

27 April 2011

Mr Lance Knight
LM & LM Knight Pty Ltd
49 Mologa Road
HEIDELBERG WEST VIC 3081

Dear Lance

**RE: Cut and Clean - Heidelberg West
Slurry Waste and Filtered Waste Water Sampling**

Lance Knight Pty Ltd has engaged Monarc Environmental Pty Ltd ('Monarc') to collect and test a slurry and water sample for LM & LM Knight Pty Ltd (trading as Cut and Clean) at 49 Mologa Road, Heidelberg West. This letter report provides results of the slurry-soil and filtered waste water ("filtrate") sampling that was undertaken on 7 March 2011.

BACKGROUND

This letter has been prepared in conjunction with the Monarc letter report titled '*Slurry and Water sampling from Cut and Clean, Heidelberg West*', dated 9 March 2010, which includes an expanded discussion of the background information.

SCOPE OF WORKS

Concrete cutting produces a slurry by-product which has the potential to be re-used. Monarc has undertaken the following tasks to determine the presence of contaminants in the waste water.

- Visual and olfactory observation of both the slurry and the filtered waste water filtrate; and
- Sampling of slurry and filtrate for EPA Screens (in accordance with Table 2 of *EPA Publication IWRG 621 Soil Hazard Categorisation and Management* (July 2009)).

METHODOLOGY

Slurry and filtrate samples were taken on 7 March 2011 by an appropriately qualified environmental scientist. A sample (identified as LMK-1) was collected of the slurry mixture before the filtration process and another sample (LMK-2) was collected from the filtered waste water after the filtration process.

The slurry was collected from a large tank "slurry drum" and the filtrate was collected from an iso-tank at the Cut and Clean Depot. The details on the source/sources of the respective slurry and filtrate stocks and their residence times within the tanks were unknown but should be identified prior to collection in the future.

Both hand grab samples were assessed at time of collection and ranked based on evidence of odour and visual contamination. The slurry sample (LMK-1) was dark grey with very high turbidity and produced a slight petroleum odour. The filtered waste water sample (LMK-2) was generally clear with a slightly yellow tinge, low turbidity and no odour.

The primary laboratory used for the chemical analyses of both the slurry and the filtrate was ALS

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Environmental Pty Ltd. The laboratory is NATA accredited to undertake the requested analyses. Analytical results for the slurry and waste water have been summarised in their respective tables attached, along with the NATA accredited laboratory certificate and chain of custody for both samples.

a) Slurry By-product Results

The slurry was oven dried and analysed by the laboratory as a solid matrix.

The relevant criteria for assessment of the slurry are:

- National Environment Protection Measure (1999) for Commercial/Industrial settings (NEPM F) on the basis that workers routinely handle this slurry mixture in the course of their daily duties.
- Disposal Criteria for Industrial waste criteria *EPA Publication IWRG 631 Solid Industrial Waste Hazard Categorisation and Management*.

The analytical results have been compared with the relevant criteria and form Table 1: Summary of Soil Analysis, Heidelberg West. It was found that:-

- Analytical results for sample LMK-1 were within the relevant primary health investigation levels criteria for Commercial/Industrial (NEPM F) in the National Environment Protection Measure (1999). Although the sample reported analyte levels below commercial/industrial settings, direct dermal contact should be kept to a minimum and the use of protective clothing is recommended in accordance with Victorian *Occupational Health and Safety Act 2004*.
- Analytical results for LMK-1 were within the criteria for Industrial waste in *EPA Publication IWRG 631 Solid Industrial Waste Hazard Categorisation and Management* and therefore the slurry is classified as "Industrial Waste". Accordingly, if it is required that this slurry-soil should be disposed, it must be treated as Industrial Waste.

b) Filtered Waste Water Results

Results for the filtrate sample (LMK-2) were compared to the criteria set by the: -

1. *Australian and New Zealand Environment and Conservation Council (ANZECC) 1992/2000*, for:
 - primary contact recreation,
 - ecosystem protection (freshwater)
2. *City West Water Standards for trade waste discharge to the Sewerage System*.

