



ENVIRONMENTAL INVESTIGATION SERVICES

REPORT
TO
BLACKTOWN WORKERS SPORTS CLUB
C/- PAYNTER DIXON CONSTRUCTIONS PTY LTD
ON
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT
FOR
SITE A: PROPOSED OUT DOOR SPORTS FACILITIES –
221 WALTERS ROAD, ARNDELL PARK.

SITE B: RESIDENTIAL AGE CARE FACILITY
AND CHILDCARE CENTRE
– 170 RESERVOIR ROAD, ARNDELL PARK
AT
BLACKTOWN WORKERS SPORTS CLUB,
OFF RESERVOIR ROAD, ARNDELL PARK, NSW

VOLUME 2 OF 2

8 MARCH 2018

Project ID: E28870KBrpt-rev3



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EIS is a division of Jeffery and Katauskas Pty Ltd • ABN 17 003 550 801

Appendix D: Borehole / Test pit Logs



BOREHOLE LOG

Borehole No.
201
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 57.0m												
Date: 6-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION	█			N = 10 3,5,5	0			FILL: Silty clay topsoil, medium plasticity, dark orange brown and dark brown, trace of ash.	MC>PL			GRASS COVER
					0.5		CH	SILTY CLAY: high plasticity, dark orange brown mottled grey, trace of ash.	MC>PL	H	550 500 520	RESIDUAL
	█			1								
				2		-	SHALE: brown.	XW-DW	EL-VL			VERY LOW 'TC' BIT RESISTANCE
				2.5			SHALE: brown and grey.	DW	L			LOW RESISTANCE
			3									
			3.5									
			4							L-M		LOW TO MODERATE RESISTANCE
					4			END OF BOREHOLE AT 4.1m				'TC' BIT REFUSAL
					5							
					6							
					7							

BOREHOLE LOG

Borehole No.

202

1/1

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

Method: SPIRAL AUGER
JK500

R.L. Surface: ≈ 58.2m

Date: 6-11-15

Datum: AHD

Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty clay, high plasticity, dark brown and orange red brown, with roots and root fibres, fine to coarse grained igneous gravel, trace of ash/	MC>PL			GRASS COVER
					N = 7 4,5,2			CH	SILTY CLAY: high plasticity, light orange brown and light grey, trace of fine to coarse grained ironstone gravel, ash and root fibres.	MC>PL	H	>600 >600 >600	RESIDUAL
						1							
					N = 18 3,7,11				as above, but light grey.			>600 >600 >600	
						2							
								-	SHALE: brown, with M strength iron indurated bands.	DW	L		LOW 'TC' BIT RESISTANCE
						3					M		MODERATE TO HIGH RESISTANCE
									END OF BOREHOLE AT 3.6m				'TC' BIT REFUSAL
						4							
						5							
						6							
						7							



BOREHOLE LOG

Borehole No.
203
1/1

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD			Method: SPIRAL AUGER JK500						R.L. Surface: ≈ 56.4m				
Date: 6-11-15			Logged/Checked by: L.M./D.S.						Datum: AHD				
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	FS	U50	DB	DS									
DRY ON COMPLETION	■				N = 16 3,5,11	0			FILL: Silty clay, medium plasticity, dark brown, with roots and root fibres, trace of ash.	MC≈PL			GRASS COVER
								CL	SILTY CLAY: medium plasticity, light orange brown, with fine to coarse grained ironstone gravel, trace of ash.	MC>PL	H		APPEARS POORLY COMPACTED
												450 420 420	RESIDUAL
	■					1							
					SPT 6/50mm REFUSAL			-	SHALE: brown.	XW-DW	EL-VL		VERY LOW 'TC' BIT RESISTANCE
						3			SHALE: grey.	DW	L		LOW RESISTANCE
						4							
						5					L-M		MODERATE RESISTANCE
						6			END OF BOREHOLE AT 5.8m				'TC' BIT REFUSAL
					7								



