

Coffey Geotechnics Pty Ltd Chatswood
 Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Attention: **Matthew Locke**

Report **382020-W**
 Client Reference HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH
 Received Date Jun 07, 2013

Certificate of Analysis



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

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

Client Sample ID			BH203 Water (Ultra- trace)	BH203_F Water (Ultra- trace)	BH204 Water (Ultra- trace)	BH204_F Water (Ultra- trace)
Sample Matrix						
Eurofins mgt Sample No.			S13-Jn05882	S13-Jn05883	S13-Jn05884	S13-Jn05885
Date Sampled			Jun 07, 2013	Jun 07, 2013	Jun 07, 2013	Jun 07, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	-	0.17	-
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	-	0.3	-
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	-
Toluene	0.001	mg/L	0.002	-	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	114	-	94	-
Total Recoverable Hydrocarbons - 2013 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 >C10-C16	0.05	mg/L	< 0.05	-	0.19	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	0.19	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benz(a)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(a)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(b&j)fluoranthene ^{N07}	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00002	< 0.00001
Benzo(g,h,i)perylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dibenz(a,h)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluorene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005

Client Sample ID			BH203	BH203_F	BH204	BH204_F
Sample Matrix			Water (Ultra-trace)	Water (Ultra-trace)	Water (Ultra-trace)	Water (Ultra-trace)
Eurofins mgt Sample No.			S13-Jn05882	S13-Jn05883	S13-Jn05884	S13-Jn05885
Date Sampled			Jun 07, 2013	Jun 07, 2013	Jun 07, 2013	Jun 07, 2013
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.00005	mg/L	0.00005	0.00006	0.00005	0.00006
Phenanthrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Total PAH	0.00005	mg/L	0.00005	0.00006	0.00005	0.00006
p-Terphenyl-d14 (surr.)	1	%	96	86	78	70
2-Fluorobiphenyl (surr.)	1	%	86	78	80	74
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	-	< 0.001	-
Cadmium (filtered)	0.0001	mg/L	< 0.0001	-	< 0.0001	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	< 0.001	-
Copper (filtered)	0.001	mg/L	0.001	-	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	-	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	< 0.0001	-
Nickel (filtered)	0.001	mg/L	0.005	-	< 0.001	-
Zinc (filtered)	0.005	mg/L	0.017	-	< 0.005	-

Client Sample ID			BH205	BH205_F	DUP1	RB
Sample Matrix			Water (Ultra-trace)	Water (Ultra-trace)	Water (Ultra-trace)	Water
Eurofins mgt Sample No.			S13-Jn05886	S13-Jn05887	S13-Jn05888	S13-Jn05889
Date Sampled			Jun 07, 2013	Jun 07, 2013	Jun 07, 2013	Jun 07, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	108	-	114	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	< 0.1

Client Sample ID			BH205	BH205_F	DUP1	RB
Sample Matrix			Water (Ultra-trace)	Water (Ultra-trace)	Water (Ultra-trace)	Water
Eurofins mgt Sample No.			S13-Jn05886	S13-Jn05887	S13-Jn05888	S13-Jn05889
Date Sampled			Jun 07, 2013	Jun 07, 2013	Jun 07, 2013	Jun 07, 2013
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Acenaphthylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Benz(a)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Benzo(a)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.001
Benzo(g,h,i)perylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.001
Chrysene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Dibenz(a,h)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Fluoranthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Fluorene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Naphthalene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Phenanthrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
Total PAH	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.001
p-Terphenyl-d14 (surr.)	1	%	106	98	92	72
2-Fluorobiphenyl (surr.)	1	%	90	88	80	95
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	-	0.001	< 0.001
Cadmium (filtered)	0.0001	mg/L	0.0004	-	0.0004	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.052	-	0.10	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.052	-	0.069	< 0.001
Zinc (filtered)	0.005	mg/L	0.044	-	0.037	< 0.005

Client Sample ID			TB	TS	DUP_F
Sample Matrix			Water	Water	Water (Ultra-trace)
Eurofins mgt Sample No.			S13-Jn05890	S13-Jn05891	S13-Jn05892
Date Sampled			Jun 06, 2013	Jun 06, 2013	Jun 07, 2013
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	78%	-
BTEX					
Benzene	0.001	mg/L	< 0.001	120%	-
Toluene	0.001	mg/L	< 0.001	118%	-
Ethylbenzene	0.001	mg/L	< 0.001	101%	-
m&p-Xylenes	0.002	mg/L	< 0.002	99%	-
o-Xylene	0.001	mg/L	< 0.001	104%	-
Xylenes - Total	0.003	mg/L	< 0.003	100%	-
4-Bromofluorobenzene (surr.)	1	%	100	98	-

Client Sample ID			TB	TS	DUP_F
Sample Matrix			Water	Water	Water (Ultra-trace)
Eurofins mgt Sample No.			S13-Jn05890	S13-Jn05891	S13-Jn05892
Date Sampled			Jun 06, 2013	Jun 06, 2013	Jun 07, 2013
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.00005	mg/L	-	-	< 0.00005
Acenaphthylene	0.00005	mg/L	-	-	< 0.00005
Anthracene	0.00005	mg/L	-	-	< 0.00005
Benz(a)anthracene	0.00005	mg/L	-	-	< 0.00005
Benzo(a)pyrene	0.00005	mg/L	-	-	< 0.00005
Benzo(b&j)fluoranthene ^{N07}	0.00001	mg/L	-	-	< 0.00001
Benzo(g,h,i)perylene	0.00005	mg/L	-	-	< 0.00005
Benzo(k)fluoranthene	0.00001	mg/L	-	-	< 0.00001
Chrysene	0.00005	mg/L	-	-	< 0.00005
Dibenz(a,h)anthracene	0.00005	mg/L	-	-	< 0.00005
Fluoranthene	0.00005	mg/L	-	-	< 0.00005
Fluorene	0.00005	mg/L	-	-	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	-	-	< 0.00005
Naphthalene	0.00005	mg/L	-	-	< 0.00005
Phenanthrene	0.00005	mg/L	-	-	< 0.00005
Pyrene	0.00005	mg/L	-	-	< 0.00005
Total PAH	0.00005	mg/L	-	-	< 0.00005
p-Terphenyl-d14 (surr.)	1	%	-	-	106
2-Fluorobiphenyl (surr.)	1	%	-	-	94

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: E004 Petroleum Hydrocarbons (TPH)	Sydney	Jun 13, 2013	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LM-LTM-ORG2010	Sydney	Jun 13, 2013	7 Day
BTEX - Method: E029/E016 BTEX	Sydney	Jun 07, 2013	14 Day
Polycyclic Aromatic Hydrocarbons - Method: E007 Polyaromatic Hydrocarbons (PAH)	Sydney	Jun 13, 2013	7 Day
Metals M8 filtered - Method: E020/E030 Filtered Metals in Water & E026 Mercury	Sydney	Jun 07, 2013	28 Day

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Order No.:
Report #: 382020
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jun 7, 2013 7:00 PM
Due: Jun 18, 2013
Priority: 5 Day
Contact Name: Matthew Locke

Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
BH204A_2.8-2.9_ASS1	Jun 07, 2013		Soil	S13-Jn05878			X			
BH204A_3.8_A SS2	Jun 07, 2013		Soil	S13-Jn05879			X			
BH204A_3.9_A SS3	Jun 07, 2013		Soil	S13-Jn05880			X			
BH204A_4.0-4.1_ASS4	Jun 07, 2013		Soil	S13-Jn05881			X			
BH203	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05882		X		X	X	X
BH203_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05883		X				

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Order No.:
Report #: 382020
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jun 7, 2013 7:00 PM
Due: Jun 18, 2013
Priority: 5 Day
Contact Name: Matthew Locke

Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
BH204	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05884		X		X	X	X
BH204_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05885		X				
BH205	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05886		X		X	X	X
BH205_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05887		X				
DUP1	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05888		X		X	X	X
RB	Jun 07, 2013		Water	S13-Jn05889		X		X	X	X
TB	Jun 06, 2013		Water	S13-Jn05890	X				X	
TS	Jun 06, 2013		Water	S13-Jn05891	X				X	

Company Name: Coffey Geotechnics Pty Ltd Chatswood	Order No.:	Received: Jun 7, 2013 7:00 PM
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	Report #: 382020	Due: Jun 18, 2013
	Phone: +61 2 9406 1000	Priority: 5 Day
	Fax: +61 2 9406 1002	Contact Name: Matthew Locke
Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
DUP_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05892		X				

