Northing (MGA): 6946637.822		

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	Analysed	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0							
Concrete										
Sandy Gravel						Y		215	MW1_0.2	
Dark grey brown, small to medium angular gravel, coarse sand, silty clay matrix, slightly plastic, soft, moist.						Y		15.9	MW1_0.5	
Silty Clay								47.8		
Black, plastic, moist, moderately soft, compact.								47.8		
Sandstone						Y			MW1_2.0	
Brown bands, some silty clay, stiff and compact, silty clay is plastic and moist.										
Sandstone								50		
Grey, very stiff and compact, medium to fine grained clast, moderately hard, cuttings are small to medium angular chips.										
								4.9		
Sandstone								22.2		
Brown and light grey, moist, very stiff and compact, sub-rounded cuttings and coarse to medium gravels.						Y		11.8	MW1_5.5	
								61.8		
						Y		65.5	MW1_6.5	
								21.4		
								20.4		
						Y		13	MW1_8.0	
								4.7		
								10		
								4.2		
End of Log			10							

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Client: Idemitsu Kosan Co. Ltd
 Project No.: 0154511
 Project Name: Project Indigo Stage 2
 Site Name: Kuraby
 Site Address: 1319 Beenleigh Road, Kuraby QLD 4112

ID: MW02



ERM

ERM Australia Pty Ltd

Drill Start Date: 30/05/2012	Total Depth (m): 10	Final Water Level (m bgl): 7.254
Drill Finish Date: 30/05/2012	Hole Diam. / Width (mm): 150	Elevation (Ground): 53.762
Drill Co: Proactive Drilling	Casing Type: PVC	Elevation (Case): 53.762
Driller: S.73 Inoleva	Casing Diam. (mm): 50	Easting (MGA): 508798.781
Drill Method: DNDD/SA	Surface Completion: Concrete	Northing (MGA): 6946651.398
Hole Type: Monitoring Well	Water Strike (m bgl): NA	

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	Analysed	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0							
Concrete			0			Y		5	MW2_0.2	
Silty Clay Black, contains some coarse angular gravels, plastic, soft, becomes moderately stiff and compact at 0.5mbgs with minor gravel.			0.5			Y		24.7	MW2_0.5	
			1					18.7		
Silty Gravel Brown, coarse sand and grey sandstone gravel, subangular, contains some silty clay matrix, moist, stiff and compact.			2					6.8		
			3					8.2		
			4					53.8		
			5					317		
			5.5			Y		579	MW2_4.5	
			6					1360		
			6.5					1078		
			7					1499		
			7.5			Y		1699	MW2_6.5	
			8							
			9							
			10							
End of Log										

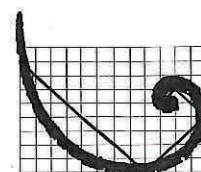
NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: **S.73 Inoleva**
 Checked: **S.73 Inoleva**

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Client: Idemitsu Kosan Co. Ltd
 Project No.: 0154511
 Project Name: Project Indigo Stage 2
 Site Name: Kuraby
 Site Address: 1319 Beenleigh Road, Kuraby QLD 4112

ID: MW03



ERM

ERM Australia Pty Ltd

Drill Start Date: 30/05/2012	Total Depth (m): 10	Final Water Level (m bgl): 6.679
Drill Finish Date: 30/05/2012	Hole Diam. / Width (mm): 150	Elevation (Ground): 53.682
Drill Co: Proactive Drilling	Casing Type: PVC	Elevation (Case): 53.682
Driller: S.73 Inoleva	Casing Diam. (mm): 50	Easting (MGA): 508806.83
Drill Method: NDD/SA	Surface Completion: Concrete	Northing (MGA): 6946661.71
Hole Type: Monitoring Well	Water Strike (m bgl): NA	

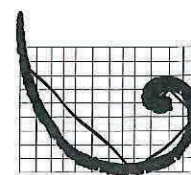
Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	Analysed	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0							
Concrete						Y		0	MW3_0.2	
Sandy Gravel Brown, moist, loose, coarse sand, medium angular gravel.								12.6		
Silty Clay Black, plastic, soft, moist, compact, becomes greenish dark grey colour at 0.9mbgs.			1			Y		9.1	MW3_1.0	
								0.3		
Silty Gravel Brown, coarse sand and gravel, subangular, stiff and compact, contains a silty clay matrix, becomes more silty clay matrix after 5.0mbgs with a silty clay content of approx. 30%.			2					6.1		
			3					31.3		
						Y		383	MW3_3.5	
			4					160		
								25		
			5					32.2		
								16.4		
			6					15.8		
						Y		18.8	MW3_6.5	
			7							
			8							
			9							
			10							
End of Log										

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: **S.73 Inoleva**
 Checked: **S.73 Inoleva**
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Client: Idemitsu Kosan Co. Ltd
 Project No.: 0154511
 Project Name: Project Indigo Stage 2
 Site Name: Kuraby
 Site Address: 1319 Beenleigh Road, Kuraby QLD 4112

ID: SB01



ERM

ERMAustralia Pty Ltd

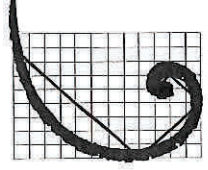
Drill Start Date: 28/05/2012	Total Depth (m): 3	Final Water Level (m bgl): NA
Drill Finish Date: 29/05/2012	Hole Diam. / Width (mm): 150	Elevation (Ground): -
Drill Co: Proactive Drilling	Casing Type: NA	Elevation (Case): NA
Driller: s.73 Inreave	Casing Diam. (mm): NA	Easting (MGA): -
Drill Method: NDD/SA	Surface Completion: Concrete	Northing (MGA): -
Hole Type: Soil Bore	Water Strike (m bgl): NA	

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	Analysed	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0							
Gravel			0			Y		0	SB1_0.3	
Silty Sand Topsoil, medium grained sand, moist, non-plastic, moderately compact, non stiff, moderately sorted, contains some small angular gravel.			0.3					0.3		
			2.4					2.4		
			0.7					0.7		
Sandstone Light brown, stiff to compact, fine to medium grained.			1			Y		0.5	SB1_1.5	
Silty Clay Brown, non-plastic, moist, moderately stiff and compact, bands of <0.1m sandstone, contains some fine to medium grained sand.			2					0.2		
			0.5					0.5		
Sandstone Very hard and stiff.			3			Y		0.5	SB1_3.0	
Silty Clay Brown, moderately plastic, moderately stiff and compact, contains some fine to medium grained sand, moist.										
End of Log			4							
			5							
			6							
			7							
			8							
			9							
			10							

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: **s.73 Inreave**
 Checked: **s.73 Inreave**

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Client: Idemitsu Kosan Co. Ltd Project No.: 0154511 Project Name: Project Indigo Stage 2 Site Name: Kuraby Site Address: 1319 Beenleigh Road, Kuraby QLD 4112			ID: SB02  ERM ERM Australia Pty Ltd	
Drill Start Date: 30/05/2012 Drill Finish Date: 30/05/2012 Drill Co: Proactive Drilling Driller: s.73 Inceva Drill Method: NDD Hole Type: Soil Bore	Total Depth (m): 6 Hole Diam. / Width (mm): 150 Casing Type: NA Casing Diam. (mm): NA Surface Completion: Concrete Water Strike (m bgl): NA	Final Water Level (m bgl): NA Elevation (Ground): - Elevation (Case): NA Easting (MGA): - Northing (MGA): -		

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	Analysed	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0							
Concrete						Y		94.8	SB2_0.2	
Silty Clay Black, minor fine grained sand, soft, moist, plastic, compact.						Y		114	SB2_0.5	
			1					2250		
Silty Gravel Black, coarse gravel, angular, contains some coarse grained sand, stiff and compact, non-plastic, silty clay matrix.			2			Y		2612	SB2_2.0	
Sandy Gravel Black, medium angular gravel, contains some coarse sand, moderately stiff and compact, silty clay matrix, conglomerate.			3			Y		363		
								760	SB2_4.0	
			4							
			5							
			6			Y		300	SB2_6.0	
End of Log			7							
			8							
			9							
			10							

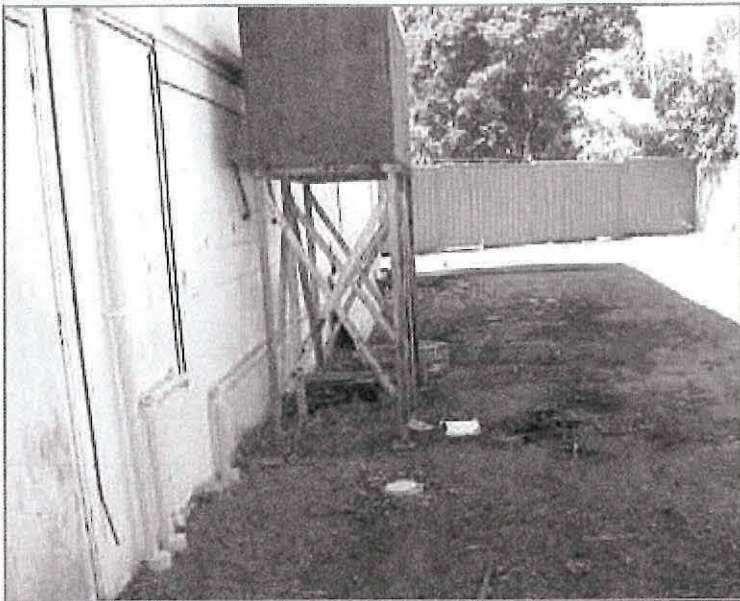
NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: s.73 Inceva
 Checked: s.73 Inceva
 Page 69 of 106

Annex E

Photographic Log

Published on DESI Disclosure Log
RTI Act 2009



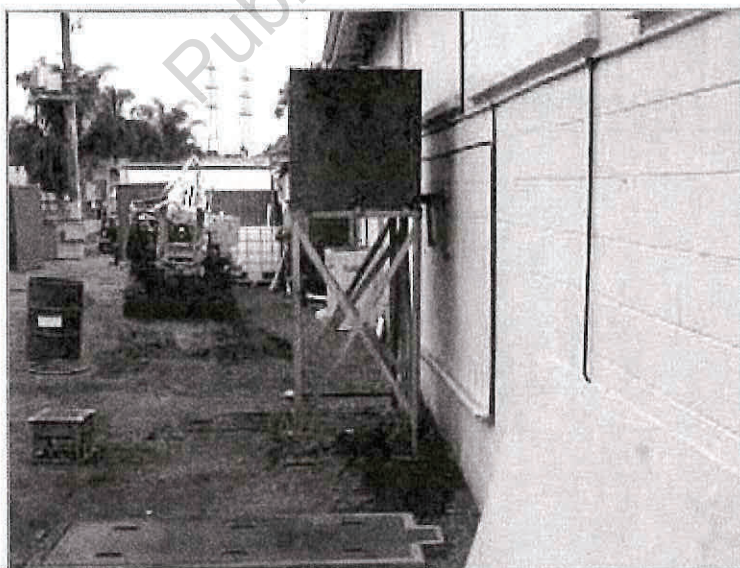
Photograph 1

Photograph of waste oil aboveground storage tank with evident surface staining beneath.