Analytical results have been compared with relevant criteria and are included in *Table 2: Summary of Filtered Waste Water Analyses, Heidelberg West*. A review of results has noted the following:

- Various analytes were detected in the sample including xylenes, copper, mercury, molybdenum, zinc metals, fluoride, PAH/Phenols and TPHs.
- *Ecosystem Protection (Freshwater)*
 - Concentrations for copper, mercury, molybdenum and zinc metals exceeded the criteria for *Ecosystem Protection (Freshwater)*.
- *Primary Contact Recreation*
 - Concentrations for mercury and molybdenum metals exceeded the criteria for *Primary Contact Recreation*.
- *Standard for Trade Waste - City Waste Water*
 - Concentrations of all analytes tested were within the criteria for *City Waste Water - Standard for Trade Waste Discharge to the Sewerage System*.

This is the second of two sampling events over an approximate 12 month period, and any further comment on trends is beyond the scope of this “collect and test” exercise.

The scope of this round of testing was primarily to collect and analyse the samples for the contaminants listed in the IWRG 621 Screen (in accordance with Table 2 of EPA Publication IWRG621).

SUMMARY

1. The slurry-soil sample (LMK-1) was within the NEPM criteria for *Commercial/Industrial* sites however should the slurry-soil mixture require off-site disposal, it should be treated as **Industrial Waste**.
2. The filtered waste water sample (LMK-2) exceeded the criteria for Ecosystem Protection (Freshwater) for copper, mercury, molybdenum and zinc metals. It is recommended that no slurry run-off be permitted to enter into environmental receptors such as storm water drains, pastoral drainage lines, creeks or any other surface water bodies.
3. The filtered waste water sample (LMK-2) exceeded the criteria for Primary Contact Recreation for mercury and molybdenum metals. It is also recommended that appropriate personal protective clothing (gloves, safety glasses, long sleeved shirt and pants) be worn to minimise contact with the slurry and waste water.
4. The filtered waste water sample (LMK-2) was within the criteria for the City West Water - Standard for Trade Waste.

RECOMMENDATIONS

Recommendations for the next round of sampling include:

- Review of sampling methodology is recommended relating to sample history, sample collection techniques, sample numbers, timing & frequency and their representativeness for both slurry-soil and filtrate.
- Clarification with the client of the filtration process, task objectives and therefore task scope will enable Monarc to develop an appropriate sampling methodology and the relevant criteria against which to assess results.
- Preparation of an Environmental Management Plan (EMP) for Cut and Clean processes.

For further discussion or additional information please do not hesitate to call me directly on (03) 8809 1850.

Yours sincerely



Srijeeta De
Environmental Consultant
MONARC ENVIRONMENTAL PTY LTD

ATTACHMENTS

Table 1: Summary of Soil Analyses, Heidelberg West

Table 2: Summary of Filtered Waste Water Analyses, Heidelberg West

Appendix A: NATA Certified Laboratory Results

Appendix B: Chain of Custody Documentation

TABLE 1: Summary of Slurry - Soil Analysis

Field_ID	LMK-1
LocCode	LMK-1
Sample_Depth_Range	
Sampled_Date-Time	7/03/2011
Matrix_Description	