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

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

TERMS

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

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.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions 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 >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 E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/L	< 0.00005			0.00005	Pass	
Acenaphthylene	mg/L	< 0.00005			0.00005	Pass	
Anthracene	mg/L	< 0.00005			0.00005	Pass	
Benz(a)anthracene	mg/L	< 0.00005			0.00005	Pass	
Benzo(a)pyrene	mg/L	< 0.00005			0.00005	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.00005			0.00005	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Petroleum Hydrocarbons (TPH)								
TRH C6-C9	%	91			70-130	Pass		
TRH C10-C14	%	96			70-130	Pass		
LCS - % Recovery								
BTEX E029/E016 BTEX								
Benzene	%	94			70-130	Pass		
Toluene	%	99			70-130	Pass		
Ethylbenzene	%	119			70-130	Pass		
m&p-Xylenes	%	112			70-130	Pass		
o-Xylene	%	101			70-130	Pass		
Xylenes - Total	%	108			70-130	Pass		
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions LM-LTM-ORG2010								
Naphthalene	%	106			70-130	Pass		
TRH C6-C10	%	93			70-130	Pass		
TRH >C10-C16	%	101			70-130	Pass		
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons E007 Polyaromatic Hydrocarbons (PAH)								
Acenaphthene	%	73			70-130	Pass		
Acenaphthylene	%	73			70-130	Pass		
Anthracene	%	80			70-130	Pass		
Benz(a)anthracene	%	80			70-130	Pass		
Benzo(a)pyrene	%	81			70-130	Pass		
Benzo(b&j)fluoranthene	%	82			70-130	Pass		
Benzo(g,h,i)perylene	%	74			70-130	Pass		
Benzo(k)fluoranthene	%	79			70-130	Pass		
Chrysene	%	77			70-130	Pass		
Dibenz(a,h)anthracene	%	75			70-130	Pass		
Fluoranthene	%	79			70-130	Pass		
Fluorene	%	76			70-130	Pass		
Indeno(1,2,3-cd)pyrene	%	74			70-130	Pass		
Naphthalene	%	81			70-130	Pass		
Phenanthrene	%	79			70-130	Pass		
Pyrene	%	77			70-130	Pass		
LCS - % Recovery								
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury								
Arsenic (filtered)	%	104			70-130	Pass		
Cadmium (filtered)	%	102			70-130	Pass		
Chromium (filtered)	%	106			70-130	Pass		
Copper (filtered)	%	100			70-130	Pass		
Lead (filtered)	%	100			70-130	Pass		
Mercury (filtered)	%	84			70-130	Pass		
Nickel (filtered)	%	100			70-130	Pass		
Zinc (filtered)	%	103			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C10-C14	S13-Jn07493	NCP	%	90		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
TRH >C10-C16	S13-Jn07493	NCP	%	96		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthene	S13-Jn05852	NCP	%	86			70-130	Pass	
Acenaphthylene	S13-Jn05852	NCP	%	86			70-130	Pass	
Anthracene	S13-Jn05852	NCP	%	88			70-130	Pass	
Benz(a)anthracene	S13-Jn05852	NCP	%	91			70-130	Pass	
Benzo(a)pyrene	S13-Jn05852	NCP	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	S13-Jn05852	NCP	%	97			70-130	Pass	
Benzo(g,h,i)perylene	S13-Jn05852	NCP	%	86			70-130	Pass	
Benzo(k)fluoranthene	S13-Jn05852	NCP	%	82			70-130	Pass	
Chrysene	S13-Jn05852	NCP	%	82			70-130	Pass	
Dibenz(a,h)anthracene	S13-Jn05852	NCP	%	89			70-130	Pass	
Fluoranthene	S13-Jn05852	NCP	%	87			70-130	Pass	
Fluorene	S13-Jn05852	NCP	%	83			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S13-Jn05852	NCP	%	85			70-130	Pass	
Naphthalene	S13-Jn05852	NCP	%	82			70-130	Pass	
Phenanthrene	S13-Jn05852	NCP	%	87			70-130	Pass	
Pyrene	S13-Jn05852	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Jn05884	CP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Jn05884	CP	%	91			70-130	Pass	
Toluene	S13-Jn05884	CP	%	128			70-130	Pass	
Ethylbenzene	S13-Jn05884	CP	%	118			70-130	Pass	
m&p-Xylenes	S13-Jn05884	CP	%	109			70-130	Pass	
o-Xylene	S13-Jn05884	CP	%	109			70-130	Pass	
Xylenes - Total	S13-Jn05884	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S13-Jn05884	CP	%	112			70-130	Pass	
TRH C6-C10	S13-Jn05884	CP	%	98			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Mercury (filtered)	S13-Jn05888	CP	%	82			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Jn05882	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S13-Jn05882	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Ethylbenzene	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S13-Jn05882	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S13-Jn05882	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Jn05882	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S13-Jn05882	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Jn05882	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Metals M8 filtered				Result 1	Result 2	RPD			
Arsenic (filtered)	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Metals M8 filtered				Result 1	Result 2	RPD		
Cadmium (filtered)	S13-Jn05882	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Chromium (filtered)	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S13-Jn05882	CP	mg/L	0.001	0.001	10	30%	Pass
Lead (filtered)	S13-Jn05882	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Nickel (filtered)	S13-Jn05882	CP	mg/L	0.005	0.005	2.0	30%	Pass
Zinc (filtered)	S13-Jn05882	CP	mg/L	0.017	0.017	<1	30%	Pass
Duplicate								
Metals M8 filtered				Result 1	Result 2	RPD		
Mercury (filtered)	S13-Jn05886	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass

Comments
Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)


Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Eurofins | mgt 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 Eurofins | mgt 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.

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Order No.:
Report #: 382020
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jun 7, 2013 7:00 PM
Due: Jun 18, 2013
Priority: 5 Day
Contact Name: Matthew Locke

Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
BH204A_2.8-2.9_ASS1	Jun 07, 2013		Soil	S13-Jn05878			X			
BH204A_3.8_A SS2	Jun 07, 2013		Soil	S13-Jn05879			X			
BH204A_3.9_A SS3	Jun 07, 2013		Soil	S13-Jn05880			X			
BH204A_4.0-4.1_ASS4	Jun 07, 2013		Soil	S13-Jn05881			X			
BH203	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05882	X		X	X	X	
BH203_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05883	X					

Company Name: Coffey Geotechnics Pty Ltd Chatswood	Order No.:	Received: Jun 7, 2013 7:00 PM
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	Report #: 382020	Due: Jun 18, 2013
	Phone: +61 2 9406 1000	Priority: 5 Day
	Fax: +61 2 9406 1002	Contact Name: Matthew Locke
Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
BH204	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05884		X		X	X	X
BH204_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05885		X				
BH205	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05886		X		X	X	X
BH205_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05887		X				
DUP1	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05888		X		X	X	X
RB	Jun 07, 2013		Water	S13-Jn05889		X		X	X	X
TB	Jun 06, 2013		Water	S13-Jn05890	X				X	
TS	Jun 06, 2013		Water	S13-Jn05891	X				X	

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Order No.:
Report #: 382020
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jun 7, 2013 7:00 PM
Due: Jun 18, 2013
Priority: 5 Day
Contact Name: Matthew Locke

Client Job No.: HOTEL DEVELPOMENT SITE DARLING HARBOUR GEOTLCOV02303AH

Eurofins | mgt Client Manager: Jean Heng

Sample Detail				TRH C6-C9	Polycyclic Aromatic Hydrocarbons	Acid Sulphate Soils Field pH Test	Metals M8 filtered	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217				X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
DUP_F	Jun 07, 2013		Water (Ultra-trace)	S13-Jn05892	X				

383108

Matt,

It is a pleasure.

Jasmine,

Can you please organise for a silica-gel cleanup TRH to be done on Jn05884 from this job?

Dr Bob Symons
Laboratory Manager | NSW

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road,
Lane Cove West, NSW 2066, Australia
Phone: +61 2 9900 8400
Direct: +61 2 9900 8405
Mobile: +61 488 965 444
Fax: +61 2 9420 2977

Email: BobSymons@eurofins.com.au
Website: www.eurofins.com.au

Please update your address book with this new e-mail address. Thank you.

From: Matthew Locke [mailto:Matthew.Locke@coffey.com]
Sent: Wednesday, 19 June 2013 12:32 PM
To: Bob Symons
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 380338 : Site HOLD: SOIL ANALYSIS

Bob,

Thanks for your time.

As discussed, we would like to proceed with the silica gel clean up analysis of sample BH204. Could you also issue the chromatograph for the analysis post silica gel clean up? This is for me really to get a better appreciation of 'what changed'.

Following the results of this analysis, we may wish to proceed with further analysis using MS techniques.