Photograph 2

Photograph of staining on ground beneath AST south of retail building.



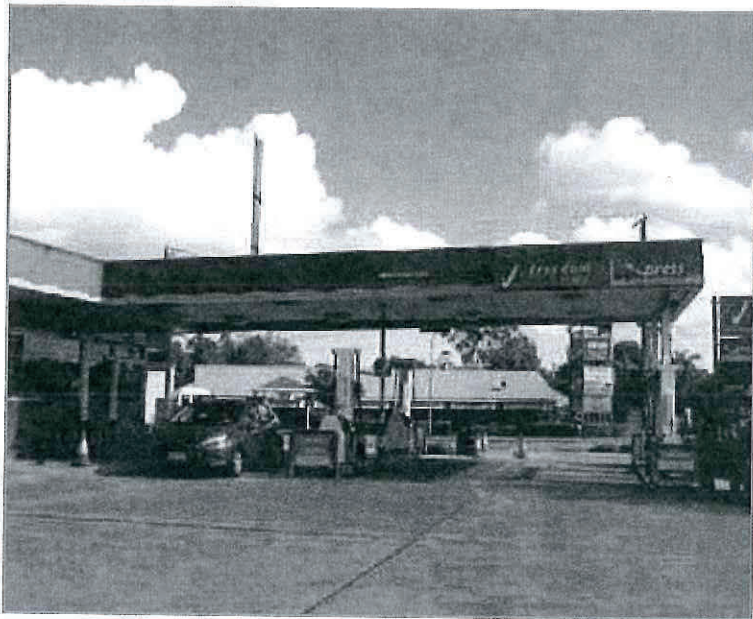
Photograph 3

Photograph of the AST and TIT in the foreground.



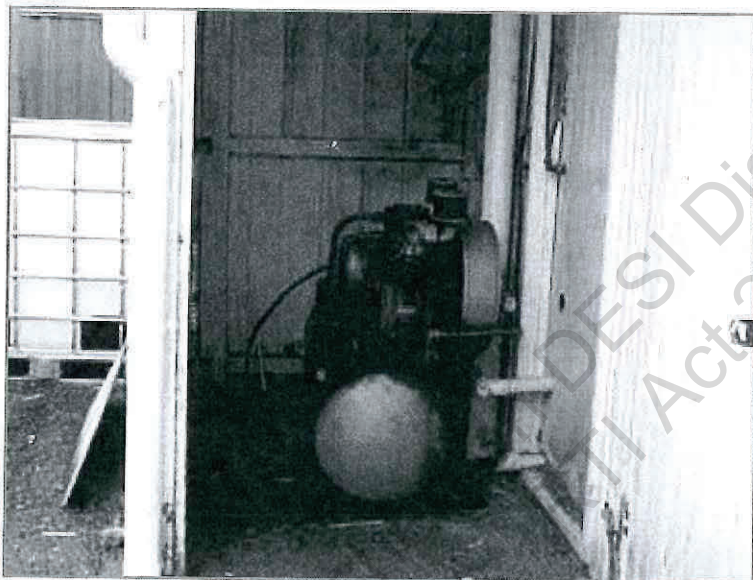
Photographs

0154511 Project Indigo Stage 2 ESA – Kuraby



Photograph 4

Photograph of the service station forecourt, including petrol bowsers.



Photograph 5

Photograph of the compressor near the southwest corner of the retail building.



Photographs

0154511 Project Indigo Stage 2 ESA – Kuraby

Annex F

Laboratory Reports and
Chain of Custody
Documentation

Published on DESI Disclosure Log
RTI Act 2009

☐ Sydney
☐ Melbourne
☒ Brisbane
☐ Perth
☐ Hunter Valley
☐ North Coast
☐ New Zealand
☐ Other

Grnd Floor, 33 Saunders Street, Pymont, NSW, 2009. (ph) 02 8584 8888 (fax) 02 8584 8800
Level 3, Yarra Tower, WTC, 18-38 Siddley Street, Docklands, VIC, 3005. (ph) 03 9696 8011 (fax) 03 9696 8022
Level 1, 60 Leichhardt Street, Spring Hill, QLD, 4004. (ph) 07 3839 8393 (fax) 07 3839 8381
PO Box 7338, Cloisters Square, WA, 6850. (ph) 08 9321 5200 (fax) 08 9321 5262
53 Bonville Avenue, Thornton, NSW, 2322. (ph) 02 4964 2150 (fax) 02 4964 2152
Suite 3/146 Gordon Street, Port Macquarie, NSW, 2444. (ph) 02 6584 7155 (fax) 02 6584 7160
PO Box 106234, Auckland City 1143. (ph) +64 9303 4664 (fax) +64 9303 3254

Project No: 0154511/21
Project Name: Stage II Investigation
Project Location: Kurabur
Project Manager: [Redacted]
Sampler: [Redacted]

COC Number A 4660
Laboratory MGT

General Analysis Requirements										Yes (tick)										Other Comments on sample (eg: high voc, highly contaminated, special detection limits etc)									
1. Turn Around Time (please tick: ☐ 1 Day ☐ 2 Days ☐ Normal TAT)																													
2. Laboratory to filter samples?																													
Shell Network ID Number	Sample ID	Sample Depth	Sample Time	Matrix	Preservation			Containers (number/type)		Type I	Type II	Type III	Type IV	Type V	Type VI	Type VII	Type VIII	Grain Size Distrib.	Free Organic Carbon	TPH Speciation	TCLP Analysis	BTEX	Heavy Metals	Alkalinity PAH	Bo. Load	Methane	Manganese	Asbestos	Other
A632	SB01_0.2-1.0																												
A632	MW01																												
	MW3-0.2	0.2	30/05/12	X					1											X	X	X							
	MW3-1.0	1.0																											
	MW3-3.5	3.5																											
	MW3-6.5	6.5																											
	QA01	-	29/05/12	X																X	X	X							
	QA02	-	29/05/12	X																X	X	X							
	QA03	-	30/05/12	X					3																				
	QA04	-	30/05/12	X					3											X	X	X							

Ship via MGT Courier (TNT Account # 20744136) ☐ Other Shipment method ☐

Date/Time: 01/06/12 12:00 Received by: [Redacted] Date/Time: 31/5/2009

Date/Time: [Redacted] Received by: [Redacted] Date/Time: [Redacted]

Page 2 of 2

Sample Receipt Advice

Company name: ERM Queensland
Contact name: s.73 irrelevant info
Client job number: STAGE II INVESTIGATION KURABY 0154511/21
COC number: 4659
Turn around time: 1 Day
Date/Time received: May 31, 2012 12:00 PM
MGT lab reference: 339188

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 mgt-LabMark Sample Receipt : 5.5 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:

s.73 irrelevant info on Phone : +61 3 9564 7055 or by e.mail s.73 irrelevant info@mgtlabmark.com.au

Results will be delivered electronically via e.mail to s.73 irrelevant information@erm.com.

mgt Sample Receipt

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Order No.: 339188
Report #: (07) 3839 8393
Phone:
Fax:

Received: May 31, 2012 12:00 AM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

Client Job No.: STAGE II INVESTIGATION KURABY
0154511/21

mgt-LabMark Client Manager

Sample Detail

Laboratory where analysis is conducted					Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271							X				
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794					X	X		X	X	X	X
External Laboratory											
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
SB1_0.3	May 28, 2012		Soil	B12-My24109	X	X		X	X	X	X
SB1_1.5	May 29, 2012		Soil	B12-My24110	X	X		X	X	X	X
SB1_3.0	May 29, 2012		Soil	B12-My24111	X	X		X	X	X	X
SB2_0.2	May 30, 2012		Soil	B12-My24112	X	X		X	X	X	X
SB2_0.5	May 30, 2012		Soil	B12-My24113	X	X		X	X	X	X
SB2_2.0	May 30, 2012		Soil	B12-My24114	X	X		X	X	X	X
SB2_4.0	May 30, 2012		Soil	B12-My24115	X	X		X	X	X	X
SB2_6.0	May 30, 2012		Soil	B12-My24116	X	X		X	X	X	X
MW1_0.2	May 29, 2012		Soil	B12-My24117	X	X		X	X	X	X

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Client Job No.: STAGE II INVESTIGATION KURABY
0154511/21

Order No.:
Report #: 339188
Phone: (07) 3839 8393
Fax:

Received: May 31, 2012 12:00 AM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted			Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271					X				
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794						X	X	X	X
External Laboratory									
MW1_0.5	May 29, 2012	Soil	B12-My24118			X	X	X	X
MW1_2.0	May 29, 2012	Soil	B12-My24119			X	X	X	X
MW1_5.5	May 29, 2012	Soil	B12-My24120			X	X	X	X
MW1_6.5	May 29, 2012	Soil	B12-My24121			X	X	X	X
MW1_8.0	May 29, 2012	Soil	B12-My24122			X	X	X	X
MW2_0.2	May 30, 2012	Soil	B12-My24123			X	X	X	X
MW2_0.5	May 30, 2012	Soil	B12-My24124		X	X	X	X	X
MW2_4.5	May 30, 2012	Soil	B12-My24125			X	X	X	X
MW2_6.5	May 30, 2012	Soil	B12-My24126		X	X	X	X	X
MW3_0.2	May 30, 2012	Soil	B12-My24127			X	X	X	X

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Client Job No.: STAGE II INVESTIGATION KURABY
0154511/21

Order No.: 339188
Report #: (07) 3839 8393
Phone:
Fax:

Received: May 31, 2012 12:00 AM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted				Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794				X	X		X	X	X	X
External Laboratory										
MW3_1.0	May 30, 2012	Soil	B12-My24128	X	X		X	X	X	X
MW3_3.5	May 30, 2012	Soil	B12-My24129	X	X		X	X	X	X
MW3_6.5	May 30, 2012	Soil	B12-My24130	X	X		X	X	X	X
QA01	May 30, 2012	Soil	B12-My24131	X	X		X	X	X	X
QA02	May 30, 2012	Soil	B12-My24132	X	X		X	X	X	X
QA03	May 30, 2012	Water	B12-My24133					X		X
QA04	May 30, 2012	Water	B12-My24134					X		X



ERM
Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Attention: **4.73 irrelevant ii**

Report **339188-S**
Client Reference **STAGE II INVESTIGATION KURABY 0154511/21**
Received Date **May 31, 2012**



Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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.