Chem_Group	ChemName	Units	EQL	IWRG631 Category B	IWRG631 Category C	IWRG631 Industrial Waste	NEPM 1999 HIL F	Industrial Waste
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.03					<1.23
Halogenated Phenols	2,3,5,6-Tetrachlorophenol	mg/kg	0.03					<1.23
	2,4,5-trichlorophenol	mg/kg	0.05	64000	16000	16000		<1.23
	2,4,6-trichlorophenol	mg/kg	0.05					<1.23
	2,4-dichlorophenol	mg/kg	0.03	3200	800	800		<1.23
	2,6-dichlorophenol	mg/kg	0.03					<1.23
	2,3,4,5 & 2,3,4,6-Tetrachlorophenol	mg/kg	0.05					<2.46
	2-chlorophenol	mg/kg	0.03	4800	1200	1200		<1.23
	Phenols (non-halogenated) IWRG631	mg/kg						<494
	Pentachlorophenol	mg/kg	0.2					<1.2
Herbicides	Dinoseb	mg/kg	5					<98
Inorganics	Cyanide Total	mg/kg	1	5000	1250	1250	2500	<1
	Fluoride	mg/kg	40	40000	10000	10000		190
	Moisture	%	1					13
	pH (Lab)	pH_Units	0.1					11
Lead	Lead	mg/kg	5	6000	1500	1500	1500	15
Metals	Arsenic	mg/kg	5	2000	500	500	500	<5
	Cadmium	mg/kg	1	400	100	100	100	<1
	Chromium (hexavalent)	mg/kg	0.5	2000	500	500	500	<0.5
	Copper	mg/kg	5	20000	5000	5000	5000	177
	Mercury	mg/kg	0.1	300	75	75	75	0.1
	Molybdenum	mg/kg	2	4000	1000	1000		<2
	Nickel	mg/kg	2	12000	3000	3000	3000	133
	Selenium	mg/kg	5	200	50	50		<5
	Silver	mg/kg	2	720	180	180		<2
	Tin	mg/kg	5					15
	Zinc	mg/kg	5	140000	35000	35000	35000	76
Organochlorine Pesticides	4,4-DDE	mg/kg	0.05					<1.23
	a-BHC	mg/kg	0.03					<1.23
	Aldrin	mg/kg	0.03					<1.23
	Aldrin + Dieldrin	mg/kg	0.03				50	<1.23
	b-BHC	mg/kg	0.03					<1.23
	chlordan	mg/kg	0.03				250	<1.23
	Chlordane (cis)	mg/kg	0.03					<1.23
	Chlordane (trans)	mg/kg	0.03					<1.23
	d-BHC	mg/kg	0.03					<1.23
	DDD	mg/kg	0.05					<1.23
	DDT	mg/kg	0.05					<1.23
	DDT+DDE+DDD	mg/kg	0.05				1000	<1.23
	Dieldrin	mg/kg	0.03					<1.23
	Endosulfan I	mg/kg	0.03					<1.23
	Endosulfan II	mg/kg	0.03					<1.23
	Endosulfan sulphate	mg/kg	0.03					<1.23
	Endrin	mg/kg	0.03					<1.23
	Endrin aldehyde	mg/kg	0.03					<1.23
	g-BHC (Lindane)	mg/kg	0.03					<1.23
	Heptachlor	mg/kg	0.03				50	<1.23
	Heptachlor epoxide	mg/kg	0.03					<1.23
	Methoxychlor	mg/kg	0.03					<1.23
	Organochlorine pesticides IWRG631	mg/kg						<23.37
	Other organochlorine pesticides IWRG631	mg/kg						<17.22
PAH/Phenols	2,4-dimethylphenol	mg/kg	1					<1
	2,4-dinitrophenol	mg/kg	5					<98
	2-methylphenol	mg/kg	1					<1
	2-nitrophenol	mg/kg	1					<1
	3-&4-methylphenol	mg/kg	1					<2
	4,6-Dinitro-2-methylphenol	mg/kg	5					<98
	4-chloro-3-methylphenol	mg/kg	0.03					<1.23
	4-nitrophenol	mg/kg	5					<98
	Acenaphthene	mg/kg	0.5					<1.2
	Acenaphthylene	mg/kg	0.5					<1.2
	Anthracene	mg/kg	0.5					1.6
	Benz(a)anthracene	mg/kg	0.5					2.8
	Benzo(a) pyrene	mg/kg	0.5	20	5	5	5	3.1
	Benzo(b)&(k)fluoranthene	mg/kg	0.5					5.7
	Benzo(g,h,i)perylene	mg/kg	0.5					2.1
	Chrysene	mg/kg	0.5					2.4
	Dibenz(a,h)anthracene	mg/kg	0.5					<1.2
	Fluoranthene	mg/kg	0.5					7.4
	Fluorene	mg/kg	0.5					<1.2
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5					1.6
	Naphthalene	mg/kg	0.5					<1.2
	Phenanthrene	mg/kg	0.5					5.3
	Phenol	mg/kg	1				42500	<1
	Polycyclic aromatic hydrocarbons IWRG631	mg/kg						36.4
	Pyrene	mg/kg	0.5					7.1
Phenolics	4,6-Dinitro-o-cyclohexyl phenol	mg/kg	5					<98
Polychlorinated Biphenyls	PCBs (Sum of total)	mg/kg	0.1				50	<10
TPH	TPH C10 - C14	mg/kg	50					<50
	TPH C15 - C28	mg/kg	100					400
	TPH C16 - C35 Aliphatic	mg/kg					28000	1160
	TPH C29-C36	mg/kg	100					760
	TPH+C10 - C36 (Sum of total)	mg/kg	50	40000	10000	5000		1160 - 1185