BOREHOLE LOG

Borehole No.
204
1/2

Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD
Date: 2-11-15
Method: SPIRAL AUGER JK500
R.L. Surface: ≈ 52.3m
Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
▼ AFTER 24 HRS ▼ ON COMPLETION						0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres.	MC<PL			GRASS COVER
					N = 8 3,3,5	1	CH	SILTY CLAY: high plasticity, light grey mottled light orange brown.	MC>PL	VSt	200 220 200	RESIDUAL	
					N = 7 3,3,4	2						200 220 220	
					N = 5 2,2,3	3					F	50 75 50	
						4	-	SHALE: light brown.	DW	VL-L			VERY LOW TO LOW 'TC' BIT RESISTANCE
						5		SHALE: grey.	SW	L			LOW RESISTANCE WITH MODERATE BANDS
						6							
						7							



BOREHOLE LOG

Borehole No.
204
2/2

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Date: 2-11-15 Method: SPIRAL AUGER JK500 Logged/Checked by: L.M./D.S. R.L. Surface: ≈ 52.3m Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
					8			SHALE: grey.	SW	M		MODERATE RESISTANCE
					9			END OF BOREHOLE AT 9.0m				
					10							
					11							
					12							
					13							
					14							



BOREHOLE LOG

Borehole No.
205
1/2

Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD
Date: 2-11-15
Method: SPIRAL AUGER JK500
R.L. Surface: ≈ 52.7m
Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
AFTER 24 HRS 					0			FILL: Silty clay, high plasticity, dark brown, with fine to coarse grained igneous gravel, trace of ash, roots and root fibres.	MC>PL			GRASS COVER
				N = 5 1,2,3	1		CH	SILTY CLAY: high plasticity, light grey mottled orange brown.	MC>PL	VSt		RESIDUAL
				N = 10 3,4,6	2						250 250 250	
				N = 18 4,9,9	3		as above, but with fine to coarse grained ironstone gravel.		St		150 180 150	
					4		-	SHALE: grey, with M-H strength iron indurated bands.	DW	VL-L		VERY LOW TO LOW 'TC' BIT RESISTANCE
					5					L		LOW TO MODERATE RESISTANCE
					6							
					7					H		HIGH RESISTANCE
	ON COMPLETION											

BOREHOLE LOG

[illegible]



BOREHOLE LOG

Borehole No.
206
1/2

Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD
Date: 2-11-15
Method: SPIRAL AUGER JK500
R.L. Surface: ≈ 56.2m
Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
▼ AFTER 24 HRS				N = 4 2,2,2	0	[Cross-hatched pattern]		FILL: Silty clay, medium plasticity, dark orange brown, with fine to coarse grained shale gravel and cobble sized shale, fine grained sandstone and igneous gravel, tile and brick fragments.	MC>PL		250 250 220	APPEARS POORLY COMPACTED
					1							
				N = 11 4,5,6	2						580 550 580	
					3		-	SHALE: grey and brown.	DW	L		LOW 'TC' BIT RESISTANCE
					4		SHALE: grey.					LOW TO MODERATE RESISTANCE
				5				SW	L-M			
				6								
					7							



BOREHOLE LOG

Borehole No.
206
2/2

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 56.2m Date: 2-11-15 Datum: AHD Logged/Checked by: L.M./D.S.												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
▼ ON COMPLET- ION					8			SHALE: grey.	SW	M		MODERATE RESISTANCE
					9			END OF BOREHOLE AT 9.0m				
					10							
					11							
					12							
					13							
					14							



BOREHOLE LOG

Borehole No.
207
1/2

Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD
Date: 2-11-15
Method: SPIRAL AUGER JK500
R.L. Surface: ≈ 59.5m
Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
▼ AFTER 24 HRS						0			FILL: Silty sand, fine to medium grained, light brown, with fine to coarse grained sandstone and igneous gravel, trace of tile and brick fragments.	D			GRASS COVER APPEARS WELL COMPACTED
					N = 14 4,7,7	1		FILL: Silty clay, medium plasticity, dark orange brown, with fine to coarse grained sandstone gravel and cobbles, trace of roots and root fibres.	MC>PL		580 580 550		
					N > 18 3,8,10/ 100mm	2				520 500 550			
					REFUSAL								
					N = 8 2,3,5	3		FILL: Silty clay, high plasticity, dark grey, with fine to medium grained shale gravel.			250 220 240	APPEARS MODERATELY TO WELL COMPACTED	
						4		FILL: Silty clay, high plasticity, grey.					
					N = 8 1,2,6	5				120 150 150	APPEARS MODERATELY COMPACTED		
						6		CH SILTY CLAY: high plasticity, dark orange brown mottled grey.	MC>PL	VSt			
					N = 12 3,4,8	7					350 400 320		