Client Sample ID			SB1_0.3	SB1_1.5	SB1_3.0	SB2_0.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24109	B12-My24110	B12-My24111	B12-My24112
Date Sampled			May 28, 2012	May 29, 2012	May 29, 2012	May 30, 2012
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	83	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	180	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	260	< 50	< 50	< 50
BTEX						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.33
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
o-Xylene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes(ortho,meta and para)	0.15	mg/kg	< 0.15	< 0.15	< 0.15	< 0.15
Fluorobenzene (surr.)	1	%	90	71	74	82
Total Recoverable Hydrocarbons - Draft 2010 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 C6-C10 less BTEX (F1)x ^{N03}	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	220	< 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)fluoranthene	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			SB1_0.3	SB1_1.5	SB1_3.0	SB2_0.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24109	B12-My24110	B12-My24111	B12-My24112
Date Sampled			May 28, 2012	May 29, 2012	May 29, 2012	May 30, 2012
Test/Reference	LOR	Unit				
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
p-Terphenyl-d14 (surr.)	1	%	115	115	114	115
2-Fluorobiphenyl (surr.)	1	%	90	86	88	88
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	86	83	93	87
Lead	5	mg/kg	270	< 5	44	13
% Moisture	0.1	%	22	20	35	24

Client Sample ID			SB2_0.5	SB2_2.0	SB2_4.0	SB2_6.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24113	B12-My24114	B12-My24115	B12-My24116
Date Sampled			May 30, 2012	May 30, 2012	May 30, 2012	May 30, 2012
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	130	< 20	32
TRH C10-C14	20	mg/kg	< 20	79	30	32
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	79	< 50	< 50
BTEX						
Benzene	0.05	mg/kg	0.98	1.8	< 0.05	0.08
Toluene	0.05	mg/kg	< 0.05	2.3	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	0.13	5.6	0.16	0.44
o-Xylene	0.05	mg/kg	< 0.05	1.5	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	< 0.1	5.8	0.11	0.25
Xylenes(ortho,meta and para)	0.15	mg/kg	< 0.15	7.3	< 0.15	0.30
Fluorobenzene (surr.)	1	%	83	90	96	93
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	4.0	0.9	0.8
TRH C6-C10	20	mg/kg	< 20	170	< 20	39
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	150	< 20	38
TRH C6-C10 less BTEX (F1) ^{xN03}	20	mg/kg	< 20	150	< 20	38
TRH >C10-C16	50	mg/kg	< 50	69	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	65	< 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)fluoranthene	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
p-Terphenyl-d14 (surr.)	1	%	98	100	119	118
2-Fluorobiphenyl (surr.)	1	%	70	72	95	96
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



Client Sample ID			SB2_0.5	SB2_2.0	SB2_4.0	SB2_6.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24113	B12-My24114	B12-My24115	B12-My24116
Date Sampled			May 30, 2012	May 30, 2012	May 30, 2012	May 30, 2012
Test/Reference	LOR	Unit				
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	77	77	91	93
Lead	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture	0.1	%	31	24	9.7	20

Client Sample ID			MW1_0.2	MW1_0.5	MW1_2.0	MW1_5.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24117	B12-My24118	B12-My24119	B12-My24120
Date Sampled			May 29, 2012	May 29, 2012	May 29, 2012	May 29, 2012
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	72	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	930	< 20	490	< 20
TRH C15-C28	50	mg/kg	94	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	1000	< 50	490	< 50
BTEX						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	0.43	< 0.05	0.08	< 0.05
o-Xylene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	0.14	< 0.1	0.13	< 0.1
Xylenes(ortho.meta and para)	0.15	mg/kg	< 0.15	< 0.15	0.16	< 0.15
Fluorobenzene (surr.)	1	%	90	85	86	72
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	8.2	3.3	4.3	2.6
TRH C6-C10	20	mg/kg	160	< 20	71	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	160	< 20	71	< 20
TRH C6-C10 less BTEX (F1) ^{N03}	20	mg/kg	160	< 20	71	< 20
TRH >C10-C16	50	mg/kg	860	< 50	430	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	850	< 50	430	< 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)fluoranthene	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	2.7	< 0.5	1.5	< 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	2.7	< 0.5	1.5	< 0.5
p-Terphenyl-d14 (surr.)	1	%	120	120	118	119
2-Fluorobiphenyl (surr.)	1	%	96	72	84	88
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



LabMark
ENVIRONMENTAL LABORATORIES

Client Sample ID			MW1_0.2	MW1_0.5	MW1_2.0	MW1_5.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24117	B12-My24118	B12-My24119	B12-My24120
Date Sampled			May 29, 2012	May 29, 2012	May 29, 2012	May 29, 2012
Test/Reference	LOR	Unit				
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	88	83	82	96
Lead	5	mg/kg	33	< 5	< 5	< 5
% Moisture	0.1	%	19	35	19	23

Client Sample ID			MW1_6.5	MW1_8.0	MW2_0.2	MW2_0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24121	B12-My24122	B12-My24123	B12-My24124
Date Sampled			May 29, 2012	May 29, 2012	May 30, 2012	May 30, 2012
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
o-Xylene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes(ortho.meta and para)	0.15	mg/kg	< 0.15	< 0.15	< 0.15	< 0.15
Fluorobenzene (surr.)	1	%	75	74	73	74
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	1.1	< 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 C6-C10 less BTEX (F1)x ^{N03}	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)fluoranthene	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
p-Terphenyl-d14 (surr.)	1	%	104	101	119	115
2-Fluorobiphenyl (surr.)	1	%	64	71	85	96
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



Client Sample ID			MW1_6.5	MW1_8.0	MW2_0.2	MW2_0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24121	B12-My24122	B12-My24123	B12-My24124
Date Sampled			May 29, 2012	May 29, 2012	May 30, 2012	May 30, 2012
Test/Reference	LOR	Unit				
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	73	68	84	91
Particle Size by Sieve analysis*						
<63 Micron	0.1	% w/w	-	-	-	73
>2000 Micron	0.1	% w/w	-	-	-	0.9
1000-2000 Micron	0.1	% w/w	-	-	-	4.8
125-250 Micron	0.1	% w/w	-	-	-	7.1
250-500 Micron	0.1	% w/w	-	-	-	3.2
500-1000 Micron	0.1	% w/w	-	-	-	4.2
63-125 Micron	0.1	% w/w	-	-	-	7.4
Lead	5	mg/kg	< 5	< 5	7.2	< 5
% Moisture	0.1	%	28	9.4	29	32

Client Sample ID			MW2_4.5	MW2_6.5	MW3_0.2	MW3_1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24125	B12-My24126	B12-My24127	B12-My24128
Date Sampled			May 30, 2012	May 30, 2012	May 30, 2012	May 30, 2012
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	47	43	< 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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	0.33	< 0.05	< 0.05	< 0.05
o-Xylene	0.05	mg/kg	0.07	0.24	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	0.97	0.84	< 0.1	< 0.1
Xylenes(ortho.meta and para)	0.15	mg/kg	1.0	1.1	< 0.15	< 0.15
Fluorobenzene (surr.)	1	%	86	90	71	84
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	1.3	1.8	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	22	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N03}	20	mg/kg	20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	54	52	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	53	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)fluoranthene	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
p-Terphenyl-d14 (surr.)	1	%	134	76	119	120
2-Fluorobiphenyl (surr.)	1	%	105	54	82	77
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



Client Sample ID			MW2_4.5	MW2_6.5	MW3_0.2	MW3_1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24125	B12-My24126	B12-My24127	B12-My24128
Date Sampled			May 30, 2012	May 30, 2012	May 30, 2012	May 30, 2012
Test/Reference	LOR	Unit				
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	97	51	81	80
Particle Size by Sieve analysis*						
<63 Micron	0.1	% w/w	-	23	-	-
>2000 Micron	0.1	% w/w	-	46	-	-
1000-2000 Micron	0.1	% w/w	-	9.7	-	-
125-250 Micron	0.1	% w/w	-	4.6	-	-
250-500 Micron	0.1	% w/w	-	5.5	-	-
500-1000 Micron	0.1	% w/w	-	7.9	-	-
63-125 Micron	0.1	% w/w	-	3.8	-	-
Lead	5	mg/kg	< 5	< 5	13	< 5
% Moisture	0.1	%	14	14	8.0	28

Client Sample ID			MW3_3.5	MW3_6.5	QA01	QA02
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24129	B12-My24130	B12-My24131	B12-My24132
Date Sampled			May 30, 2012	May 30, 2012	May 29, 2012	May 29, 2012
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	31	26	< 20	64
TRH C15-C28	50	mg/kg	< 50	< 50	51	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	100	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	150	64
BTEX						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
o-Xylene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Total m+p-Xylenes	0.10	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes(ortho.meta and para)	0.15	mg/kg	< 0.15	< 0.15	< 0.15	< 0.15
Fluorobenzene (surr.)	1	%	86	84	76	91
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	2.1
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 C6-C10 less BTEX (F1) ^{N03}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	61
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	59
TRH >C16-C34	100	mg/kg	< 100	< 100	130	< 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)fluoranthene	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
p-Terphenyl-d14 (surr.)	1	%	119	119	118	120
2-Fluorobiphenyl (surr.)	1	%	94	87	96	80
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5



Client Sample ID			MW3_3.5	MW3_6.5	QA01	QA02
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			B12-My24129	B12-My24130	B12-My24131	B12-My24132
Date Sampled			May 30, 2012	May 30, 2012	May 29, 2012	May 29, 2012
Test/Reference	LOR	Unit				
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	5.0	mg/kg	< 5	< 5	< 5	< 5
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	86	81	90	84
Lead	5	mg/kg	< 5	< 5	22	< 5
% Moisture	0.1	%	9.5	13	21	37