SOIL KEY NOTES



Project Number : LMK-1228

Project Name : Sampling

Sampler(s) : Srijeeta De

Client Company : LM & LM Knight Pty
Ltd

Site : 49 Molonga
Rd, Heidelberg

Dates of Investigation: 7/03/2011

Method of Sampling: DIRECT

ID	Comment
50	Exceeds Human exposure Health Investigation Levels (HILs) for Commercial/Industrial sites in accordance with NEPM Schedule B(1), December 1999
50	Exceeds Vic EPA criteria for Industrial waste - i.e. the sample indicates Contaminated Soil - Category C (Contaminated Soil), (EPA Publication IWRG631)
50	Exceeds Vic EPA criteria for Category C (Contaminated Soil) -i.e.. sample indicates Contaminated Soil - Category B (Contaminated Soil), (EPA Publication IWRG631)
<u>50</u>	Exceeds Vic EPA criteria for Category B (Contaminated Soil) -i.e.. sample indicates Contaminated Soil - Category A (Contaminated Soil), (EPA Publication IWRG631)

General Notes :

A blank space indicates no test performed

primary laboratory: ALS Laboratories Pty Ltd

Database: ESDAT

Non-detected results expressed in **GREY** font

Results greater than laboratory reporting limits expressed in **BLACK** font

TABLE 2: SUMMARY OF WATER ANALYSES

Field_ID	LMK-2
LocCode	LMK-2
Sampled_Date-Time	7/03/2011

Chem_Group	ChemName	Units	EQL	City West Water - Standard for Trade Waste Discharge to the Sewerage System	ANZECC 2000 FW 95%	Primary Contact Recreation (ANZECC 1992)	
1.1 Polyaromatic Hydrocarbons	Acenaphthene	µg/L	1				<1
	Acenaphthylene	µg/L	1				<1
	Anthracene	µg/L	1				<1
	Benzo(a)anthracene	µg/L	1				<1
	Benzo(a) pyrene	µg/L	0.5			0.01	<0.5
	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		16		1.7
	Phenanthrene	µg/L	1				<1
	Pyrene	µg/L	1				<1
1.1 TPH	TPH C6 - C9	µg/L	20	100			<20
	TPH C10 - C14	µg/L	50				640
	TPH C15 - C28	µg/L	100				1540
	TPH C16 - C35 Aliphatic	µg/L					1710
	TPH C29-C36	µg/L	50				170
	TPH+C10 - C36 (Sum of total)	µg/L	50				2350
1.2 BTEX	Benzene	µg/L	1	1	950	10	<1
	Ethylbenzene	µg/L	2	2		300	<2
	Toluene	µg/L	2	2		800	<2
	Xylene (m & p)	µg/L	2	2			3
	Xylene (o)	µg/L	2	2	350		2
	Xylene Total	µg/L				600	5
1.2 MAH	Styrene	µg/L	5			30	<5
1.2 PCB	PCBs (Sum of total)	µg/L	1	2		0.1	<1
1.2 Phenols (halogenated)	2,4,5-trichlorophenol	µg/L	1			1	<1
	2,4,6-trichlorophenol	µg/L	1	50	3	10	<1
	2,4-dichlorophenol	µg/L	1		120	200	<1
	2,6-dichlorophenol	µg/L	1				<1
	2-chlorophenol	µg/L	1		340	300	<1
	4-chloro-3-methylphenol	µg/L	1				<1
	Pentachlorophenol	µg/L	2	5	3.6	10	<2
1.2 Phenols (non-halogenated)	2,4-dimethylphenol	µg/L	1				10.4
	2-methylphenol	µg/L	1				6.6
	2-nitrophenol	µg/L	1				<1
	3- & 4-methylphenol	µg/L	2				4.4
	Phenol	µg/L	1	300	320	2	1.5
1.3 Metals	Arsenic (Filtered)	mg/L	0.001	1		0.05	0.003
	Cadmium (Filtered)	mg/L	0.0001	2	0.0002	0.005	<0.0001
	Chromium (hexavalent) (Filtered)	mg/L	0.01	10	0.001	0.05	<0.01
	Copper (Filtered)	mg/L	0.001	10	0.0014	1	0.039
	Lead (Filtered)	mg/L	0.001	10	0.0034	0.05	<0.001
	Mercury (Filtered)	mg/L	0.0001	1	0.00006	0.001	0.0017
	Molybdenum (Filtered)	mg/L	0.001	10		0.05	0.087
	Nickel (Filtered)	mg/L	0.001	10	0.011	0.1	0.009
	Selenium (Filtered)	mg/L	0.01	10	0.005	0.01	<0.01
	Silver (Filtered)	mg/L	0.001	5	0.00005	0.05	<0.01
	Tin (Filtered)	mg/L	0.001	10			0.005
	Zinc (Filtered)	mg/L	0.005	10	0.008	5	0.011
1.6 Cations/Anions	Fluoride	mg/L	0.1			1.5	0.2
1.7 OCP	4,4-DDE	µg/L	0.5				<0.5
	a-BHC	µg/L	0.5				<0.5
	Aldrin	µg/L	0.5	1		1	<0.5
	Aldrin + Dieldrin	µg/L		6		0.3	<1
	Chlordane (cis)	µg/L	0.5				<0.5
	Chlordane (trans)	µg/L	0.5				<0.5
	d-BHC	µg/L	0.5				<0.5
	DDD	µg/L	0.5				<0.5
	DDT	µg/L	2	1	0.006	3	<2
	DDT+DDE+DDD	µg/L					<3
	Dieldrin	µg/L	0.5			1	<0.5
	Endosulfan I	µg/L	0.5				<0.5
	Endosulfan II	µg/L	0.5				<0.5
	Endosulfan sulphate	µg/L	0.5				<0.5
	Endrin	µg/L	0.5		0.01	1	<0.5
	Endrin aldehyde	µg/L	0.5				<0.5
	Endrin ketone	µg/L	0.5				<0.5
	g-BHC (Lindane)	µg/L	0.5		0.2	10	<0.5
	Heptachlor	µg/L	0.5	3	0.01	3	<0.5
	Heptachlor epoxide	µg/L	0.5			0.3	<0.5
	Hexachlorobenzene	µg/L	0.5				<0.5
	Methoxychlor	µg/L	2			300	<2
1.8 CHC	1,1,1,2-tetrachloroethane	µg/L	5	3			<5
	1,1,1-trichloroethane	µg/L	5	3			<5
	1,1,2-trichloroethane	µg/L	5		6500		<5
	1,1-dichloroethene	µg/L	5	5		0.3	<5
	1,2,4-trichlorobenzene	µg/L	5		85		<5
	1,2-dichlorobenzene	µg/L	5		160	1500	<5
	1,2-dichloroethane	µg/L	5			10	<5
	1,4-dichlorobenzene	µg/L	5		60	40	<5
	Carbon tetrachloride	µg/L	5	1		3	<5
	Chlorobenzene	µg/L	5			300	<5
	cis-1,2-dichloroethene	µg/L	5			60	<5
	Dichloromethane	µg/L	5				<5
	Hexachlorobutadiene	µg/L	5	1		0.7	<5
	Tetrachloroethene	µg/L	5	1		10	<5
	trans-1,2-dichloroethene	µg/L	5				<5
1.8 HVOL	1,1,2,2-tetrachloroethane	µg/L	5	2			<5
	Chloroform	µg/L	5	1		300	<5
	Trichloroethene	µg/L	5	1		30	<5
	Vinyl chloride	µg/L	50	0.5		0.3	<50