Regards,

Matt

From: Bob Symons [mailto:BobSymons@eurofins.com.au]
Sent: Wednesday, 19 June 2013 11:56 AM
To: Matthew Locke
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 380338 : Site HOLD: SOIL ANALYSIS

Matt,

Here is the chromatogram for the sample in question. I'll give you a call to discuss.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: Matthew Locke

Report 383108-W

Client Reference HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH

Received Date Jun 19, 2013

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Client Sample ID			BH204
Sample Matrix			Water
Eurofins mgt Sample No.			S13-Jn13088
Date Sampled			Jun 07, 2013
Test/Reference	LOR	Unit	
Petroleum Hydrocarbons Silica Cleanup (TPH)			
TRH C10-C14 after Silica Cleanup (TPH)	0.05	mg/L	< 0.05
TRH C15-C28 after Silica Cleanup (TPH)	0.1	mg/L	0.1
TRH C29-C36 after Silica Cleanup (TPH)	0.1	mg/L	< 0.1
TRH after Silica Cleanup (NEPM) *			
TRH >C10-C16 after Silica Cleanup	0.05	mg/L	< 0.05
TRH >C10-C16 after Silica Cleanup less Naphthalene (F2)	0.05	mg/L	< 0.05
TRH >C16-C34 after Silica Cleanup	0.1	mg/L	0.2
TRH >C34-C40 after Silica Cleanup	0.1	mg/L	< 0.1

Sample History

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

Description	Testing Site	Extracted	Holding Time
Petroleum Hydrocarbons Silica Cleanup (TPH)	Sydney	Jun 19, 2013	7 Day
- Method: E004 Petroleum Hydrocarbons Silica Cleanup (TPH)			
TRH after Silica Cleanup (NEPM) *	Sydney	Jun 19, 2013	7 Day
- Method: LM-LTM-ORG2010			

Company Name: Coffey Geotechnics Pty Ltd Chatswood	Order No.:	Received: Jun 19, 2013 12:30 PM
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	Report #: 383108	Due: Jun 26, 2013
	Phone: +61 2 9406 1000	Priority: 5 Day
	Fax: +61 2 9406 1002	Contact Name: Matthew Locke
Client Job No.: HOTEL DEVELOPMENT SITE DARLING HARBOUR GEOTLCOV02303AH		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					TRH after Silica Cleanup (NEPM) * Petroleum Hydrocarbons Silica Cleanup (TPH)	
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
BH204	Jun 07, 2013		Water (Ultra-trace)	S13-Jn13088	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

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

TERMS

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

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.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Petroleum Hydrocarbons Silica Cleanup (TPH) E004 Petroleum Hydrocarbons Silica Cleanup (TPH)							
TRH C10-C14 after Silica Cleanup (TPH)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 after Silica Cleanup (TPH)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 after Silica Cleanup (TPH)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH after Silica Cleanup (NEPM) * LM-LTM-ORG2010							
TRH >C10-C16 after Silica Cleanup	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 after Silica Cleanup	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 after Silica Cleanup	mg/L	< 0.1			0.1	Pass	
LCS - % Recovery							
Petroleum Hydrocarbons Silica Cleanup (TPH) E004 Petroleum Hydrocarbons Silica Cleanup (TPH)							
TRH C10-C14 after Silica Cleanup (TPH)	%	119			70-130	Pass	
LCS - % Recovery							
TRH after Silica Cleanup (NEPM) * LM-LTM-ORG2010							
TRH >C10-C16 after Silica Cleanup	%	127			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	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Jean Heng	Client Services
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)


Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

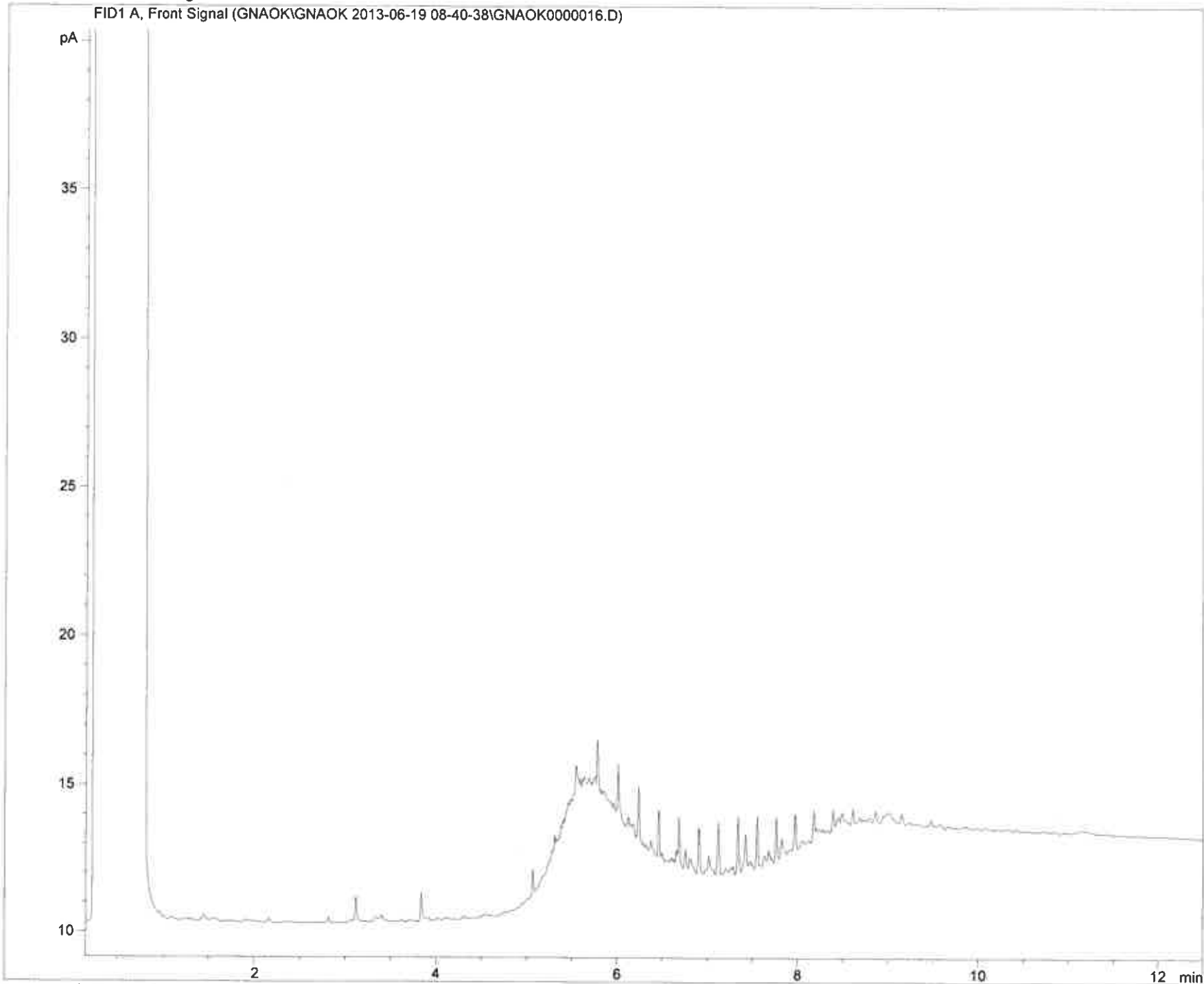
* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Eurofins | mgt 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 Eurofins | mgt 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.