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Brisbane	May 31, 2012	14 Day
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - MGT 100A	Brisbane	May 31, 2012	14 Day
BTEX - Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons	Brisbane	May 31, 2012	14 Day
Polycyclic Aromatic Hydrocarbons - Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons	Brisbane	May 31, 2012	14 Day
Particle Size by Sieve analysis* - Method: AS1289.C6.1-1977 Determination of Particle Size by Sieving	Melbourne	Jun 01, 2012	28 Day
Lead	Brisbane	May 31, 2012	
% Moisture - Method: Method 102 - ANZECC - % Moisture	Brisbane	May 31, 2012	14 Day
Phenols (IWRG 621)			
Phenols (Halogenated) - Method: USEPA 8270 Phenols	Brisbane	May 31, 2012	14 Day
Phenols (non-Halogenated) - Method: USEPA 8270 Phenols	Brisbane	May 31, 2012	14 Day

Published on DESI Disclosure Log
RTI Act 2009

Company Name:
Address:

ERM Queensland
Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Order No.:
Report #:
Phone:
Fax:

339188
(07) 3839 8393

Received:
Due:
Priority:
Contact name:

May 31, 2012 12:00 PM
Jun 1, 2012 4:00 PM
1 Day

Client Job No.:

STAGE II INVESTIGATION KURABY
0154511/21

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted					Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271							X				
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
External Laboratory											
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
SB1_0.3	May 28, 2012		Soil	B12-My24109	X	X		X	X	X	X
SB1_1.5	May 29, 2012		Soil	B12-My24110	X	X		X	X	X	X
SB1_3.0	May 29, 2012		Soil	B12-My24111	X	X		X	X	X	X
SB2_0.2	May 30, 2012		Soil	B12-My24112	X	X		X	X	X	X
SB2_0.5	May 30, 2012		Soil	B12-My24113	X	X		X	X	X	X
SB2_2.0	May 30, 2012		Soil	B12-My24114	X	X		X	X	X	X
SB2_4.0	May 30, 2012		Soil	B12-My24115	X	X		X	X	X	X
SB2_6.0	May 30, 2012		Soil	B12-My24116	X	X		X	X	X	X
MW1_0.2	May 29, 2012		Soil	B12-My24117	X	X		X	X	X	X

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
 Spring Hill
 QLD 4004

Client Job No.: STAGE II INVESTIGATION KURABY
 0154511/21

Order No.: 339188
Report #: (07) 3839 8393
Phone:
Fax:

Received: May 31, 2012 12:00 PM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted			Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271					X				
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794			X	X		X	X	X	X
External Laboratory									
MW1_0.5	May 29, 2012	Soil	B12-My24118	X	X	X	X	X	X
MW1_2.0	May 29, 2012	Soil	B12-My24119	X	X	X	X	X	X
MW1_5.5	May 29, 2012	Soil	B12-My24120	X	X	X	X	X	X
MW1_6.5	May 29, 2012	Soil	B12-My24121	X	X	X	X	X	X
MW1_8.0	May 29, 2012	Soil	B12-My24122	X	X	X	X	X	X
MW2_0.2	May 30, 2012	Soil	B12-My24123	X	X	X	X	X	X
MW2_0.5	May 30, 2012	Soil	B12-My24124	X	X	X	X	X	X
MW2_4.5	May 30, 2012	Soil	B12-My24125	X	X	X	X	X	X
MW2_6.5	May 30, 2012	Soil	B12-My24126	X	X	X	X	X	X
MW3_0.2	May 30, 2012	Soil	B12-My24127	X	X	X	X	X	X

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
 Spring Hill
 QLD 4004

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Sample Detail

Laboratory where analysis is conducted				Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
MW3_1.0	May 30, 2012	Soil	B12-My24128	X	X		X	X	X	X
MW3_3.5	May 30, 2012	Soil	B12-My24129	X	X		X	X	X	X
MW3_6.5	May 30, 2012	Soil	B12-My24130	X	X		X	X	X	X
QA01	May 29, 2012	Soil	B12-My24131	X	X		X	X	X	X
QA02	May 29, 2012	Soil	B12-My24132	X	X		X	X	X	X
QA03	May 30, 2012	Water	B12-My24133					X		X
QA04	May 30, 2012	Water	B12-My24134					X		X

General

- 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.
- All soil results are reported on a dry basis, unless otherwise stated.
- Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- 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 an RPD

UNITS

mg/kg: milligrams per Kilogram

µg/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: Nephelometric Turbidity 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 client's batch of samples but run within the laboratory batch of analysis.
Batch SPIKE:	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA:	U.S 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 was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