ON COMPLETION

▼



BOREHOLE LOG

Borehole No.
207
2/2

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD			Method: SPIRAL AUGER JK500				R.L. Surface: ≈ 59.5m						
Date: 2-11-15			Logged/Checked by: L.M./D.S.										
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks	
	ES	U50	DB										DS
				N = 8 2,3,5	8		CH	SILTY CLAY: high plasticity, dark orange brown mottled grey.	MC>PL	VSt	250 250 240		
					9		-	SHALE: brown and grey.	DW	VL-L			LOW 'TC' BIT RESISTANCE
					10								
					11			END OF BOREHOLE AT 10.5m					
					12								
					13								
					14								



BOREHOLE LOG

Borehole No.
208
1/2

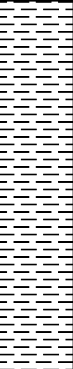
Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD
Date: 2-11-15
Method: SPIRAL AUGER JK500
R.L. Surface: ≈ 60.7m
Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
					0			FILL: Gravelly silty sand, fine to coarse grained, light brown, fine to coarse grained igneous and sandstone gravel.	D			GRASS COVER APPEARS WELL COMPACTED
				N = 13 10,8,5	1							
				N = 5 3,2,3	2			FLL: Silty clay, medium plasticity, dark orange brown, with fine to coarse grained sandstone and igneous gravel, trace of ash.	MC≈PL	H	550 520 550	APPEARS POORLY COMPACTED
				N = 7 4,3,4	3			FILL: Silty clay, high plasticity, dark orange brown and dark grey, trace of ash.	MC>PL	Vst	250 250 250	
				N = 13 3,7,6	4							
					5						250 220 200	APPEARS WELL COMPACTED
				N = 18 4,8,10	6		CH	SILTY CLAY: high plasticity, orange brown mottled grey, trace of iron indurated bands.	MC>PL	Vst	350 350 350	RESIDUAL
					7		-	SHALE: grey and light brown.	DW	L		



BOREHOLE LOG

Borehole No.
208
2/2

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 60.7m Date: 2-11-15 Datum: AHD Logged/Checked by: L.M./D.S.												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB							DS		
					8			SHALE: grey and light brown	DW	L		LOW 'TC' BIT RESISTANCE
										L-M		LOW TO MODERATE RESISTANCE
					9			END OF BOREHOLE AT 9.0m				
					10							
					11							
					12							
					13							
					14							



BOREHOLE LOG

Borehole No.
209
1/2

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD				Method: SPIRAL AUGER JK500				R.L. Surface: ≈ 60.2m					
Date: 6-11-15				Logged/Checked by: L.M./D.S.				Datum: AHD					
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
						0		-	ASPHALTIC CONCRETE: 100mm.t	D	MD		APPEARS WELL COMPACTED
					N = 19 7,10,9	1		FILL: Silty sand, fine to coarse grained, light brown, with fine to coarse grained igneous and sandstone gravel, trace of ash.					
					N = 7 3,4,3	2			L		APPEARS POORLY COMPACTED		
					N = 6 3,3,3	3							
						4		FILL: Silty clay, high plasticity, brown, with fine to coarse grained igneous and sandstone gravel, trace of ash.	MC>PL	VSt	350 300 300	HP READINGS ON REMOULDED SAMPLE	
					N = 9 3,4,5	5	CH	SILTY CLAY: high plasticity, light orange brown, with fine to coarse grained ironstone gravel, trace of ash.	MC>PL				
						6		SHALE: brown.	XW-DW	EL-VL		VERY LOW 'TC' BIT RESISTANCE	
						7		SHALE: grey.	DW				L



BOREHOLE LOG

Borehole No.
209
2/2

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

Date: 6-11-15

Method: SPIRAL AUGER
JK500

R.L. Surface: ≈ 60.2m

Datum: AHD

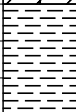
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
									SHALE:grey.	DW	L		
											M-H		MODERATE TO HIGH RESISTANCE
						8			END OF BOREHOLE AT 7.8m				'TC' BIT REFUSAL
						9							
						10							
						11							
						12							
						13							
						14							