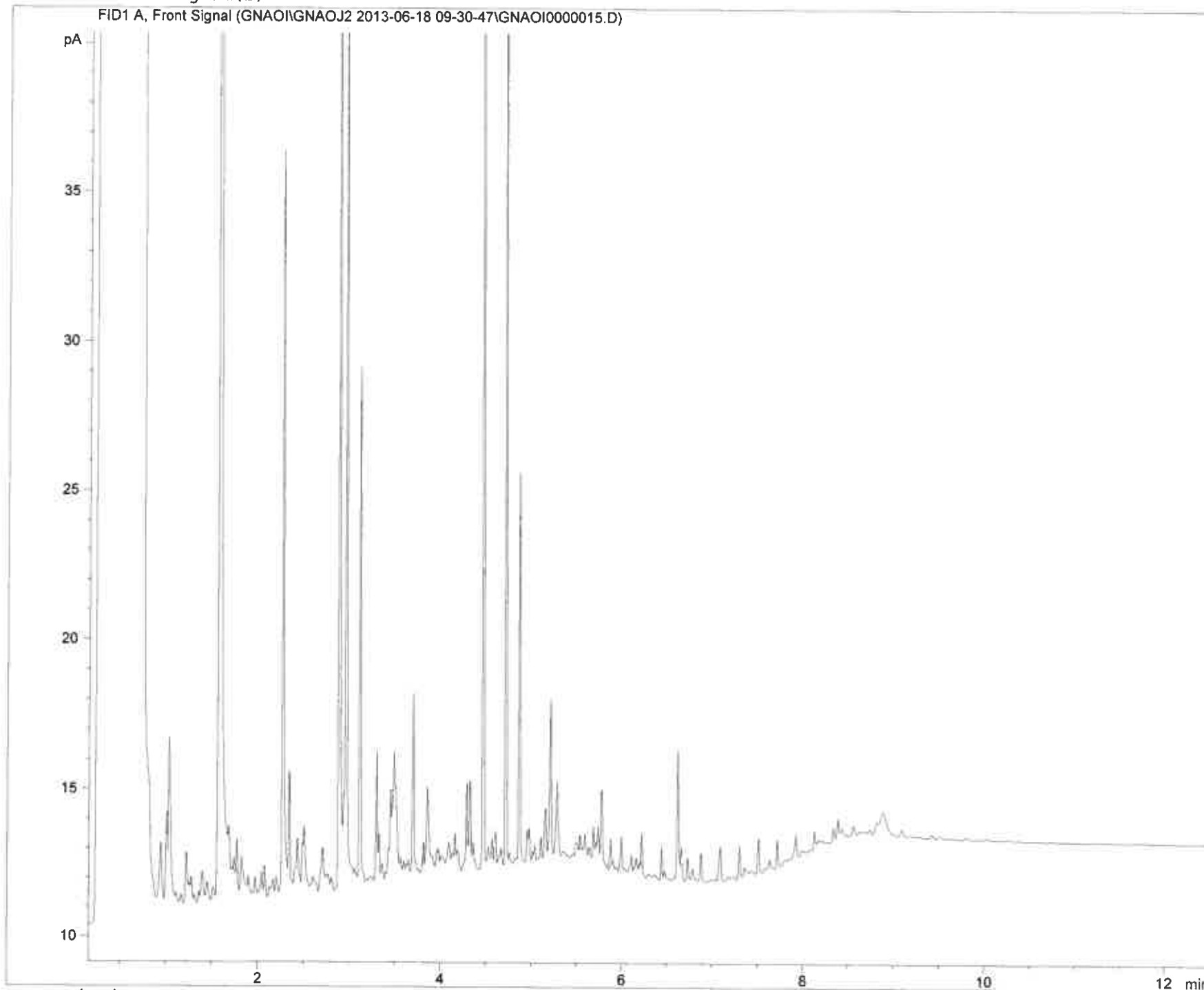
Current Chromatogram(s)

FID1 A, Front Signal (GNAOK\GNAOK 2013-06-19 08-40-38\GNAOK0000016.D)



Current Chromatogram(s)

FID1 A, Front Signal (GNAOI\GNAOJ2 2013-06-18 09-30-47\GNAOI0000015.D)



From: Matthew Locke [mailto:Matthew.Locke@coffey.com]
Sent: Wednesday, 12 June 2013 5:05 PM
To: Enviro Syd; Enquiries Syd
Subject: Supplementary Testing Schedule - Project GEOTLCOV24303AH - ICC Hotel, Sydney

Dear MGT,

Please find enclosed testing instructions for TCLP analysis. The table below summarises the sample reference, batch no. and analytes required

Sample ID	Batch Ref	Analysis Requested
BH202 0.1-0.2	380167	Nickel
BH202 0.5-0.6	380167	Nickel, Mercury
BH203 0.5-0.6	380366	Nickel
BH204 0.15-0.2	379021	Nickel
BH204 0.8-0.9	379021	Lead
BH205 0.5-0.6	379367	Nickel
BH209 0.2-0.3	380677	Nickel
DUP4	380167	Nickel, Mercury

Please commence this testing on a standard turnaround basis.

Please let me know if there are any queries.

Handwritten signature #382336

Regards,

Matt

Matthew Locke BEng (Hons) MIEMA CEnv
Senior Associate Environmental Engineer

Level 19, Tower B - Citadel Tower,
799 Pacific Highway, Chatswood, NSW 2067

t: (+61) (2) 9406 1000
f: (+61) (2) 9406 1002
m: (+61) (0) 427 202 493



Environmental Notice: Please consider the environment before printing this email.

Confidentiality Notice: The content of this message and any attachments may be privileged, in confidence or sensitive. Any unauthorised use is expressly prohibited. If you have received this email in error please notify the sender, disregard and then delete the email. This email may have been corrupted or interfered with. Coffey International Limited cannot guarantee that the message you receive is the same as the message we sent. At Coffey International Limited's discretion we may send a paper copy for confirmation. In the event of any discrepancy between paper and electronic versions the paper version is to take precedence. No warranty is made that this email and its contents are free from computer viruses or other defects.

Sample Receipt Advice

Company name: **Coffey Geotechnics Pty Ltd Chatswood**
Contact name: **Matthew Locke**
Client job number: **ADDITIONAL: ICC HOTEL DARLING HARBOUR GEOTLCOV24303AH**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jun 12, 2013 5:05 PM**
Eurofins | mgt reference: **382336**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
 - Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 19 degrees Celsius.
 - All samples have been received as described on the above COC.
 - COC has been completed correctly.
 - Attempt to chill was evident.
 - Appropriately preserved sample containers have been used.
 - All samples were received in good condition.
 - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
 - Organic samples had Teflon liners.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

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

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

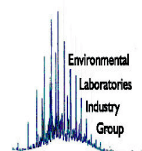
Eurofins | mgt Sample Receipt



Environmental Laboratory
Air Analysis
Water Analysis
Soil Contamination Analysis

NATA Accreditation
Stack Emission Sampling & Analysis
Trade Waste Sampling & Analysis
Groundwater Sampling & Analysis

38 Years of Environmental Analysis & Experience



Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067

Order No.:
Report #: 382336
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jun 12, 2013 5:05 PM
Due: Jun 20, 2013
Priority: 5 Day
Contact Name: Matthew Locke

Client Job No.: ADDITIONAL: ICC HOTEL DARLING HARBOUR GEOTLCOV24303AH

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Lead	Mercury	Nickel	Toxicity Characteristic Leaching Procedure (TCLP)
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
BH202 0.1-0.2	May 23, 2013		TCLP	S13-Jn08137	X			X	X
BH202 0.5-0.6	May 23, 2013		TCLP	S13-Jn08138	X		X	X	X
BH203 0.5-0.6	May 24, 2013		TCLP	S13-Jn08139	X			X	X
BH204 0.15-0.2	May 14, 2013		TCLP	S13-Jn08140	X			X	X
BH204 0.8-0.9	May 14, 2013		TCLP	S13-Jn08141	X	X			X
BH205 0.5-0.6	May 16, 2013		TCLP	S13-Jn08142	X			X	X
BH209 0.2-0.3	May 28, 2013		TCLP	S13-Jn08143	X			X	X
DUP4	May 23, 2013		TCLP	S13-Jn08144	X		X	X	X

Coffey Geotechnics Pty Ltd Chatswood
 Level 18, Tower B, Citadel Tower 799 Pacific Highway
 Chatswood
 NSW 2067



Certificate of Analysis

NATA Accredited
 Accreditation Number 1261
 Site Number 18217

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

Attention: **Matthew Locke**

Report **382336-L**

Client Reference ADDITIONAL: ICC HOTEL DARLING HARBOUR GEOTLCOV24303AH

Received Date Jun 12, 2013

Client Sample ID			BH202 0.1-0.2 TCLP	BH202 0.5-0.6 TCLP	BH203 0.5-0.6 TCLP	BH204 0.15-0.2 TCLP
Sample Matrix			S13-Jn08137	S13-Jn08138	S13-Jn08139	S13-Jn08140
Eurofins mgt Sample No.			May 23, 2013	May 23, 2013	May 24, 2013	May 14, 2013
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.001	mg/L	-	0.006	-	-
Nickel	0.05	mg/L	0.05	< 0.05	< 0.05	0.13
% Moisture						
% Moisture	0.1	%	9.4	7.3	10	4.4
Toxicity Characteristic Leaching Procedure (TCLP)						
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0	1.0
pH (TCLP - HCl addition)	0.1	units	2.1	1.8	2.1	1.8
pH (TCLP - initial)	0.1	units	11	9.6	9.0	9.3
pH (TCLP - off)	0.1	units	5.9	5.1	5.7	5.3