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

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
- 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.
- 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
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample
- Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
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 USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	< 0.05		0.05	Pass	
Toluene	mg/kg	< 0.05		0.05	Pass	
Ethylbenzene	mg/kg	< 0.05		0.05	Pass	
o-Xylene	mg/kg	< 0.05		0.05	Pass	
Total m+p-Xylenes	mg/kg	< 0.1		0.10	Pass	
Xylenes(ortho.meta and para)	mg/kg	< 0.15		0.15	Pass	
Method Blank						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
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 C6-C10 less BTEX (F1)x	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 USEPA 8270 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)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						
Phenols (Halogenated) USEPA 8270 Phenols						
2-Chlorophenol	mg/kg	< 0.5		0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5		0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1		1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1		1.0	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5		0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1		1.0	Pass	
Pentachlorophenol	mg/kg	< 1		1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 5		5.0	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Phenols (non-Halogenated) USEPA 8270 Phenols						
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20		20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5		5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2		0.2	Pass	
2-Nitrophenol	mg/kg	< 1		1	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5		0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5		5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4		0.4	Pass	
4-Nitrophenol	mg/kg	< 5		5	Pass	
Dinoseb	mg/kg	< 20		20	Pass	
Phenol	mg/kg	< 0.5		0.5	Pass	
Method Blank						
Lead	mg/kg	< 5		5	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	%	93		70-130	Pass	
TRH C10-C14	%	81		70-130	Pass	
LCS - % Recovery						
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	%	107		70-130	Pass	
Toluene	%	113		70-130	Pass	
Ethylbenzene	%	113		70-130	Pass	
Total m+p-Xylenes	%	107		70-130	Pass	
Xylenes(ortho,meta and para)	%	107		70-130	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
TRH C6-C10	%	110		70-130	Pass	
TRH >C10-C16	%	81		70-130	Pass	
LCS - % Recovery						
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	108		70-130	Pass	
Acenaphthylene	%	105		70-130	Pass	
Anthracene	%	109		70-130	Pass	
Benz(a)anthracene	%	107		70-130	Pass	
Benzo(a)pyrene	%	105		70-130	Pass	
Benzo(b)fluoranthene	%	109		70-130	Pass	
Benzo(g,h,i)perylene	%	118		70-130	Pass	
Benzo(k)fluoranthene	%	112		70-130	Pass	
Chrysene	%	109		70-130	Pass	
Dibenz(a,h)anthracene	%	93		70-130	Pass	
Fluoranthene	%	119		70-130	Pass	
Fluorene	%	108		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	98		70-130	Pass	
Naphthalene	%	105		70-130	Pass	
Phenanthrene	%	109		70-130	Pass	
Pyrene	%	118		70-130	Pass	
LCS - % Recovery						
Phenols (Halogenated) USEPA 8270 Phenols						
2-Chlorophenol	%	103		30-130	Pass	
2,4-Dichlorophenol	%	98		30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
2,4,5-Trichlorophenol	%	99			30-130	Pass		
2,4,6-Trichlorophenol	%	109			30-130	Pass		
2,6-Dichlorophenol	%	104			30-130	Pass		
4-Chloro-3-methylphenol	%	102			30-130	Pass		
Pentachlorophenol	%	77			30-130	Pass		
Tetrachlorophenols - Total	%	91			30-130	Pass		
LCS - % Recovery								
Phenols (non-Halogenated) USEPA 8270 Phenols								
2-Cyclohexyl-4,6-dinitrophenol	%	78			30-130	Pass		
2-Methyl-4,6-dinitrophenol	%	84			30-130	Pass		
2-Methylphenol (o-Cresol)	%	102			30-130	Pass		
2-Nitrophenol	%	93			30-130	Pass		
2,4-Dimethylphenol	%	102			30-130	Pass		
2,4-Dinitrophenol	%	77			30-130	Pass		
3&4-Methylphenol (m&p-Cresol)	%	100			30-130	Pass		
4-Nitrophenol	%	61			30-130	Pass		
Dinoseb	%	95			30-130	Pass		
Phenol	%	100			30-130	Pass		
LCS - % Recovery								
Lead	%	105			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	B12-My24109	CP	%	103		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	B12-My24109	CP	%	116		70-130	Pass	
Toluene	B12-My24109	CP	%	120		70-130	Pass	
Ethylbenzene	B12-My24109	CP	%	123		70-130	Pass	
o-Xylene	B12-My24109	CP	%	121		70-130	Pass	
Total m+p-Xylenes	B12-My24109	CP	%	119		70-130	Pass	
Xylenes(ortho,meta and para)	B12-My24109	CP	%	120		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1				
TRH C6-C10	B12-My24109	CP	%	118		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B12-My24109	CP	%	113		70-130	Pass	
Acenaphthylene	B12-My24109	CP	%	110		70-130	Pass	
Anthracene	B12-My24109	CP	%	116		70-130	Pass	
Benz(a)anthracene	B12-My24109	CP	%	116		70-130	Pass	
Benzo(a)pyrene	B12-My24109	CP	%	112		70-130	Pass	
Benzo(b)fluoranthene	B12-My24109	CP	%	118		70-130	Pass	
Benzo(g,h,i)perylene	B12-My24109	CP	%	119		70-130	Pass	
Benzo(k)fluoranthene	B12-My24109	CP	%	102		70-130	Pass	
Chrysene	B12-My24109	CP	%	115		70-130	Pass	
Dibenz(a,h)anthracene	B12-My24109	CP	%	109		70-130	Pass	
Fluoranthene	B12-My24109	CP	%	126		70-130	Pass	
Fluorene	B12-My24109	CP	%	116		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B12-My24109	CP	%	112		70-130	Pass	
Naphthalene	B12-My24109	CP	%	106		70-130	Pass	
Phenanthrene	B12-My24109	CP	%	115		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	B12-My24109	CP	%	127		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	B12-My24109	CP	%	104		30-130	Pass	
2,4-Dichlorophenol	B12-My24109	CP	%	100		30-130	Pass	
2,4,5-Trichlorophenol	B12-My24109	CP	%	114		30-130	Pass	
2,4,6-Trichlorophenol	B12-My24109	CP	%	118		30-130	Pass	
2,6-Dichlorophenol	B12-My24109	CP	%	109		30-130	Pass	
4-Chloro-3-methylphenol	B12-My24109	CP	%	113		30-130	Pass	
Pentachlorophenol	B12-My24109	CP	%	97		30-130	Pass	
Tetrachlorophenols - Total	B12-My24109	CP	%	111		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	B12-My24109	CP	%	86		30-130	Pass	
2-Methyl-4,6-dinitrophenol	B12-My24109	CP	%	88		30-130	Pass	
2-Methylphenol (o-Cresol)	B12-My24109	CP	%	106		30-130	Pass	
2-Nitrophenol	B12-My24109	CP	%	99		30-130	Pass	
2,4-Dimethylphenol	B12-My24109	CP	%	105		30-130	Pass	
2,4-Dinitrophenol	B12-My24109	CP	%	90		70-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B12-My24109	CP	%	108		30-130	Pass	
4-Nitrophenol	B12-My24109	CP	%	88		30-130	Pass	
Dinoseb	B12-My24109	CP	%	99		30-130	Pass	
Phenol	B12-My24109	CP	%	102		30-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	B12-My24119	CP	%	110		70-130	Pass	
TRH C10-C14	B12-My24119	CP	%	77		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	B12-My24119	CP	%	110		70-130	Pass	
Toluene	B12-My24119	CP	%	119		70-130	Pass	
Ethylbenzene	B12-My24119	CP	%	121		70-130	Pass	
o-Xylene	B12-My24119	CP	%	114		70-130	Pass	
Total m+p-Xylenes	B12-My24119	CP	%	113		70-130	Pass	
Xylenes(ortho.meta and para)	B12-My24119	CP	%	113		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1				
TRH C6-C10	B12-My24119	CP	%	130		70-130	Pass	
TRH >C10-C16	B12-My24119	CP	%	78		70-130	Pass	
Spike - % Recovery								
				Result 1				
Lead	B12-My24119	CP	%	99		75-125	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	B12-My24129	CP	%	94		70-130	Pass	
TRH C10-C14	B12-My24129	CP	%	80		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	B12-My24129	CP	%	104		70-130	Pass	
Toluene	B12-My24129	CP	%	110		70-130	Pass	
Ethylbenzene	B12-My24129	CP	%	112		70-130	Pass	
o-Xylene	B12-My24129	CP	%	105		70-130	Pass	
Total m+p-Xylenes	B12-My24129	CP	%	104		70-130	Pass	
Xylenes(ortho.meta and para)	B12-My24129	CP	%	104		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1				
TRH C6-C10	B12-My24129	CP	%	112		70-130	Pass	
TRH >C10-C16	B12-My24129	CP	%	81		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B12-My24129	CP	%	116		70-130	Pass	
Acenaphthylene	B12-My24129	CP	%	111		70-130	Pass	
Anthracene	B12-My24129	CP	%	118		70-130	Pass	
Benz(a)anthracene	B12-My24129	CP	%	113		70-130	Pass	
Benzo(a)pyrene	B12-My24129	CP	%	93		70-130	Pass	
Benzo(b)fluoranthene	B12-My24129	CP	%	111		70-130	Pass	
Benzo(g,h,i)perylene	B12-My24129	CP	%	126		70-130	Pass	
Benzo(k)fluoranthene	B12-My24129	CP	%	114		70-130	Pass	
Chrysene	B12-My24129	CP	%	115		70-130	Pass	
Dibenz(a,h)anthracene	B12-My24129	CP	%	94		70-130	Pass	
Fluoranthene	B12-My24129	CP	%	120		70-130	Pass	
Fluorene	B12-My24129	CP	%	116		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B12-My24129	CP	%	105		70-130	Pass	
Naphthalene	B12-My24129	CP	%	107		70-130	Pass	
Phenanthrene	B12-My24129	CP	%	118		70-130	Pass	
Pyrene	B12-My24129	CP	%	124		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	B12-My24129	CP	%	103		30-130	Pass	
2,4-Dichlorophenol	B12-My24129	CP	%	100		30-130	Pass	
2,4,5-Trichlorophenol	B12-My24129	CP	%	105		30-130	Pass	
2,4,6-Trichlorophenol	B12-My24129	CP	%	114		30-130	Pass	
2,6-Dichlorophenol	B12-My24129	CP	%	108		30-130	Pass	
4-Chloro-3-methylphenol	B12-My24129	CP	%	108		30-130	Pass	
Pentachlorophenol	B12-My24129	CP	%	105		30-130	Pass	
Tetrachlorophenols - Total	B12-My24129	CP	%	104		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	B12-My24129	CP	%	106		30-130	Pass	
2-Methyl-4,6-dinitrophenol	B12-My24129	CP	%	104		30-130	Pass	
2-Methylphenol (o-Cresol)	B12-My24129	CP	%	106		30-130	Pass	
2-Nitrophenol	B12-My24129	CP	%	99		30-130	Pass	
2,4-Dimethylphenol	B12-My24129	CP	%	106		30-130	Pass	
2,4-Dinitrophenol	B12-My24129	CP	%	89		70-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B12-My24129	CP	%	105		30-130	Pass	
4-Nitrophenol	B12-My24129	CP	%	77		30-130	Pass	
Dinoseb	B12-My24129	CP	%	114		30-130	Pass	
Phenol	B12-My24129	CP	%	103		30-130	Pass	
Spike - % Recovery								
				Result 1				
Lead	B12-My24129	CP	%	100		75-125	Pass	
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	B12-My24109	CP	mg/kg	< 20	< 20	< 1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	B12-My24109	CP	mg/kg	< 0.05	< 0.05	< 1	30%	Pass
Toluene	B12-My24109	CP	mg/kg	< 0.05	< 0.05	< 1	30%	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	B12-My24109	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
o-Xylene	B12-My24109	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Total m+p-Xylenes	B12-My24109	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes(ortho.meta and para)	B12-My24109	CP	mg/kg	< 0.15	< 0.15	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	B12-My24109	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B12-My24109	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	B12-My24109	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)x	B12-My24109	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Lead	B12-My24109	CP	mg/kg	270	270	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B12-My24119	CP	mg/kg	< 20	< 20	7.0	30%	Pass	
TRH C10-C14	B12-My24119	CP	mg/kg	490	450	9.0	30%	Pass	
TRH C15-C28	B12-My24119	CP	mg/kg	< 50	< 50	8.0	30%	Pass	
TRH C29-C36	B12-My24119	CP	mg/kg	< 50	< 50	11	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B12-My24119	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toluene	B12-My24119	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Ethylbenzene	B12-My24119	CP	mg/kg	0.08	0.08	4.0	30%	Pass	
o-Xylene	B12-My24119	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Total m+p-Xylenes	B12-My24119	CP	mg/kg	0.13	0.14	9.0	30%	Pass	
Xylenes(ortho.meta and para)	B12-My24119	CP	mg/kg	0.16	0.17	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	B12-My24119	CP	mg/kg	4.3	4.3	2.0	30%	Pass	
TRH C6-C10	B12-My24119	CP	mg/kg	71	66	8.0	30%	Pass	
TRH C6-C10 less BTEX (F1)	B12-My24119	CP	mg/kg	71	66	8.0	30%	Pass	
TRH C6-C10 less BTEX (F1)x	B12-My24119	CP	mg/kg	71	66	8.0	30%	Pass	
TRH >C10-C16	B12-My24119	CP	mg/kg	430	400	8.0	30%	Pass	
TRH >C16-C34	B12-My24119	CP	mg/kg	< 100	< 100	14	30%	Pass	
TRH >C34-C40	B12-My24119	CP	mg/kg	< 100	< 100	27	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B12-My24119	CP	mg/kg	1.5	1.3	19	30%	Pass	
Phenanthrene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dichlorophenol	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4,5-Trichlorophenol	B12-My24119	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4,6-Trichlorophenol	B12-My24119	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,6-Dichlorophenol	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B12-My24119	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B12-My24119	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B12-My24119	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4,6-dinitrophenol	B12-My24119	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4,6-dinitrophenol	B12-My24119	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B12-My24119	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	B12-My24119	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4-Dimethylphenol	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dinitrophenol	B12-My24119	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B12-My24119	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B12-My24119	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B12-My24119	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B12-My24119	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Lead	B12-My24119	CP	mg/kg	< 5	< 5	200	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B12-My24129	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B12-My24129	CP	mg/kg	31	22	33	30%	Fail	Q15
TRH C15-C28	B12-My24129	CP	mg/kg	< 50	< 50	30	30%	Pass	
TRH C29-C36	B12-My24129	CP	mg/kg	< 50	< 50	18	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B12-My24129	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toluene	B12-My24129	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Ethylbenzene	B12-My24129	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
o-Xylene	B12-My24129	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Total m+p-Xylenes	B12-My24129	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes(ortho,meta and para)	B12-My24129	CP	mg/kg	< 0.15	< 0.15	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B12-My24129	CP	mg/kg	< 20	< 20	14	30%	Pass	
TRH C6-C10 less BTEX (F1)	B12-My24129	CP	mg/kg	< 20	< 20	14	30%	Pass	
TRH C6-C10 less BTEX (F1)x	B12-My24129	CP	mg/kg	< 20	< 20	14	30%	Pass	
TRH >C10-C16	B12-My24129	CP	mg/kg	< 50	< 50	31	30%	Fail	Q15
TRH >C16-C34	B12-My24129	CP	mg/kg	< 100	< 100	31	30%	Fail	Q15
TRH >C34-C40	B12-My24129	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	18	30%	Pass	
Fluorene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B12-My24129	CP	mg/kg	< 0.5	< 0.5	16	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dichlorophenol	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4,5-Trichlorophenol	B12-My24129	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4,6-Trichlorophenol	B12-My24129	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,6-Dichlorophenol	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B12-My24129	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B12-My24129	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B12-My24129	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4,6-dinitrophenol	B12-My24129	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4,6-dinitrophenol	B12-My24129	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B12-My24129	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	B12-My24129	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4-Dimethylphenol	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dinitrophenol	B12-My24129	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B12-My24129	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B12-My24129	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B12-My24129	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B12-My24129	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Lead	B12-My24129	CP	mg/kg	< 5	< 5	83	30%	Fail	Q15

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.
N03	The method has been audited and technically assessed by NATA. NATA accreditation is pending.
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.
Q15	The RPD reported passes mgt-LabMark's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

5.73 Irrelevant information

National Technical 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

mgt-LabMark shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall mgt-LabMark be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

ERM
Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Attention: **is 73 irrelevant**

Report **339188-W**
Client Reference **STAGE II INVESTIGATION KURABY 0154511/21**
Received Date **May 31, 2012**



Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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.