BOREHOLE LOG

Borehole No.
210
1/1

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD			Method: SPIRAL AUGER JK500					R.L. Surface: ≈ 60.7m					
Date: 4-11-15			Logged/Checked by: L.M./D.S.					Datum: AHD					
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION	█				N = 18 8,10,8	0		-	ASPHALTIC CONCRETE: 100mm.t FILL: Silty clay, medium plasticity, dark brown, with fine to coarse grained igneous gravel, ash and slag.	MC>PL	VSt		APPEARS WELL COMPACTED
						350 400 380							
	█					1							
	█					2							
	█				N > 25 5,15, 11/100mm REFUSAL	3		CH	SILTY CLAY: high plasticity, red brown.	MC>PL	VSt	350 320 300	RESIDUAL HP TESTING OM REMOULDED SAMPLE
	█							-	SHALE: brown, with iron indurated bands.	XW-DW	EL-VL		VERY LOW TO LOW 'TC' BIT RESISTANCE
										DW	M-H		MODERATE TO HIGH RESISTANCE
									END OF BOREHOLE AT 3.6m				'TC' BIT REFUSAL
						4							
						5							
						6							
						7							



BOREHOLE LOG

Borehole No.
211
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 58.0m												
Date: 3-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty clay, medium plasticity, dark red brown, with roots and root fibres.	MC>PL	H		GRASS COVER APPEARS MODERATELY COMPACTED
											410 400 420	
				N = 7 5,4,3	1			FILL: Silty clay, low plasticity, brown, trace of ash.	MC<PL			APPEARS MODERATELY COMPACTED
				N > 12 3,12/ 150mm		CH	SILTY CLAY: high plasticity, orange brown, with iron indurated bands, trace of roots.	MC>PL			MODERATE TO HIGH 'TC' BIT RESISTANCE	
			REFUSAL	2		-	SANDSTONE: fine to medium grained, brown.	DW	M-H		'TC' BIT REFUSAL	
							END OF BOREHOLE AT 2.0m					
					3							
					4							
					5							
					6							
					7							



BOREHOLE LOG

Borehole No.
212
1/2

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 59.2m													
Date: 3-11-15 Logged/Checked by: L.M./D.S. Datum: AHD													
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks	
	ES	U50	DB										
▼ AFTER 30 MINS					0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres, trace of ash.	MC<PL			GRASS COVER	
				N = 8 3,3,5				FILL: Silty clay, medium plasticity, red brown, with fine to coarse grained sandstone and igneous gravel, trace of ash.	MC>PL		550 500 500	APPEARS MODERATELY COMPACTED	
					1								
				N = 15 2,8,7							350 380 400	APPEARS WELL COMPACTED	
					2								
				N = 15 5,7,8		3	CH	SILTY CLAY: high plasticity, red brown and brown, trace of coarse grained ironstone gravel.	MC>PL	H	500 450 480	RESIDUAL	
					4								
				N = SPT 16/100mm REFUSAL		5	-	SHALE: brown	XW-DW	EL-VL		VERY LOW 'TC' BIT RESISTANCE	
								SHALE: brown and grey.	DW	M		MODERATE RESISTANCE	
						6							
					7								



BOREHOLE LOG

Borehole No.
212
2/2

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 59.2m Date: 3-11-15 Datum: AHD Logged/Checked by: L.M./D.S.												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
								SHALE: grey.	DW	M-H		MODERATE TO HIGH RESISTANCE
					8			END OF BOREHOLE AT 7.4m				'TC' BIT REFUSAL
					9							
					10							
					11							
					12							
					13							
					14							

BOREHOLE LOG

Borehole No.