Table 2: Summary of Filtered Waste Water, Heidelberg West - Water Key Notes

Maintenance of Ecosystems

Freshwater	95% LOP	1 Primary reference:	ANZECC (2000) Australian Water Quality Guidelines for Fresh and Marine Waters
		2 Secondary reference:	ANZECC (1992) Australian Water Quality Guidelines for Fresh and Marine Waters for:
		PAHs	Total PAHs
		Phenols	Monochlorophenols, Trichlorophenols, Tetrachlorophenols
		Metals	Antimony, Beryllium, Iron, Tributyltin, Thallium
		MAHs	Toluene, Xylene (o + p-xylene)
		PCBs	Total PCBs
		Solvents & Phthalates	Bis(2-ethylhexyl) phthalate
		OCPs & OPPs	Aldrin, DDE, Dieldrin, Methoxychlor, Endosulfan
		HVOLS & CHCs	1,2-dichloroethane, Chlorobenzene, 1,1,2,2-tetrachloroethane, 1,2,3,4-tetrachlorobenzene, 1,2,3,5-Tetrachlorobenzene, 1,2,3-trichlorobenzene, Trichlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,3,5-Trichlorobenzene, Hexachlorobenzene, Hexachlorobutadiene, Pentachlorobenzene, Pentachloroethane
		3 Tertiary reference:	Dutch Intervention Value for 'Mineral Oil' (1999) for:
		TPHs	Total TPHs
		4 Quaternary reference:	SEPP (Waters of Victoria) Waters of Port Phillip Bay (1997) for:
		Nutrients	E.Coli
Notes		1. Anzecc 2000, "low reliability" trigger value was used for chlorobenzene	