Client Sample ID			QA03	QA04
Sample Matrix			Water	Water
mgt-LabMark Sample No.			B12-My24133	B12-My24134
Date Sampled			May 30, 2012	May 30, 2012
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.050	mg/L	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Total m+p-Xylenes	0.002	mg/L	< 0.002	< 0.002
Xylenes(ortho.meta and para)	0.003	mg/L	< 0.003	< 0.003
Fluorobenzene (surr.)	1	%	86	81
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				
Naphthalene ^{N02}	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N03}	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *	Brisbane	May 31, 2012	7 Day
- Method: LM-LTM-ORG2010			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	May 31, 2012	7 Day
- Method: TRH C6-C36 - MGT 100A			
BTEX	Brisbane	May 31, 2012	14 Day
- Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons			

Published on DESI Disclosure Log
RTI Act 2009

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Order No.: 339188
Report #: (07) 3839 8393
Phone:
Fax:

Received: May 31, 2012 12:00 PM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

Client Job No.: STAGE II INVESTIGATION KURABY
0154511/21

mgt-LabMark Client Manager: [REDACTED]

Sample Detail

Laboratory where analysis is conducted					External Laboratory				
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	% Moisture	Lead	BTEX	Polycyclic Aromatic Hydrocarbons	Particle Size by Sieve analysis*
Melbourne Laboratory - NATA Site # 1254 & 14271									X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794					X	X	X	X	
SB1_0.3	May 28, 2012		Soil	B12-My24109	X	X	X	X	
SB1_1.5	May 29, 2012		Soil	B12-My24110	X	X	X	X	
SB1_3.0	May 29, 2012		Soil	B12-My24111	X	X	X	X	
SB2_0.2	May 30, 2012		Soil	B12-My24112	X	X	X	X	
SB2_0.5	May 30, 2012		Soil	B12-My24113	X	X	X	X	
SB2_2.0	May 30, 2012		Soil	B12-My24114	X	X	X	X	
SB2_4.0	May 30, 2012		Soil	B12-My24115	X	X	X	X	
SB2_6.0	May 30, 2012		Soil	B12-My24116	X	X	X	X	
MW1_0.2	May 29, 2012		Soil	B12-My24117	X	X	X	X	
Total Recoverable Hydrocarbons									X
Phenols (IWRG 621)									X

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Client Job No.: STAGE II INVESTIGATION KURABY
0154511/21

Order No.: 339188
Report #: (07) 3839 8393
Phone:
Fax:

Received: May 31, 2012 12:00 PM
Due: Jun 1, 2012 4:00 PM
Priority: 1 Day
Contact name:

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted			Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271					X				
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
MW1_0.5	May 29, 2012	Soil	B12-My24118	X	X	X	X	X	X
MW1_2.0	May 29, 2012	Soil	B12-My24119	X	X	X	X	X	X
MW1_5.5	May 29, 2012	Soil	B12-My24120	X	X	X	X	X	X
MW1_6.5	May 29, 2012	Soil	B12-My24121	X	X	X	X	X	X
MW1_8.0	May 29, 2012	Soil	B12-My24122	X	X	X	X	X	X
MW2_0.2	May 30, 2012	Soil	B12-My24123	X	X	X	X	X	X
MW2_0.5	May 30, 2012	Soil	B12-My24124	X	X	X	X	X	X
MW2_4.5	May 30, 2012	Soil	B12-My24125	X	X	X	X	X	X
MW2_6.5	May 30, 2012	Soil	B12-My24126	X	X	X	X	X	X
MW3_0.2	May 30, 2012	Soil	B12-My24127	X	X	X	X	X	X

Company Name:
Address:

ERM Queensland
Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Order No.:

Report #: 339188
Phone: (07) 3839 8393
Fax:

Received:

May 31, 2012 12:00 PM

Due:

Jun 1, 2012 4:00 PM

Priority:

1 Day

Contact name:

Client Job No.:

STAGE II INVESTIGATION KURABY
0154511/21

mgt-LabMark Client Manager:

Sample Detail

Laboratory where analysis is conducted				Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Particle Size by Sieve analysis*	Polycyclic Aromatic Hydrocarbons	BTEX	Lead	% Moisture
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794					X		X	X	X	X
External Laboratory										
MW3_1.0	May 30, 2012	Soil	B12-My24128	X	X		X	X	X	X
MW3_3.5	May 30, 2012	Soil	B12-My24129	X	X		X	X	X	X
MW3_6.5	May 30, 2012	Soil	B12-My24130	X	X		X	X	X	X
QA01	May 29, 2012	Soil	B12-My24131	X	X		X	X	X	X
QA02	May 29, 2012	Soil	B12-My24132	X	X		X	X	X	X
QA03	May 30, 2012	Water	B12-My24133					X		X
QA04	May 30, 2012	Water	B12-My24134					X		X

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 an RPD

UNITS

mg/kg: milligrams per Kilogram

µg/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: Nephelometric Turbidity 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 client's batch of samples but run within the laboratory batch of analysis.
Batch SPIKE:	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA:	U.S 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 was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

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 below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	mg/L	< 0.02		0.02	Pass	
TRH C10-C14	mg/L	< 0.05		0.050	Pass	
TRH C15-C28	mg/L	< 0.1		0.1	Pass	
TRH C29-C36	mg/L	< 0.1		0.1	Pass	
Method Blank						
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	mg/L	< 0.001		0.001	Pass	
Toluene	mg/L	< 0.001		0.001	Pass	
Ethylbenzene	mg/L	< 0.001		0.001	Pass	
o-Xylene	mg/L	< 0.001		0.001	Pass	
Total m+p-Xylenes	mg/L	< 0.002		0.002	Pass	
Xylenes(ortho.meta and para)	mg/L	< 0.003		0.003	Pass	
Method Blank						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
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 C6-C10 less BTEX (F1)x	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	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	%	73		70-130	Pass	
TRH C10-C14	%	100		70-130	Pass	
LCS - % Recovery						
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	%	94		70-130	Pass	
Toluene	%	94		70-130	Pass	
Ethylbenzene	%	94		70-130	Pass	
Total m+p-Xylenes	%	95		70-130	Pass	
Xylenes(ortho.meta and para)	%	95		70-130	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
TRH C6-C10	%	81		70-130	Pass	
TRH >C10-C16	%	104		70-130	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 QA/QC acceptance criteria, and are entirely technically valid.
N03	The method has been audited and technically assessed by NATA. NATA accreditation is pending.
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.

s.73 irrelevant information

National Technical 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

mgt-LabMark shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall mgt-LabMark be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Sample Receipt Advice

Company name: ERM Queensland
Contact name: **s.73 Irrelevant in**
Client job number: FREEDOM SITE INVESTIGATION KURABY 0154511
COC number: 07326
Turn around time: 1 Day
Date/Time received: Jun 1, 2012 10:00 AM
MGT lab reference: 339351

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 mgt-LabMark Sample Receipt : 5.5 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:

s.73 Irrelevant on Phone : +61 3 9564 7055 or by e.mail: **s.73 Irrelevant**@mgtlabmark.com.au

Results will be delivered electronically via e.mail to **s.73 Irrelevant information**@erm.com.

mgt Sample Receipt

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Client Job No.: FREEDOM SITE INVESTIGATION KURABY
0154511

Order No.: 339351
Report #: (07) 3839 8393
Phone:
Fax:

Received: Jun 1, 2012 12:00 AM
Due: Jun 8, 2012 4:00 PM
Priority: 5 Day
Contact name:

mgt-LabMark Client Manager

Sample Detail

Laboratory where analysis is conducted					Total Recoverable Hydrocarbons	Phenols (IWRG 621)	Polycyclic Aromatic Hydrocarbons	BTEX	TRH C6-C9	Methyl-tert-Butyl Ether	Lead (filtered)
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
External Laboratory											
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
MW01	May 31, 2012		Water	B12-Jn00353				X		X	X
MW02	May 31, 2012		Water	B12-Jn00354				X		X	X
MW03	May 31, 2012		Water	B12-Jn00355				X		X	X
D01	May 31, 2012		Water	B12-Jn00356				X		X	X
R01	May 31, 2012		Water	B12-Jn00357				X		X	X
TB01	May 31, 2012		Water	B12-Jn00358					X		



ERM
Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Attention **s.73 irrelevant**

Report **339351-W**
Client Reference **FREEDOM SITE INVESTIGATION KURABY 0154511**
Received Date **Jun 01, 2012**



Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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.