213

1/1

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

Method: SPIRAL AUGER
JK500

R.L. Surface: N/A

Date: 3-11-15

Datum:

Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty sand, fine grained, light brown, with roots and root fibres.	MC<PL			GRASS COVER
					N = 14 5,7,7			FILL: Silty clay, low plasticity, light brown, with shale gravel, trace of root fibres and ash.	>600 >600 >600			APPEARS WELL COMPACTED	
						1							
					N = 11 2,5,6			FILL; Silty clay, high plasticity, brown.	MC>PL	150 150 150			
					2								
						3		CH	SILTY CLAY: high plasticity, red brown, with fine to coarse grained ironstone gravel.	MC>PL	VSt		RESIDUAL
					N = 16 4,8,8							220 250 250	
						4		-	SANDSTONE: fine to coarse grained, brown.	DW	L		LOW TO MODERATE 'TC' BIT RESISTANCE
											M-h		MODERATE TO HIGH RESISTANCE
									END OF BOREHOLE AT 4.3m				'TC' BIT REFUSAL
						5							
						6							
						7							



BOREHOLE LOG

Borehole No.
214
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 63.0m												
Date: 4-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty clay, low plasticity, dark brown.	MC<PL			GRASS COVER APPEARS POORLY COMPACTED
								FILL: Silty clay, medium plasticity, dark brown, with shale gravel, trace of ash and root fibres.				
				N = 8 4,4,4	1		CH	SILTY CLAY: high plasticity, red and orange brown, with root fibres.	MC>PL	H	450 450 480	RESIDUAL
				N = 13 4,5,8	2							
				N = SPT 12/150mm REFUSAL	3		-	SHALE: brown.	XW	EL-VL		VERY LOW 'TC' BIT RESISTANCE
				4				DW	VL			
								END OF BOREHOLE AT 4.3m				'TC' BIT REFUSAL
					5							
					6							
					7							

BOREHOLE LOG

Borehole No.

215

1/2

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

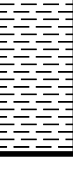
Method: SPIRAL AUGER
JK500

R.L. Surface: ≈ 59.2m

Date: 3-11-15

Datum: AHD

Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, light brown, with roots and root fibres, trace of clay nodules and fine to coarse grained igneous gravel and ash.	MC<PL			GRASS COVER APPEARS MODERATELY COMPACTED
				N = 9 4,4,5	1							
					2			FILL: Silty clay, medium plasticity, red brown and dark brown, trace of ash.	MC>PL	VSt	250 250 250	
					3		CH	FILL: Silty clay, high plasticity, red brown and dark brown, trace of ash.				
				N = 8 3,4,4	4			SILTY CLAY: high plasticity, orange brown mottled grey.	MC>PL	VSt	250 220 220	
					5						400 250 350	
				N = 18 3,6,12	6		-	SHALE: brown and grey.	DW	VL		
					7							VERY LOW 'TC' BIT RESISTANCE



BOREHOLE LOG

Borehole No.
215
2/2

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 59.2m												
Date: 3-11-15 Datum: AHD												
Logged/Checked by: L.M./D.S.												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB							DS		
					8			SHALE: grey.		L-M M		LOW TO MODERATE RESISTANCE
					9			END OF BOREHOLE AT 8.3m				'TC' BIT REFUSAL
					10							
					11							
					12							
					13							
					14							



BOREHOLE LOG

Borehole No.
216
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 59.8m												
Date: 3-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, light brown, with roots and root fibres.	D			GRASS COVER
				N = 9 4,4,5				FILL: Silty clay, high plasticity, brown, with fine to coarse grained ironstone gravel, trace of ash, roots and root fibres.	MC>PL		350 350 300	APPEARS MODERATELY COMPACTED
					1		CH	SILTY CLAY: high plasticity, red brown, trace of root fibres.	MC>PL	VSt		RESIDUAL
				N = 9 2,4,5	2						300 320 300	
							-	SANDSTONE: fine to coarse grained, light brown.	DW	M-H		MODERATE TO HIGH 'TC' BIT RESISTANCE
					3		END OF BOREHOLE AT 2.7m				'TC' BIT REFUSAL	
					4							
					5							
					6							
					7							



BOREHOLE LOG

Borehole No.
217
1/1

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 62.3m													
Date: 4-11-15 Logged/Checked by: L.M./D.S. Datum: AHD													
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks	
	ES	U50	DB										
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres.	D			GRASS COVER	
									FILL: Silty clay, medium plasticity, dark red brown, with fine to coarse grained sandstone gravel, trace of ash.	MC≈PL		600 580 570	APPEARS MOODERATELY COMPACTED
					1		CH	SILTY CLAY: high plasticity, orange brown mottled grey, with root fibres.	MC>PL	St-Vst			RESIDUAL
						2							
					3		-	SANDSTONE: fine to medium grained, brown.	DW	L-M		LOW TO MODERATE 'TC' BIT RESISTANCE	
					4			END OF BOREHOLE AT 4.0m				'TC' BIT REFUSAL	
					5								
					6								
					7								