Client Sample ID			BH204 0.8-0.9 TCLP	BH205 0.5-0.6 TCLP	BH209 0.2-0.3 TCLP	DUP4 TCLP
Sample Matrix			S13-Jn08141	S13-Jn08142	S13-Jn08143	S13-Jn08144
Eurofins mgt Sample No.			May 14, 2013	May 16, 2013	May 28, 2013	May 23, 2013
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0.01	mg/L	< 0.01	-	-	-
Mercury	0.001	mg/L	-	-	-	0.009
Nickel	0.05	mg/L	-	< 0.05	0.07	0.05
% Moisture						
% Moisture	0.1	%	7.2	10.0	9.0	6.5
Toxicity Characteristic Leaching Procedure (TCLP)						
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0	1.0
pH (TCLP - HCl addition)	0.1	units	1.8	1.9	1.7	1.7
pH (TCLP - initial)	0.1	units	8.4	11	9.3	7.2
pH (TCLP - off)	0.1	units	5.0	6.0	5.1	5.2

Sample History

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: E022 Acid Extractable metals in Soils	Sydney	Jun 13, 2013	180 Day
% Moisture - Method: E005 Moisture Content	Sydney	Jun 13, 2013	0 Day
Toxicity Characteristic Leaching Procedure (TCLP) - Method: E019 TCLP Preparation	Sydney	Jun 13, 2013	0 Day

Company Name: Coffey Geotechnics Pty Ltd Chatswood	Order No.:	Received: Jun 12, 2013 5:05 PM
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	Report #: 382336	Due: Jun 20, 2013
	Phone: +61 2 9406 1000	Priority: 5 Day
	Fax: +61 2 9406 1002	Contact Name: Matthew Locke
Client Job No.: ADDITIONAL: ICC HOTEL DARLING HARBOUR GEOTLCOV24303AH		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					Toxicity Characteristic Leaching Procedure (TCLP)	Nickel	Mercury	Lead	% Moisture
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
BH202 0.1-0.2	May 23, 2013		TCLP	S13-Jn08137	X			X	X
BH202 0.5-0.6	May 23, 2013		TCLP	S13-Jn08138	X	X		X	X
BH203 0.5-0.6	May 24, 2013		TCLP	S13-Jn08139	X			X	X
BH204 0.15-0.2	May 14, 2013		TCLP	S13-Jn08140	X			X	X
BH204 0.8-0.9	May 14, 2013		TCLP	S13-Jn08141	X	X			X
BH205 0.5-0.6	May 16, 2013		TCLP	S13-Jn08142	X			X	X
BH209 0.2-0.3	May 28, 2013		TCLP	S13-Jn08143	X			X	X
DUP4	May 23, 2013		TCLP	S13-Jn08144	X		X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

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

TERMS

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

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.

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals E022 Acid Extractable metals in Soils									
Lead				mg/L	< 0.01		0.01	Pass	
Mercury				mg/L	0.001		0.001	Pass	
Nickel				mg/L	< 0.05		0.05	Pass	
LCS - % Recovery									
Heavy Metals E022 Acid Extractable metals in Soils									
Lead				%	78		70-130	Pass	
Mercury				%	101		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals					Result 1				
Mercury	S13-Jn11924	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals					Result 1				
Lead	S13-Jn08143	CP	%	94			70-130	Pass	
Nickel	S13-Jn08143	CP	%	87			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals					Result 1	Result 2	RPD		
Mercury	S13-Jn11923	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals					Result 1	Result 2	RPD		
Lead	S13-Jn08142	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Nickel	S13-Jn08142	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	

Comments
Sample Integrity

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

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0, 2 - pH 2.9, 3 - pH 9.2, 4 - Reagent (DI) water, 5 - Client sample, 6 - other

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)


Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Eurofins | mgt 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 Eurofins | mgt 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.

Appendix E
Groundwater Sampling Records &
Equipment Calibration Certificates

**Detailed Site Investigation
Proposed International Convention Centre Hotel Development
Darling Harbour, Sydney NSW**

RENTALS

Equipment Report - MINIRAE 2000 PID

This PID has been performance checked / calibrated* as follows:

Calibration	Actual Value	Reading	Pass?	
Zero - fresh air	0.0 ppm	0.0 ppm	<input checked="" type="checkbox"/>	
Span - Isobutylene	97 ppm	97.9 ppm	<input checked="" type="checkbox"/>	
Set Alarm limits to	High	100 ppm	Low	50 ppm
Operations Check				
<input checked="" type="checkbox"/>	Performance Check (pump, lamp, sensor & battery voltage check)			
<input checked="" type="checkbox"/>	Battery Charged	<input checked="" type="checkbox"/>	Filters Check	<input checked="" type="checkbox"/>
			Spare battery Voltage (5.5v minimum)	6 V
<input checked="" type="checkbox"/>	Electrical Safety Tag attached (AS/NZS 3760)		Tag No:	Valid to:
<input checked="" type="checkbox"/>	Bump test / Date: 13/05/2013			

* Calibration gas traceability information is available upon request.

Date: 13/05/2013 Checked by: MILENKO

Signed: _____

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MiniRae 2000 PID / Operational Check, plus Battery Voltage @ 5.6v
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lamp Voltage @ 10.6 eV Compound Set to: Isobutylene C/factor: 1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protective yellow rubber boot
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inlet probe (attached to PID)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare water trap filter(s) Qty <u>1</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charger 240V to 12V 500mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide Sheet behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Alkaline Battery Compartment with batteries
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inline Moisture trap Filter Guide Laminated
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calibration regulator & tubing (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Processors Signature/ Initials MS

Quote Reference	<u>35519</u>	Condition on return
Customer Ref	<u>S22478</u>	
Equipment ID	<u>PID MINSAA</u>	
Equipment serial no.	<u>110900923</u>	
Return Date	<u>/ /</u>	
Return Time		

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1300 675 123		Email: RentalsAU@ThermoFisher.cc	
Melbourne Branch 5 Casibbeson Drive, Scoresby 3179	Sydney Branch Level 1, 4 Telovora Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Howwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Ipswich 4705	Perth Branch 121 Bevington Ave Mellega WA 6050	G05

RENTALS

Equipment Report - MINIRAE 2000 PID

This PID has been performance checked / calibrated* as follows:

Calibration	Actual Value	Reading	Pass?		
Zero - fresh air	0.0 ppm	0.0 ppm	<input checked="" type="checkbox"/>		
Span - Isobutylene	93 ppm	95.2 ppm	<input checked="" type="checkbox"/>		
Set Alarm limits to	High	100 ppm	Low	50 ppm	
Operations Check					
<input checked="" type="checkbox"/> Performance Check (pump, lamp, sensor & battery voltage check)					
<input checked="" type="checkbox"/> Battery Charged	<input checked="" type="checkbox"/> Filters Check	<input checked="" type="checkbox"/> Spare battery Voltage (5.5v minimum) 6 V			
<input checked="" type="checkbox"/> Electrical Safety Tag attached (AS/NZS 3760)		Tag No: TFR 090	Valid to: 20/09/2013		
<input checked="" type="checkbox"/> Bump test / Date: 06/06/2013					

* Calibration gas traceability information is available upon request.

Date: 06/06/2013 Checked by: MILENKO

Signed: _____

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MiniRae 2000 PID / Operational Check, plus Battery Voltage @ 5.2v
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lamp Voltage @ 10.6 eV Compound Set to: Isobutylene C/factor: 1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protective yellow rubber boot
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inlet probe (attached to PID)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare water trap filter(s) Qty <u>1</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charger 240V to 12V 500mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide Sheet behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Alkaline Battery Compartment with batteries
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inline Moisture trap Filter Guide Laminated
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calibration regulator & tubing (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)
<input type="checkbox"/>	<input type="checkbox"/>	

Processors Signature/ Initials MS

Quote Reference	<u>35989</u>	Condition on return
Customer Ref		
Equipment ID	PID <u>MINBL</u>	
Equipment serial no.	<u>110902094</u>	
Return Date	<u>1 / 1</u>	
Return Time		

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@ThermoFisher.com	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5007	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090	

RENTALS

Equipment Report – Solinst Model 122 Interface Meter

This Meter has been performance checked / calibrated* as follows:

Cleaned/Tested

Pass?