Client Sample ID			MW01	MW02	MW03	D01
Sample Matrix			Water	Water	Water	Water
mgt-LabMark Sample No.			B12-Jn00353	B12-Jn00354	B12-Jn00355	B12-Jn00356
Date Sampled			May 31, 2012	May 31, 2012	May 31, 2012	May 31, 2012
Test/Reference	LOR	Unit				
Methyl-tert-Butyl Ether	0.001	mg/L	0.027	0.30	0.29	0.26
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	1.1	68	9.7	6.6
TRH C10-C14	0.050	mg/L	8.8	9.9	3.4	4.0
TRH C15-C28	0.1	mg/L	1.0	1.2	0.7	0.5
TRH C29-C36	0.1	mg/L	0.1	0.2	0.3	0.1
TRH C10-36 (Total)	0.1	mg/L	9.9	11	4.4	4.6
BTEX						
Benzene	0.001	mg/L	0.043	40	1.9	1.7
Toluene	0.001	mg/L	0.029	9.4	0.021	0.017
Ethylbenzene	0.001	mg/L	0.094	1.0	0.70	0.53
o-Xylene	0.001	mg/L	0.084	1.6	0.012	0.010
Total m+p-Xylenes	0.002	mg/L	0.35	5.7	2.2	1.7
Xylenes(ortho,meta and para)	0.003	mg/L	0.41	7.4	2.2	1.7
Fluorobenzene (surr.)	1	%	101	102	94	95
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.02	mg/L	1.1	< 0.2	0.16	0.16
TRH C6-C10	0.02	mg/L	2.0	73	11	6.6
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	1.5	15	6.2	2.6
TRH C6-C10 less BTEX (F1)x ^{N03}	0.02	mg/L	1.5	15	6.2	2.6
TRH >C10-C16	0.05	mg/L	7.9	5.1	1.8	2.0
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	6.8	5.1	1.6	1.8
TRH >C16-C34	0.1	mg/L	0.4	0.9	0.7	0.4
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	0.007	0.005
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW01	MW02	MW03	D01
Sample Matrix			Water	Water	Water	Water
mgt-LabMark Sample No.			B12-Jn00353	B12-Jn00354	B12-Jn00355	B12-Jn00356
Date Sampled			May 31, 2012	May 31, 2012	May 31, 2012	May 31, 2012
Test/Reference	LOR	Unit				
Fluorene	0.001	mg/L	< 0.001	< 0.001	0.003	0.002
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	0.42	0.12	0.080	0.077
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH	0.001	mg/L	0.42	0.12	0.090	0.084
p-Terphenyl-d14 (surr.)	1	%	73	97	99	96
2-Fluorobiphenyl (surr.)	1	%	64	94	92	90
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2,4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2,4,5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2,4-Dimethylphenol	0.001	mg/L	< 0.001	0.038	0.029	0.039
2,4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	0.19	< 0.006	< 0.006
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.010
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	0.005	0.006
Total Non-Halogenated Phenol	0.1	mg/L	< 0.1	0.2	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	21	21	32	33
Heavy Metals (filtered)						
Lead (filtered)	0.001	mg/L	< 0.001	0.002	0.003	0.003



Client Sample ID			R01	TB01
Sample Matrix			Water	Water
mgt-LabMark Sample No.			B12-Jn00357	B12-Jn00358
Date Sampled			May 31, 2012	May 31, 2012
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.050	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	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Total m+p-Xylenes	0.002	mg/L	< 0.002	< 0.002
Xylenes(ortho,meta and para)	0.003	mg/L	< 0.003	< 0.003
Fluorobenzene (surr.)	1	%	77	82
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				
Naphthalene ^{N02}	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	-
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	-
TRH C6-C10 less BTEX (F1) ^{N03}	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	-
Benzo(b)fluoranthene	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	-
p-Terphenyl-d14 (surr.)	1	%	93	-
2-Fluorobiphenyl (surr.)	1	%	88	-
Phenols (Halogenated)				
2-Chlorophenol	0.003	mg/L	< 0.003	-
2,4-Dichlorophenol	0.001	mg/L	< 0.001	-
2,4,5-Trichlorophenol	0.001	mg/L	< 0.001	-
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	-
2,6-Dichlorophenol	0.003	mg/L	< 0.003	-



ENVIRONMENTAL LABORATORIES

Client Sample ID			R01	TB01
Sample Matrix			Water	Water
mgt-LabMark Sample No.			B12-Jn00357	B12-Jn00358
Date Sampled			May 31, 2012	May 31, 2012
Test/Reference	LOR	Unit		
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-
Pentachlorophenol	0.01	mg/L	< 0.01	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-
Total Halogenated Phenol	0.01	mg/L	< 0.01	-
Phenols (non-Halogenated)				
2-Cyclohexyl-4,6-dinitrophenol	0.1	mg/L	< 0.1	-
2-Methyl-4,6-dinitrophenol	0.005	mg/L	< 0.005	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	-
2-Nitrophenol	0.005	mg/L	< 0.005	-
2,4-Dimethylphenol	0.001	mg/L	< 0.001	-
2,4-Dinitrophenol	0.001	mg/L	< 0.001	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	-
4-Nitrophenol	0.001	mg/L	< 0.001	-
Dinoseb	0.1	mg/L	< 0.1	-
Phenol	0.003	mg/L	< 0.003	-
Total Non-Halogenated Phenol	0.1	mg/L	< 0.1	-
Phenol-d6 (surr.)	1	%	32	-



Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
Methyl-tert-Butyl Ether - Method: USEPA 8260 MGT 350A Volatile Organics by GCMS	Brisbane	Jun 01, 2012	14 Day
BTEX - Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons	Brisbane	Jun 04, 2012	14 Day
Polycyclic Aromatic Hydrocarbons - Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons	Brisbane	Jun 04, 2012	7 Day
Heavy Metals (filtered) - Method: USEPA 6020 Heavy Metals	Brisbane	Jun 01, 2012	180 Day
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Brisbane	Jun 04, 2012	7 Day
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - MGT 100A	Brisbane	Jun 04, 2012	7 Day
Phenols (IWRG 621)			
Phenols (Halogenated) - Method: USEPA 8270 Phenols	Brisbane	Jun 04, 2012	7 Day
Phenols (non-Halogenated) - Method: USEPA 8270 Phenols	Brisbane	Jun 04, 2012	7 Day

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RTI Act 2009

Company Name: ERM Queensland
Address: Level 1, 60 Leichhardt street
Spring Hill
QLD 4004

Order No.: 339351
Report #:
Phone: (07) 3839 8393
Fax:

Received: Jun 1, 2012 10:00 AM
Due: Jun 4, 2012 4:00 PM
Priority: 1 Day
Contact name:

Client Job No.: FREEDOM SITE INVESTIGATION KURABY
0154511

mgt-LabMark Client Manager

Sample Detail

Laboratory where analysis is conducted				External Laboratory			
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Lead (filtered)	Methyl-tert-Butyl Ether	TRH C6-C9
MW01	May 31, 2012		Water	B12-Jn00353	X	X	X
MW02	May 31, 2012		Water	B12-Jn00354	X	X	X
MW03	May 31, 2012		Water	B12-Jn00355	X	X	X
D01	May 31, 2012		Water	B12-Jn00356	X	X	X
R01	May 31, 2012		Water	B12-Jn00357			X
TB01	May 31, 2012		Water	B12-Jn00358			X
Total Recoverable Hydrocarbons							X
Phenols (IWRG 621)							X
Polycyclic Aromatic Hydrocarbons							X
BTEX							X
Methyl-tert-Butyl Ether							X
Lead (filtered)							X

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 an RPD

UNITS

mg/kg: milligrams per Kilogram

µg/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: Nephelometric Turbidity 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 client's batch of samples but run within the laboratory batch of analysis.
Batch SPIKE:	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA:	U.S 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 was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

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 below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Methyl-tert-Butyl Ether	mg/L	< 0.001		0.001	Pass	
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	mg/L	< 0.02		0.02	Pass	
TRH C10-C14	mg/L	< 0.05		0.050	Pass	
TRH C15-C28	mg/L	< 0.1		0.1	Pass	
TRH C29-C36	mg/L	< 0.1		0.1	Pass	
Method Blank						
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	mg/L	< 0.001		0.001	Pass	
Toluene	mg/L	< 0.001		0.001	Pass	
Ethylbenzene	mg/L	< 0.001		0.001	Pass	
o-Xylene	mg/L	< 0.001		0.001	Pass	
Total m+p-Xylenes	mg/L	< 0.002		0.002	Pass	
Xylenes(ortho,meta and para)	mg/L	< 0.003		0.003	Pass	
Method Blank						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
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 C6-C10 less BTEX (F1)x	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 USEPA 8270 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)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						
Phenols (Halogenated) USEPA 8270 Phenols						
2-Chlorophenol	mg/L	< 0.003		0.003	Pass	
2,4-Dichlorophenol	mg/L	< 0.001		0.001	Pass	
2,4,5-Trichlorophenol	mg/L	< 0.001		0.001	Pass	
2,4,6-Trichlorophenol	mg/L	< 0.01		0.01	Pass	
2,6-Dichlorophenol	mg/L	< 0.003		0.003	Pass	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
4-Chloro-3-methylphenol	mg/L	< 0.01		0.01	Pass	
Pentachlorophenol	mg/L	< 0.01		0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03		0.03	Pass	
Method Blank						
Phenols (non-Halogenated) USEPA 8270 Phenols						
2-Cyclohexyl-4,6-dinitrophenol	mg/L	< 0.1		0.1	Pass	
2-Methyl-4,6-dinitrophenol	mg/L	< 0.005		0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003		0.003	Pass	
2-Nitrophenol	mg/L	< 0.005		0.005	Pass	
2,4-Dimethylphenol	mg/L	< 0.001		0.001	Pass	
2,4-Dinitrophenol	mg/L	< 0.001		0.001	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006		0.006	Pass	
4-Nitrophenol	mg/L	< 0.001		0.001	Pass	
Dinoseb	mg/L	< 0.1		0.1	Pass	
Phenol	mg/L	< 0.003		0.003	Pass	
LCS - % Recovery						
Methyl-tert-Butyl Ether	%	99		75-125	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	%	92		70-130	Pass	
TRH C10-C14	%	102		70-130	Pass	
LCS - % Recovery						
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons						
Benzene	%	95		70-130	Pass	
Toluene	%	97		70-130	Pass	
Ethylbenzene	%	95		70-130	Pass	
Total m+p-Xylenes	%	96		70-130	Pass	
Xylenes(ortho.meta and para)	%	96		70-130	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
TRH C6-C10	%	108		70-130	Pass	
TRH >C10-C16	%	108		70-130	Pass	
LCS - % Recovery						
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	93		70-130	Pass	
Acenaphthylene	%	94		70-130	Pass	
Anthracene	%	94		70-130	Pass	
Benz(a)anthracene	%	96		70-130	Pass	
Benzo(a)pyrene	%	88		70-130	Pass	
Benzo(b)fluoranthene	%	94		70-130	Pass	
Benzo(g,h,i)perylene	%	96		70-130	Pass	
Benzo(k)fluoranthene	%	107		70-130	Pass	
Chrysene	%	96		70-130	Pass	
Dibenz(a,h)anthracene	%	102		70-130	Pass	
Fluoranthene	%	96		70-130	Pass	
Fluorene	%	95		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	101		70-130	Pass	
Naphthalene	%	89		70-130	Pass	
Phenanthrene	%	96		70-130	Pass	
Pyrene	%	96		70-130	Pass	
LCS - % Recovery						