BOREHOLE LOG

Borehole No.
218
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: SPIRAL AUGER JK500 R.L. Surface: ≈ 62.0m												
Date: 4-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, dark brown.	MC<PL			GRASS COVER
				N = 8 3,4,4	1			FILL: Silty clay, medium plasticity, dark brown, with ironstone gravel, trace of ash.	MC>PL	VSt	350 350 350	APPEARS MODERATELY COMPACTED
				N = 11 5,4,7	2			FILL: Silty clay, high plasticity, red brown, trace of ash.		H	>600 >600 >600	APPEARS WELL COMPACTED
				N = 18 5,7,11	3		CL	SILTY CLAY: medium plasticity, red brown mottled grey, trace of ironstone gravel.	MC>PL	VSt	450 450 400	RESIDUAL
					4		-	SHALE: grey, with iron indurated bands.	DW	L		LOW 'TC' BIT RESISTANCE
					4			END OF BOREHOLE AT 4.0m				'TC' BIT REFUSAL
					5							
					6							
					7							

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TEST PIT LOG

Test Pit No.
220
1/1

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 63.4m													
Date: 5-11-15 Logged/Checked by: L.M./D.S. Datum: AHD													
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres, trace of ash.	D			GRASS COVER
						1			FILL: Silty clay, low plasticity, light brown, with shale gravel, trace of root fibres.	MC>PL		350	
								FILL: Silty clay, high plasticity, light grey and orange brown, with root fibres, trace of ash.			350		
								FILL: Silty clay, high plasticity, dark orange brown, trace of ironstone gravel and ash.			350		
						2			END OF TEST PIT AT 1.7m				LIMIT OF BACKHOE REACH
						3							
						4							
						5							
						6							
						7							

1/1

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TEST PIT LOG

Test Pit No.
222
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 55.3m												
Date: 5-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty clay, medium plasticity, dark brown, with roots and root fibres, trace of ash.	MC≈PL			GRASS COVER
							CH	SILTY CLAY: high plasticity, dark orange brown mottled grey, trace of organic material and ash.	MC>PL	H	>600	RESIDUAL
								as above, but light brown.		Vst	350	
					1		-	SANDSTONE: fine to medium grained, brown.	DW	VL	320	
								END OF TEST PIT AT 1.0m			300	
					2							
					3							
					4							
					5							
					6							
					7							



TEST PIT LOG

Test Pit No.
223
1/1

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

Method: BACKHOE

R.L. Surface: ≈ 53.5m

Date: 5-11-15

Datum: AHD

Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty clay, medium plasticity, dark brown, with roots and root fibres, trace of ash.	MC>PL			GRASS COVER
								CH	SILTY CLAY: high plasticity, light orange brown, trace of ash.	MC>PL	H	400 420 450	
						1			END OF TEST PIT AT 1.0m		VSt	350 350 350	
						2							
						3							
						4							
						5							
						6							
						7							



TEST PIT LOG

Test Pit No.
224
1/1

Client: PAYNTER DIXON

Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT

Location: RESERVOIR ROAD, ARNDELL PARK, NSW

Job No. 28870AD

Method: BACKHOE

R.L. Surface: ≈ 52.6m

Date: 5-11-15

Logged/Checked by: L.M./D.S.