Primary Contact Recreation

1 primary reference:	ANZECC (1992) Australian Water Quality Guidelinesfor Fresh and Marine Waters (Drinking Water):
2 secondary reference:	National Water Quality Management Strategy. Australian Drinking Water Guidelines (Health).
Phenols	2 Chloro phenol, 2,4 Dichloro phenol
Metal	Antimony, Chromium (hexavalent), Molybdenum, Barium, Magnesium
MAHS	Toluene, Xylenes (o + p), Ethyl Benzene, Styrene
Other Inorganics	Fluoride
PHthalATES	Bis 2-ethylhexyl phthalate (DEHP)
ORGANOCHLORINE PESTICIDES	Aldrin + Dieldrin, Heptachlor-epoxide, Methoxychlor
HVOLS	Bromodichloromethane, Vinyl chloride, 1,2Dichloro ethene (DCE), 1,2Dichloro ethene (CIS), Chloro benzene, 1,2Dichloro benzene, 1,4Dichloro benzene
CHLORINATED HYDROCARBONS	Hexachloro butadiene, Dichloro benzene, Trichloro benzene
3 Tertiary reference:	WHO (2004) Guidelines for Drinking- Water Quality
HVOLS	Trichloro methane, bromo dichloro methane, 1,2 Dichloro propane (DCP), 1,2Dibromo 3chloro propane, Bromoform
Notes	1. PCR criteria for toxicants (nitrates) are the same as for drinking water, with allowance (by a factor multiple of up to 20) for short duration exposure

Standard for Trade Waste Discharge to the Sewerage System

1 primary reference:	City West Water
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General Notes

- Guidelines expressed as nitrate have been converted to nitrate-N as follows: 1mg/L nitrate-N =4.43mg/L nitrate
- Results expressed as mg/l. A blank space indicates no test performed.
- Primary laboratory ALS Laboratory Group ('ALS')



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EM1102248	Page	: 1 of 10
Client	: MONARC ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: SRIJEETA DE	Contact	: Samantha Smith
Address	: Suite 3, 255 Whitehorse Road Balwyn VIC 3103	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: srijeetad@monarcenviro.com.au	E-mail	: samantha.smith@alsglobal.com
Telephone	: +61 03 8809 1800	Telephone	: +61-3-8549 9644
Facsimile	: +61 03 9836 0801	Facsimile	: +61-3-8549 9601
Project	: LMK1228 SLURRY ANALYSIS	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 07-MAR-2011
C-O-C number	: ----	Issue Date	: 22-MAR-2011
Sampler	: ----	No. of samples received	: 3
Site	: W. HEIDELBERG	No. of samples analysed	: 2
Quote number	: ME/195/10		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics
Raymond Commodore	Senior Metals Instrument Chemist	Melbourne Inorganics

Environmental Division Melbourne
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General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG020F: Silver ICP-MS results when required have been confirmed by ICP-OES and LOR has been raised accordingly.**
- **EG035F: Positive mercury result for EM1102248 # 2 was confirmed by re-preparation and re-analysis.**
- **EP066-EM/EP075-EM: EM1102248-001 Particular sample required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.**
- **Sample LMK-2 was filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **This batch is split with EM1102309.**



Analytical Results

Sub-Matrix: **SEDIMENT**

Client sample ID

Client sampling date / time

				LMK-1				
				07-MAR-2011 10:15				
Compound	CAS Number	LOR	Unit	EM1102248-001				
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	11.0	----	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	13.0	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Copper	7440-50-8	5	mg/kg	177	----	----	----	----
Lead	7439-92-1	5	mg/kg	15	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	133	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Silver	7440-22-4	2	mg/kg	<2	----	----	----	----
Tin	7440-31-5	5	mg/kg	15	----	----	----	----
Zinc	7440-66-6	5	mg/kg	76	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----
EK026G: Total Cyanide By Discrete Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	----	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	190	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<10.0	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<1.23	----	----	----	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<1.23	----	----	----	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<1.23	----	----	----	----
4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<1.23	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<1.23	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<1.23	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<1.23	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<2.46	----	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	<1.2	----	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<1.23	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								