Probe

Tape/Reel

Performance Test & Battery Voltage Check (8.29 v) 8.0v minimum

8.27
8.29

Date: 06/06/2013 Checked by: MILENKO

Signed: _____

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operations check OK
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plastic Box / Bag
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spare 9V Battery Qty <u>2</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Probe Cleaning Brush
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decon
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Instruction leaflet
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tape Guide
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processors Signature/ Initials			_____

Quote Reference		Condition on return
Customer Ref		
Equipment ID	SOL122 <u>50BE</u>	
Equipment serial no.	<u>122009289-1</u>	
Return Date	<u> / /</u>	
Return Time		

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@Thermofisher.com	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090	

RENTALS

Equipment Certification Report – TPS 90FLMV Water Quality Meter

This Water Quality Meter has been performance checked and calibrated as follows:

Sensor	Concentration	Span 1	Span 2	Traceability Lot #	Pass?
pH	pH 7.0 / pH 4.00	7 pH	4 pH	1	<input checked="" type="checkbox"/>
Conductivity	2.76mS/cm	0.00 mS/cm	2.76 mS/cm		<input checked="" type="checkbox"/>
TDS	36 ppk	0.0 ppk	36.0 ppk		<input checked="" type="checkbox"/>
Dissolved Oxygen	Sodium Sulphite / Air	0.00 ppm in Sodium Sulphite	8.85 ppm Saturation in Air		<input checked="" type="checkbox"/>
Turbidity	NA NTU	NA NTU	NA NTU	NA	<input checked="" type="checkbox"/>

Check only

Redox (ORP) *	Electrode operability test	240mV +/- 10%	232 mV	<input checked="" type="checkbox"/>
---------------	----------------------------	---------------	--------	-------------------------------------

* This meter uses an Ag/AgCl ORP electrode. To convert readings to SHE (Standard Hydrogen Electrode), add 199mV to the mV reading.

- Battery Status 8.2 (min 7.2V) Temperature 21.0 °C
 Electrical Safety Tag attached (AS/NZS 3760) Electrodes Cleaned and checked

Tag No: _____

Valid to: _____

Date: 05/06/2013

Signed: [Signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	90FLMV Unit. Ops check/Battery status: <u>8.2</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	pH sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conductivity/TDS/Temperature K=10 sensor, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dissolved oxygen YSI5739 sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Redox (ORP) sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Turbidity sensor, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Power supply 240V to 12V DC 200mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Syringe with storage solution for pH and ORP sensors
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 06/06/2013

Signed: MILENKO

TFS Reference	<u>35989</u>	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	90FLMV <u>WA6</u>	Condition on return:	
Equipment Serial No.	<u>58939</u>		

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@Thermofisher.com	
<small>Melbourne Branch 5 Caribbean Drive, Scoresby 3179</small>	<small>Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113</small>	<small>Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067</small>	<small>Brisbane Branch Unit 2/5 Ross St Newstead 4006</small>	<small>Perth Branch 121 Beringarra Ave Malaga WA 6090</small>	

RENTALS

Equipment Report – Geo Pump 2 PERISTALTIC PUMP

This pump has been cleaned and checked:

<input checked="" type="checkbox"/> Clean and check all components	<input checked="" type="checkbox"/> Ops check
--	---

Date: 06/06/2013 Checked by: MILENKO

Signed: _____

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Peristaltic Model (GP2) Pump, Alligator Clips
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Instruction Sheet
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/8" Medical Grade Silicone Tubing (pump head) 30cm
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 metal Hose Clips
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transport Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BATTERY</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>CHARGER</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Processors Signature/ Initials			<u>MS</u>

EE Quote Reference	<u>35989</u>	Condition on return
Customer Ref		
Equipment ID	<u>GP2SG</u>	
Equipment serial no.	<u>C08001439</u>	
Return Date	<u> / /</u>	
Return Time		

Phone: (Free Call) 1300 735 295		Environmental Assessment Technologies		Fax: (Free Call) 1800 657 123	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179 Email: RentalsEnviroVIC@thermofisher.com	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113 Email: RentalsEnviroNSW@thermofisher.com	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067 Email: RentalsEnviroSA@thermofisher.com	Brisbane Branch Unit 2/5 Ross St Newstead 4006 Email: RentalsEnviroQLD@thermofisher.com	Perth Branch 121 Beringarra Ave Malaga WA 6090 Email: RentalsEnviroWA@thermofisher.com	

PROJECT NAME: Hotel Development Site, Darling Harbour PROJECT NUMBER: GEOTLCOV24303AH

FIELD PERSONNEL: PD DATE: 7/6/13

PROJECT MANAGER: ML

WELL ID: BH205 METER ID: Rental TOTAL WELL DEPTH: 2.795m SCREEN INTERVAL: _____

EQUIPMENT USED: BAILER WATERRA OTHER _____ WELL DIAMETER: 50mm WELL STICK-UP: flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) - (DEPTH TO WATER) = (WATER COLUMN)

2.795 m - 2.220 = 0.575 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME

~2 L
= 12 L

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY - tick one				COMMENTS ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc		
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	Clear	Slightly Cloudy	Cloudy	Very Cloudy		Turbid	
0	NA																			
		2		3.15		38.6		MS	6.27		9		22.0						✓	No odour. Brown
		4		2.40		39.9			6.36		10		22.1						✓	" "
		6		2.66		42.2			6.50		11		22.0						✓	" "
		8		2.61		43.0			6.60		19		22.0						✓	" "
		10		4.02		43.2			6.64		23		21.9						✓	" "
		12		3.43		43.2			6.61		40		22.1						✓	" "
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C								

WELL HEADSPACE PID READING
PID READING _____
PPM: 0.0

DUPLICATE COLLECTED: Y N DPLICATE ID: N/A

TRIPPLICATE COLLECTED: Y N TRIPPLICATE ID: N/A

WERE METALS FIELD FILTERED? Y N UNFILTERED SAMPLES MUST NOT BE PUT INTO A PRESERVED CONTAINER (IE. METALS BOTTLE)

PROJECT NAME: Hotel Development Site, Darling Harbour PROJECT NUMBER: GEOTLCOV24303AH
 FIELD PERSONNEL: PD DATE: 7/6/13
 PROJECT MANAGER: ML

WELL ID: BH203 DIAMETER: 50 mm WELL DEPTH: 3.025 m SCREEN INTERVAL: _____ to _____ m below TOC STICK-UP: flush mm

FIELD EQUIPMENT
 Equipment ID: Rental Pump Intake Depth: ~2.5m
 Meter ID: Rental After Pump Installation: 2.710 m below TOC

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L) note 1	DEPTH TO WATER (m) note 2	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc		
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid			
0	NA																				
3:34p.m.	1	2.925	2.05	ppm		3.13	mS	6.81		-10	mV	19.5	°C	✓						No odour. Browns.	
	2	2.927	5.30			2.73		7.03		-24		19.5		✓						" "	
	3	3.025	3.62			2.67		6.93		-18		19.6		✓						" "	
						Well purged dry		after 3L.												" "	
						7.705	ppm	2.53	mS	7.15		19.3	°C	✓						No odour. Pale grey.	
STABILISATION CRITERIA (3 readings within following ranges)																					

DUPLICATE COLLECTED: Y N DUPLICATE ID: _____
 WERE METALS FIELD FILTERED? Y N UNFILTERED samples must not be put into a preserved container (ie. 'metals' bottle)
 TRIPPLICATE COLLECTED: Y N TRIPPLICATE ID: _____

Notes:
 1 Ensure minimum 3 'equipment' volumes including volume of pump bladder, flow cell and tubing
 2 Drawdown during pumping to be limited to <100 mm where possible

PROJECT NAME: Hotel Development site, Darling Harbour PROJECT NUMBER: GEOTLCON24303AH

FIELD PERSONNEL: PD DATE: 7/6/13

PROJECT MANAGER: ML

WELL ID: BH205 DIAMETER: 50 mm WELL DEPTH: 2.795 m SCREEN INTERVAL: _____ to _____ m below TOC STICK-UP: flush mm

FIELD EQUIPMENT

Equipment ID: Rental WELL HEADSPACE PID READING

Meter ID: Rental PID READING

Depth to Water - Before Pump Installation: 2.235 m below TOC Pump Intake Depth: ~2.5 m

After Pump Installation: 2.234 m below TOC PPM: 0.0

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L) note 1	DEPTH TO WATER (m) note 2	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc		
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid			
0	NA																				
10:20		1	2.340	5.77	ppm	43.0	mS	6.60		60	mV	21.9	0C	✓						No odour. Very pale brown	
10:22		2	2.404	4.05		43.5		6.64		74		21.6		✓						" "	
10:24		3	2.414	3.18		43.3		6.59		73		21.7		✓						" "	
10:26		4	2.430	3.31		43.3		6.57		75		21.9		✓						" "	
10:28		5	2.440	2.66		43.1		6.56		76		21.9		✓						" Very pale grey	
10:30		6	2.452	2.63		43.3		6.56		78		22.0		✓						" Colourless	
																				" "	
																					" "
																					" "
																					" "
																					" "
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C									

DUPLICATE COLLECTED: Y N DUPLICATE ID: DUPI TRIPPLICATE COLLECTED: Y N TRIPPLICATE ID: _____

WERE METALS FIELD FILTERED? Y N UNFILTERED samples must not be put into a preserved container (ie. 'metals' bottle)

Appendix F

Unexpected Finds Procedure

**Detailed Site Investigation
Proposed International Convention Centre Hotel Development
Darling Harbour, Sydney NSW**

APPENDIX F: UNEXPECTED FINDS PROTOCOL

F.1 Context

Coffey's review of historic land uses indicated that the site was partially submerged and formed part of a tidal mudflat during the late 18th century (Coffey, July 2013). Land reclamation activities commenced in the 1860s and 1870s to extend the Darling Harbour branch railway line towards the Pyrmont Bay wharves, and enable the construction of the Darling Harbour Goods Yards and associated Iron Wharf. The site is located in the southern part of the goods yard. The site was subsequently redeveloped during the 1980s as a pedestrian and vehicle access immediately to the west of Harbourside and adjacent to the Convention Centre. Figure F1 provides an indication of the extent of historic land uses of the site.