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Phenols (Halogenated) USEPA 8270 Phenols					
2-Chlorophenol	%	92	30-130	Pass	
2,4-Dichlorophenol	%	103	30-130	Pass	
2,4,5-Trichlorophenol	%	109	30-130	Pass	
2,4,6-Trichlorophenol	%	106	30-130	Pass	
2,6-Dichlorophenol	%	102	30-130	Pass	
4-Chloro-3-methylphenol	%	99	30-130	Pass	
Pentachlorophenol	%	107	30-130	Pass	
Tetrachlorophenols - Total	%	101	30-130	Pass	
LCS - % Recovery					
Phenols (non-Halogenated) USEPA 8270 Phenols					
2-Cyclohexyl-4,6-dinitrophenol	%	109	30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	109	30-130	Pass	
2-Methylphenol (o-Cresol)	%	83	30-130	Pass	
2-Nitrophenol	%	99	30-130	Pass	
2,4-Dimethylphenol	%	100	30-130	Pass	
2,4-Dinitrophenol	%	113	30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	75	30-130	Pass	
4-Nitrophenol	%	31	30-130	Pass	
Dinoseb	%	109	30-130	Pass	
Phenol	%	38	30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals (filtered)				Result 1					
Lead (filtered)	B12-Jn00354	CP	%	95			75-125	Pass	
Duplicate									
Heavy Metals (filtered)				Result 1	Result 2	RPD			
Lead (filtered)	B12-Jn00354	CP	mg/L	0.002	0.002	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	B12-Jn00356	CP	mg/L	4.0	3.5	13	30%	Pass	
TRH C15-C28	B12-Jn00356	CP	mg/L	0.5	0.5	6.0	30%	Pass	
TRH C29-C36	B12-Jn00356	CP	mg/L	0.1	0.1	9.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
TRH >C10-C16	B12-Jn00356	CP	mg/L	2.0	1.8	12	30%	Pass	
TRH >C16-C34	B12-Jn00356	CP	mg/L	0.4	0.4	<1	30%	Pass	
TRH >C34-C40	B12-Jn00356	CP	mg/L	< 0.1	< 0.1	18	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B12-Jn00356	CP	mg/L	0.005	0.005	8.0	30%	Pass	
Acenaphthylene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b)fluoranthene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B12-Jn00356	CP	mg/L	0.002	0.002	6.0	30%	Pass	
Indeno(1,2,3-cd)pyrene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	B12-Jn00356	CP	mg/L	0.077	0.074	5.0	30%	Pass	
Phenanthrene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B12-Jn00356	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2,4-Dichlorophenol	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2,4,5-Trichlorophenol	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2,4,6-Trichlorophenol	B12-Jn00356	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2,6-Dichlorophenol	B12-Jn00356	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	B12-Jn00356	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	B12-Jn00356	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	B12-Jn00356	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4,6-dinitrophenol	B12-Jn00356	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4,6-dinitrophenol	B12-Jn00356	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B12-Jn00356	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	B12-Jn00356	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2,4-Dimethylphenol	B12-Jn00356	CP	mg/L	0.039	0.036	9.0	30%	Pass	
2,4-Dinitrophenol	B12-Jn00356	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B12-Jn00356	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	B12-Jn00356	CP	mg/L	0.010	0.009	9.0	30%	Pass	
Dinoseb	B12-Jn00356	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	B12-Jn00356	CP	mg/L	0.006	0.006	7.0	30%	Pass	

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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 Holding Time	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.
N03	The method has been audited and technically assessed by NATA. NATA accreditation is pending.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C8-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C8-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

s.73 Irrelevant information

National Technical 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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Environmental Protection Act 1994
Transitional Environmental Program for

Freedom Fuels Australia

Kuraby Service Station

1319 Beenleigh Road, Kuraby, Queensland, Australia

Lots 5 - 8 on RP37307

Date First Issued:

27 March 2013

Revision Date

N/A

Prepared for:

Brisbane City Council (BCC)

GPO Box 1434

Brisbane Qld 4001

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TRANSITIONAL ENVIRONMENTAL PROGRAM

Kuraby Service Station



1 BACKGROUND

Freedom Fuels Australia (FFA) which is the registered operator and Environmental Authority holder of the Kuraby Service Station (Site) at 16 Kremzow Road, Brendale, Queensland, Australia hereby submits this Voluntary Transitional Environmental Program (TEP) to address environmental issues identified during preliminary environmental investigations undertaken during 2012, as notified to Department of Environment and Heritage Protection (EHP) in compliance with Section 333 of the *Environmental Protection Act 1994*.

The preliminary environmental investigation identified exceedences of CRC CARE human health (commercial / industrial) vapour screening levels in groundwater for total recoverable hydrocarbons (TRH) C₆-C₁₀ and benzene. ANZECC fresh water ecological screening levels for groundwater were exceeded for benzene, xylene and naphthalene.

As the Site is operational and licensed through Brisbane City Council (BCC), this TEP is to be submitted directly to BCC as the administering authority.

This TEP addresses the ongoing environmental investigation into hydrocarbon contamination identified in groundwater at the Site. This TEP has been prepared with the aim of identifying the potential environmental and human health risks associated with FFA's ongoing operation of the Site and to assess impact to off-site receptors.

This TEP is intended to be a dynamic document to be updated to reflect achieved tasks and additional tasks that become necessary, as new information becomes available.

2 STATEMENT OF OBJECTIVES

The objective of this TEP is to ensure that potential environmental impacts are adequately managed, thus meeting the requirements of the *Environmental Protection Act 1994*. Specifically, this TEP aims to further investigate and manage impacts to groundwater.

The TEP aims to provide a mechanism to monitor and report on the progress of the overall objectives. As stated above, the TEP is intended to be an amendable document which will be updated to reflect changes in strategy based on results of future investigations.

The TEP details the actions proposed to manage and mitigate any impact, and to mitigate the risk to a level that is appropriate for the Site's ongoing use as a service station.

3 METHOD OF ACHIEVING OBJECTIVES

The following *Table 1* shows actions that will be implemented by FFA to meet the TEP's objectives, in accordance with the scheduled timeframes stated.

If FFA reasonably believe they are unlikely to meet a Target Date because of any event (or combination of events) which is beyond their reasonable control (Delay Event), FFA must give written notice of that fact to BCC including:

- Full particulars of the Delay Event; and
- A reasonable estimate of the revised Target Date and its effect on the balance of the timeframe. The amended timeframe will take into account the steps to be completed to deal with the Delay Event.

If FFA is affected by a Delay Event, the Target Date will be altered to the revised Target Date set out in the notice and the scheduled dates for this TEP will be amended to take the revised Target Date into account.

FFA must give the notice of the Delay Event not more than five (5) business days after FFA becomes reasonably aware that it may affect the achievement of the Target Date, or such later date as approved by BCC. Where the Delay Event involves a combination of events, the relevant period is to be determined by reference to the occurrence of the last of those events.

Where it is necessary to alter the work described in this TEP FFA must inform BCC as soon as reasonably practicable. Alterations may be required as a result of:

- Completed investigations;
- To meet the requirements of another government agency; or
- In the event of circumstances or delays which are beyond FFA's reasonable control.

Following approval of the amendment by BCC, the agreed alterations will be made to the TEP, ensuring that alterations of the TEP are consistent with the achievement of the objectives previously stated.

Table 1: TEP Objectives and Target Dates for Achievement of Objectives

Objective	No.	How Objective Is to Be Achieved	Performance Indicator	Target Date	Status
1. Environmental Site Assessment					
Preliminary Site Investigation	1.1	<ul style="list-style-type: none"> Undertake environmental investigations to establish the condition of soil and groundwater. 	Completion of Fieldwork	May 2012	Complete
		<ul style="list-style-type: none"> Submission of report to BCC (attached to this submission). 	Provision of report to BCC	March 2013	Complete
Further assessment of environmental impacts (soil and groundwater)	1.2	<ul style="list-style-type: none"> Undertake additional environmental investigations to determine the extent of groundwater impact (on-site and potentially off-site). 	Completion of Fieldwork	Q2 2013	
		<ul style="list-style-type: none"> Submission of report to BCC. 	Provision of report to BCC	Q3 2013	

Objective	No.	How Objective Is to Be Achieved	Performance Indicator	Target Date	Status
2. Infrastructure Assessment/Maintenance					
Assess integrity of on-site infrastructure.	2.1	<ul style="list-style-type: none"> Inspect all on-site petroleum related infrastructures including underground storage tanks and associated lines. 	Completion of work	Q3 2013	
			Provision of equipment integrity report to BCC	Q4 2013	
Ensure infrastructure meets current standards.	2.2	<ul style="list-style-type: none"> Replace or repair any petroleum related infrastructure which was found to fail integrity testing. Re-test infrastructure to ensure integrity is sound. 	Completion of work	Q1 2014	
			Completion of work	Q2 2014	
			Provision of equipment integrity report to BCC	Q3 2014	

Objective	No.	How Objective Is to Be Achieved	Performance Indicator	Target Date	Status
3. Monitoring					
Groundwater Monitoring	3.1	<ul style="list-style-type: none"> Undertake two bi-annual groundwater monitoring events to confirm groundwater conditions. 	Completion of Fieldwork	Q2 and Q4 2013	
		<ul style="list-style-type: none"> Submission of annual GME report to BCC. 	Provision of report to BCC	Q1 2014	

Notes:

Q1: Quarter 1 – Jan-March

Q2: Quarter 2 – April-June

Q3: Quarter 3 – July-Sep

Q4: Quarter 4 – Oct-Dec

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4 MONITORING AND REPORTING REQUIREMENTS

4.1 MONITORING

A proposed groundwater monitoring programme is outlined in *Table 1*. Following completion of the 2014 Groundwater Monitoring Events (GMEs), the data will be reviewed and the TEP amended, if necessary, to reflect the additional data considered.

4.2 REPORTING

Investigation and monitoring reports referred to in *Table 1* will be prepared for FFA by FFA's environmental consultants and contractors. These reports will be provided to BCC when completed.

In reporting on the compliance with the TEP, FFA will, amongst other matters, report on compliance against measurable key performance indicators as specified in *Table 1*.

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