Analytical Results

Sub-Matrix: **SEDIMENT**

Client sample ID

Client sampling date / time

				LMK-1				
				07-MAR-2011 10:15				
				EM1102248-001				
Compound	CAS Number	LOR	Unit					
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
Phenol	108-95-2	1	mg/kg	<1				
2-Methylphenol	95-48-7	1	mg/kg	<1				
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<2				
2-Nitrophenol	88-75-5	1	mg/kg	<1				
2,4-Dimethylphenol	105-67-9	1	mg/kg	<1				
2,4-Dinitrophenol	51-28-5	5	mg/kg	<98				
4-Nitrophenol	100-02-7	5	mg/kg	<98				
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<98				
Dinoseb	88-85-7	5	mg/kg	<98				
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<98				
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1				
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<1.2				
Acenaphthene	83-32-9	0.5	mg/kg	<1.2				
Acenaphthylene	208-96-8	0.5	mg/kg	<1.2				
Fluorene	86-73-7	0.5	mg/kg	<1.2				
Phenanthrene	85-01-8	0.5	mg/kg	5.3				
Anthracene	120-12-7	0.5	mg/kg	1.6				
Fluoranthene	206-44-0	0.5	mg/kg	7.4				
Pyrene	129-00-0	0.5	mg/kg	7.1				
Benz(a)anthracene	56-55-3	0.5	mg/kg	2.8				
Chrysene	218-01-9	0.5	mg/kg	2.4				
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	5.7				
Benzo(a)pyrene	50-32-8	0.5	mg/kg	3.1				
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	1.6				
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<1.2				
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	2.1				
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	39.1				
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<1.23				
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<1.23				
beta-BHC	319-85-7	0.03	mg/kg	<1.23				
gamma-BHC	58-89-9	0.03	mg/kg	<1.23				
delta-BHC	319-86-8	0.03	mg/kg	<1.23				
Heptachlor	76-44-8	0.03	mg/kg	<1.23				
Aldrin	309-00-2	0.03	mg/kg	<1.23				



Analytical Results

Sub-Matrix: **SEDIMENT**

Client sample ID

Client sampling date / time

				LMK-1				
				07-MAR-2011 10:15				
Compound	CAS Number	LOR	Unit	EM1102248-001				
EP075I: Organochlorine Pesticides - Continued								
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<1.23				
cis-Chlordane	5103-71-9	0.03	mg/kg	<1.23				
trans-Chlordane	5103-74-2	0.03	mg/kg	<1.23				
Endosulfan 1	959-98-8	0.03	mg/kg	<1.23				
4,4'-DDE	72-55-9	0.05	mg/kg	<1.23				
Dieldrin	60-57-1	0.03	mg/kg	<1.23				
Endrin aldehyde	7421-93-4	0.03	mg/kg	<1.23				
Endrin	72-20-8	0.03	mg/kg	<1.23				
Endosulfan 2	33213-65-9	0.03	mg/kg	<1.23				
4,4'-DDD	72-54-8	0.05	mg/kg	<1.23				
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<1.23				
4,4'-DDT	50-29-3	0.05	mg/kg	<1.23				
Methoxychlor	72-43-5	0.03	mg/kg	<1.23				
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<1.23				
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<1.23				
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<1.23				
^ Chlordane	57-74-9	0.03	mg/kg	<1.23				
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<1.23				
EP080/071: Total Petroleum Hydrocarbons								
C10 - C14 Fraction	----	50	mg/kg	<50				
C15 - C28 Fraction	----	100	mg/kg	400				
C29 - C36 Fraction	----	100	mg/kg	760				
^ C10 - C36 Fraction (sum)	----	50	mg/kg	1160				
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	Not Determined				
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	Not Determined				
Phenol-d6	13127-88-3	0.1	%	Not Determined				
2-Chlorophenol-D4	93951-73-6	0.1	%	Not Determined				
2,4,6-Tribromophenol	118-79-6	0.1	%	Not Determined				
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	Not Determined				
1,2-Dichlorobenzene-D4	2199-69-1	0.1	%	Not Determined				
2-Fluorobiphenyl	321-60-8	0.1	%	Not Determined				
Anthracene-d10	1719-06-8	0.1	%	Not Determined				
4-Terphenyl-d14	1718-51-0	0.1	%	Not Determined				



Analytical Results

Sub-Matrix: **WATER**

Client sample ID

Client sampling date / time

				LMK-2	----	----	----	----
				07-MAR-2011 10:15	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1102248-002	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.003	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.039	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	0.087	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.009	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.010	----	----	----	----
Tin	7440-31-5	0.001	mg/L	0.005	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.011	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	0.0017	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	0.2	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	1	µg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDT	50-29-3	2	µg/L	<2	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**