Coffey investigated ground contamination across the site. In summary, these investigations identified no widespread contamination. The Detailed Site Investigation report (Coffey, July 2013) identified no unacceptable risks to human health or other aspects of the environment in the context of the ICC Hotel Development proposed by LLD for the site, other than the presence of Acid Sulfate Soil in natural alluvium.

Coffey's investigations identified localised areas of the site where soils and/or groundwater reported concentrations of chemicals which may indicate the presence of potentially unidentified contamination between sampling locations. As such, in the Detailed Site Investigation report Coffey recommended that an Unexpected Finds Protocol be prepared which includes procedures for identifying and managing potential risks and protecting human health and environment in the event that unexpected contamination or hazardous materials (e.g. asbestos containing materials) is discovered during excavation at the site.

F.2 Data Gaps & Uncertainties

Potential data gaps and uncertainties associated with ground contamination at the site include:

- The presence of potentially unidentified contamination between sampling locations, or where otherwise limited investigation data is currently available.
- Potential variability in groundwater quality over time.
- The presence of potentially unidentified contamination in fill materials surrounding large diameter culverts which pass beneath the central parts of the site.
- The extent of Acid Sulfate Soils in alluvium across the site.
- Potential for asbestos impacted soils.

The data gaps and uncertainties have been used to develop this Unexpected Finds Protocol.

F.3 Unexpected Finds Contingency Plan

F.3.1 Responsibilities for Implementation

LLD will retain the overall responsibility for implementing the unexpected finds contingency plan for the site. It is envisaged that LLD will assigning specific responsibilities to project personnel as part of the

construction planning process. Specific roles and responsibilities for this Plan shall be confirmed prior to construction works commencing.

F.3.2 Training and Awareness of Personnel

Personnel involved in earthworks on site are to be made aware of and trained in the recognition of potential unexpected finds. Training can be undertaken as a part of general site induction and refreshed periodically at toolbox meetings.

Training should provide general awareness for recognition of potential contamination and hazardous materials, so that works can be suspended temporarily to allow advice from an appropriate qualified consultant and effective management of the emergent condition. In general, a precautionary approach is employed through use of the unexpected finds procedure outlined in the following section.

Coffey notes that some forms of contamination may not be associated with any visual or olfactory indicators in the field. Although a precautionary approach is adopted, the unexpected finds procedure may not provide protection against such impacts.

F.3.2 Management of Unexpected Finds

Where unexpected contamination is suspected by personnel involved in earthworks on site, works will be temporarily suspended in the affected part of the site. This area will be isolated to minimise potential for disturbance to the affected soils/groundwater. LLD, their appointed sub-contractor and environmental consultant will be notified of the unexpected find.

Due to the potential variability in both the nature and extent of an unexpected find, Coffey is unable to define specific remedial strategies for contamination associated with an unexpected find. However, Coffey describes a process for identifying and evaluating feasible options to manage an unexpected find. Assessment and management of unexpected finds may be subject to Site Auditor review.

As noted within Section 12 of the Detailed Site Investigation Report (Coffey, July 2013), if wastes are likely to be generated as a result of managing or treating unexpected finds, these materials should be classified in accordance with the NSW EPA Waste Classification Guidelines (NSW DECCW; 2009).

F.3.3 Unexpected Finds Procedure

Should any unexpected actual or suspected contamination be encountered during excavation works, the following procedure should be implemented:

1. Stop work in the potentially hazardous area as soon as it is safe to do so and move to the upwind side of the area, or away from the area.
2. Assess the potential immediate risk to human health posed by the unexpected find and assess if evacuation or assistance of emergency services is required.
3. Delineate an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. Additional control measures may be required for:
 - a) Odours and/or volatile compounds: odours suppression and no flames/sparks signage.
 - b) Potential asbestos containing materials: if area is small cover with weighted plastic sheeting or geofabric. For larger areas, use regular dust suppression as conditions require.

4. Contact the appointed environmental consultant for advice and request a site visit, as soon as practicable, to undertake an assessment of the unexpected find. The Site Auditor should be informed of the find after a preliminary assessment is made.
5. The environmental consultant should assess the unexpected find and provide:
 - a) Preliminary assessment of the suspected contamination and immediate management controls if needed;
 - b) What further assessment and/or remediation works are required and how such works are to be undertaken in accordance with contaminated site regulations and guidelines;
 - c) Provision of clean up advice, including classification of materials likely to be disposed off-site as waste (if necessary);
 - d) Supervision of remediation works required (where applicable, or considered necessary);
 - e) Validation works required following remediation works (if applicable).
6. When the environmental consultant is satisfied that the unexpected find has been properly addressed and that the site is suitable for resumption of works, the environmental consultant will provide relevant information and recommendations to the Site Supervisor, particularly for considering change to the Site Safety Plan and Site Management Plan.
7. If it is deemed safe to do so by the Site Superintendent, works may resume in the affected area.

F.4 Potential Unexpected Finds

Based on findings of previous investigations and site history, potential unexpected finds which could occur within the site are summarised in Table F.1.

Table F.1: Summary of Non-specific Unexpected Finds

Potential Unexpected Find	Observed Characteristic	Key Contaminants of Concern
Petroleum Hydrocarbons as Oil, Grease or Fuel residues	<p>May be identified by either odour and/or visual indications of contamination.</p> <p>Hydrocarbon contamination may be identified by characteristic petrol, diesel or 'oily' odours which may vary in strength from weak (just detectable) to very strong (easily detectable at a distance from the source).</p> <p>The odour may or may not be accompanied by specific areas of dark staining (black-grey) or larger scale discolouration of strata from a previously identified 'natural colour' (e.g. staining of orange and brown clay to dark grey and green.)</p> <p>May also be visible as a distinct coloured sheen on water within an excavation.</p>	TPH, BTEX, PAH, lead
Buried dry waste	May include a variety of waste materials including wood, plastic, metal fragments, building rubble (e.g. concrete, brick, asphalt, asbestos)	Asbestos, heavy

Potential Unexpected Find	Observed Characteristic	Key Contaminants of Concern
materials	containing materials etc.).	metals
Buried or surface bonded ACM, asbestos fines/friable asbestos	<p>Cement bound ACM (fibro cement sheet) may be present in building waste or pipes. Friable forms of asbestos including lagging and insulation may be evidenced fibrous material which flakes and powders easily. Textured coatings and floor tiles may also contain asbestos.</p> <p>Asbestos fines and asbestos fibres are not visible to the unaided eye. Laboratory analysis by microscope is required to identify asbestos in soil.</p>	Asbestos
Buried organic materials	Such materials may be associated with decomposed plant matter found within the natural alluvial soils.	Nutrients, gaseous emissions (CH ₄ , CO ₂ , H ₂ S)
Structures or conduits containing or being surrounded by deleterious materials	<p>Could be identified as follows:</p> <ul style="list-style-type: none"> • A buried tank or former pipelines; • Deeper sand fill sometimes with visual/olfactory indications of contamination • Presence of small concrete footings surrounding by odorous or visually impacted soils and/or groundwater. 	TPH, BTEX, PAH, lead
Ash or slag deposits	<p>Ash materials typically light weight, grey and white sand and gravel sized (1mm to 10mm) particles.</p> <p>Slag materials can be varied in consistency and colour and may comprise pale grey to blue/green/grey, and be loose or cemented. Slag gravels can be very angular and appear to have a vesicular (i.e. 'honeycomb') shape.</p>	PAH, heavy metals
Other unusual odours	<ul style="list-style-type: none"> • Solvent odour • Acetone (nail polish remover) odour • Sulfur (rotten egg) odour (possibly associated with ASS) • Acidic (Acetic/Formic/Citric) odour. • Ammonia odour • Caustic odour 	Various

E.3 Localised Contamination - Known

Investigations carried out within the site have identified localised areas of the site where soils and/or groundwater reported concentrations of contamination which were not sufficient to warrant remediation or other management. However, these results may indicate the presence of potentially unidentified contamination between sampling locations, or where investigation data is limited. Table F.2 provides a

summary of locations where low level contamination has been reported, and these are annotated on Figure F1.

Table F.2: Summary of Areas where indications of contamination has been previously identified

Sampling Location	Type of Impact	Likely Occurrences	Contaminants of Concern
BH204	Hydrocarbon compounds in soil and groundwater	Soils collected from BH204 reported low levels of hydrocarbon compounds at depths between 0.15-0.2mbgs. Soils collected from a depth of 0.8-0.9mbgs did not report petroleum hydrocarbons above the laboratory's LOR. Low level contamination has been identified within groundwater samples collected from BH204 at 2.5mbgs (approx. 0.5mAHD).	TPH and PAH.
BH204a	Possible hydrocarbon compounds in soil	Black staining was observed in soils from BH204a at depths between 0.8m and 1.1mbgs. No soil samples were collected from BH204a for chemical analysis. The observed staining may be an indicator that soils in the vicinity of BH204a have been locally impacted with hydrocarbon compounds.	TPH and PAH.
BH201a BH209	Hydrocarbon compounds in soil	Soils collected from BH201a reported low levels of petroleum hydrocarbon fractions at depths between 0.5-0.6mbgs. Soils collected from BH201a at a depth of 1.5-1.6mbgs did not report petroleum hydrocarbon fractions above the laboratory's LOR. Soils collected from BH209 also reported low levels of petroleum hydrocarbon fractions at depths between 0.2-0.3mbgs. BH209 terminated at 0.45mbgs on sandstone bedrock.	TPH and PAH.
BH203	Hydrocarbon compounds in groundwater	Toluene and naphthalene were detected at concentrations above the LOR (although below the adopted assessment criteria) in a groundwater sample collected from BH203.	BTEX and PAH.
ASS and PASS	Acidification of soils	ASS and PASS have been identified in natural alluvial soil, which were sampled from the southeastern corner of the site (i.e. BH204, BH204a). These alluvial materials may be encountered during deeper excavations associated with the proposed basement.	ASS and PASS

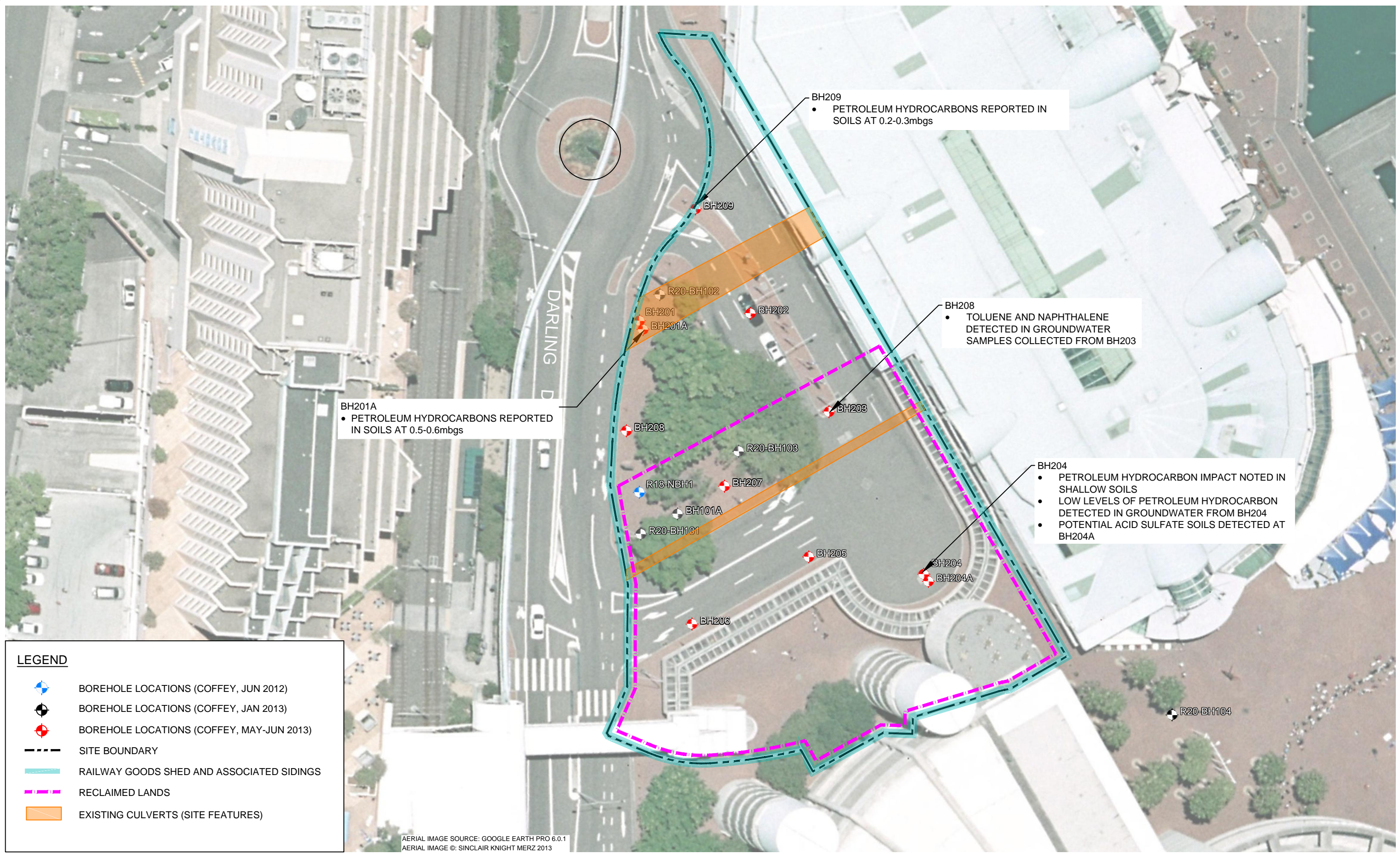
REFERENCES

1. Coffey (July 2013); Detailed Site Investigation, Proposed International Convention Centre Hotel Development, Darling Harbour, Sydney NSW (Ref: GEOTLCOV24303AH-AD)
2. NSW DECCW (2009); Waste Classification Guidelines - Part 1: Classifying Waste

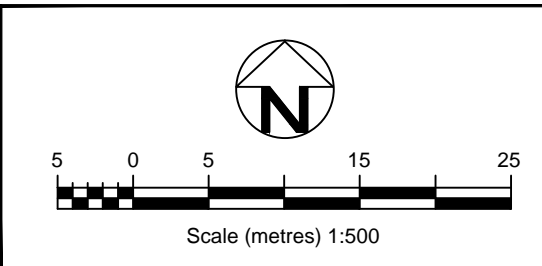
ACRONYMS

ACM	Asbestos Containing Materials
ASS	Acid sulphate soils
BTEX	Benzene, toluene, ethylbenzene, xylene
LLD	Lend Lease Development
LOR	Limit of reporting
mAHD	Metres above Australian Height Datum
mbgs	Metres below ground surface
PAH	Polycyclic aromatic hydrocarbons
PASS	Potential acid sulfate soils
TPH	Total petroleum hydrocarbons

PLOT DATE: 14/06/2013 3:30:48 PM DWG FILE: \\CHATFS01\CORP\COFFEY\COMA\DATA\GEO\GEO\PROJECTS\GEO\GEO\COV24303AH\LEND LEASE - ICC HOTEL\8 FIGURES\GEO\COV24303AH-D02.DWG



revision	description	drawn	approved	date



drawn	MV
approved	ML
date	17/06/13
scale	AS SHOWN
original size	A3



client:	LEND LEASE DEVELOPMENTS PTY LTD
project:	SYDNEY INTERNATIONAL CONVENTION EXHIBITION AND ENTERTAINMENT PRECINCT (SICEEP) - ICC HOTEL DEVELOPMENT
title:	SUMMARY OF AREAS WHERE INDICATIONS OF POTENTIAL CONTAMINATION HAVE BEEN IDENTIFIED
project no:	GEO\TCOV24303AH-D02
figure no:	F1