Client sample ID

Client sampling date / time

				LMK-2	----	----	----	----
				07-MAR-2011 10:15	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1102248-002	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2	µg/L	<2	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L	<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	----	----	----	----
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	1.0	µg/L	1.5	----	----	----	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	----	----	----	----
2-Methylphenol	95-48-7	1.0	µg/L	6.6	----	----	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	4.4	----	----	----	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	----	----	----	----
2,4-Dimethylphenol	105-67-9	1.0	µg/L	10.4	----	----	----	----
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	----	----	----	----
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	----	----	----	----
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**

Client sample ID

Client sampling date / time

				LMK-2	----	----	----	----
				07-MAR-2011 10:15	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1102248-002	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	----	----	----	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	1.7	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1,2,3-cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	640	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	1540	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	170	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	2350	----	----	----	----
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	3	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	2	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	61.5	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	77.3	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	92.8	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**

Client sample ID

Client sampling date / time

				LMK-2	----	----	----	----
				07-MAR-2011 10:15	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1102248-002	----	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	100	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	95.3	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	123	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	29.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	76.5	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	122	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	116	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	112	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	114	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	111	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	112	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	28.9	133
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	128
Phenol-d6	13127-88-3	10.6	119
2-Chlorophenol-D4	93951-73-6	11.5	125
2,4,6-Tribromophenol	118-79-6	11.3	133
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	13.5	122
1,2-Dichlorobenzene-D4	2199-69-1	11.8	122
2-Fluorobiphenyl	321-60-8	19.6	130
Anthracene-d10	1719-06-8	27.5	132
4-Terphenyl-d14	1718-51-0	26.7	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	27.8	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	35	129
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	135
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	74	128
4-Bromofluorobenzene	460-00-4	70	132
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	58
2-Chlorophenol-D4	93951-73-6	10	124
2,4,6-Tribromophenol	118-79-6	26	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	32	122
Anthracene-d10	1719-06-8	34	136
4-Terphenyl-d14	1718-51-0	34	140
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	131
Toluene-D8	2037-26-5	72	124
4-Bromofluorobenzene	460-00-4	70	126

COC rec'd 7/3/11 5pm Peter

Samples rec'd 1:20pm 7/3/11

CHAIN OF CUSTODY



Project Number : LMK1228

Project Name : Slurry analysis.

COC Number : 121

Client Company : LM & LM Knight P/L

Location : W. Heidelberg.

Consultant Name & Email Address : Srijeta De / srijeta.de@monarcenviro.com.au

Monarc Environmental Pty Ltd
Suite 3
255 Whitehorse Road
BALWYN VIC 3103
Phone : 03 8809 1800
Fax : 03 9836 0801
Email : mail@monarcenviro.com.au

Client Providing Samples:

Split batch
w/ EM1102309

Standard laboratory detection limits as per quote											
Other Analytes											
Epa Screen 448.3	MGT Suite 6: TBPM screen	PCB	PH								

Please provide report in the following format(s) :

- PDF (pdf)
- Excel (xls/csv)
- ESDAT (csv)

X
X
X

Turn-Around-Time (TAT)
REMARKS/SPECIFIC INSTRUCTIONS

Standard TAT

Environmental Division
Melbourne
Work Order
EM1102248



Telephone : + 61-3-8549 9600

LOCATION	SAMPLE			CONTAINER		PRESERVATIVE	SAMPLED BY												
REFERENCE	DATE	TIME	MATRIX *	TYPE	SIZE														
1 LMK-1	7/3/11	10:15	(S/W)	Jar	20ml	Ice	SD	/											
2 LMK-2	↓	10:15	↓	↓	↓	↓	↓	↓											
3 LMK-3	↓	10:30	↓	↓	↓	↓	↓	↓											

RELINQUISHED BY	TO	DATE	TIME
Srijeta De		7/3/10	12:30pm

TRANSFER TO LABORATORY BY	TO	DATE	TIME
RANU	(ALT)	7/3	1:20pm

LABORATORY:- MGT

METHOD OF SAMPLE REMOVAL:

SAMPLES REMOVED BY:

Metals:

QUOTE NUMBER:-

Al	Sb	As	B	Be	Cd	Cr	Co	Cu	Fe	Pb	
Mn	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	V	Zn	Hg

* MATRIX : (S) soil; (W) water; (G) gas

JAGG/S