Datum: AHD

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty clay, low plasticity, dark brown, with roots and root fibres.	MC<PL			GRASS COVER
							CH	SILTY CLAY: high plasticity, dark orange brown, trace of root fibres and ash.	MC>PL	VSt	250 300 300	
					1			END OF TEST PIT AT 1.0m			250 300 250	
					2							
					3							
					4							
					5							
					6							
					7							



TEST PIT LOG

Test Pit No.
225
1/1

Client: PAYNTER DIXON													
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT													
Location: RESERVOIR ROAD, ARNDELL PARK, NSW													
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 58.7m													
Date: 5-11-15 Logged/Checked by: L.M./D.S. Datum: AHD													
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty clay, high plasticity, dark orange brown, with igneous and shale gravel, trace of ash and slag.	MC>PL			GRASS COVER
								FILL: Silty sand, fine grained, light brown, with fine to medium grained shale and sandstone gravel, trace of ash and slag.	MC<PL				
						1			FILL: Silty clay, high plasticity, dark brown, with fine to coarse grained sandstone, shale and igneous gravel and cobbles, trace of ash and slag.	MC>PL	VSt	350 320 350	
						2			END OF TEST PIT AT 1.5m				
						3							
						4							
						5							
						6							
						7							



TEST PIT LOG

Test Pit No.
226
1/1

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 60.2m Date: 5-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, dark brown, trace of roots and root fibres and ash.	D			GRASS COVER
					1			FILL: Silty sand, fine to coarse grained, with fine to coarse grained sandstone and shale gravel, trace of ash, root fibres and fibro cement fragments.	MC>PL	VSt	250 250 280 350 300 300	HP TESTING ON REMOULDED SAMPLE
					2			FILL: Silty clay, low plasticity, dark brown, with fine to coarse grained igneous, sandstone and shale gravel, trace of ash, slag, tile, plastic and concrete fragments.				
					3			as above,				
					4			but high plasticity.				
					5			END OF TEST PIT AT 1.5m				
					6							
					7							



TEST PIT LOG

Test Pit No.
227
1/1

Client: PAYNTER DIXON												
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT												
Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 61.4m												
Date: 5-11-15 Logged/Checked by: L.M./D.S. Datum: AHD												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty clay, high plasticity, dark brown, with roots and root fibres, trace of glass, fibro cement fragments, ash/slag and fragments.	MC>PL			GRASS COVER
							CL	SILTY CLAY: medium plasticity, light brown, trace of organic material and ash.	MC>PL	St	100 120 120	
					1			END OF TEST PIT AT 1.0m				
					2							
					3							
					4							
					5							
					6							
					7							



TEST PIT LOG

Test Pit No.
228
1/1

Client: PAYNTER DIXON Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT Location: RESERVOIR ROAD, ARNDELL PARK, NSW												
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 59.1m Date: 5-11-15 Datum: AHD Logged/Checked by: L.M./D.S.												
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
DRY ON COMPLETION					0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres, trace of ash.	D			GRASS COVER
					1			FILL: Silty sand, fine to coarse grained, light brown, with clay nodules, shale gravel, trace of ash, slag and brick fragments.				
									FILL: Silty clay, high plasticity, light grey and red.	MC>PL	VSt	
								END OF TEST PIT AT 1.3m				LIMIT REACH OF BACKHOE
					2							
					3							
					4							
					5							
					6							
					7							



TEST PIT LOG

Test Pit No.
229
1/1

Client: PAYNTER DIXON
Project: PROPOSED SPORTS FACILITY & RESIDENTIAL DEVELOPMENT
Location: RESERVOIR ROAD, ARNDELL PARK, NSW
Job No. 28870AD Method: BACKHOE R.L. Surface: ≈ 59.8m
Date: 5-11-15 Datum: AHD
Logged/Checked by: L.M./D.S.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB	DS									
DRY ON COMPLETION						0			FILL: Silty sand, fine grained, dark brown, with roots and root fibres, trace of ash.	D		>600	GRASS COVER
						1			FILL: Silty clay, high plasticity, light brown, trace of ash.	MC>PL		>600	
									FILL: Silty clay, high plasticity, light grey and orange brown, with shale gravel and cobbles, trace of ash.			350	
									FILL: Silty clay, medium plasticity, dark brown, trace of ash and organic material.			300	
									END OF TEST PIT AT 1.3m				
						2							
						3							
						4							
						5							
						6							
						7							

EXPLANATORY NOTES – ENVIRONMENTAL LOGS

INTRODUCTION

These notes have been provided to supplement the environmental report with regards to drilling and field logging. Not all notes are necessarily relevant to all reports. Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and manmade processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies involve gathering and assimilating limited facts about these characteristics and properties in order to understand the ground on a particular site under certain conditions. These conditions are directly relevant only to the ground at the place where, and time when, the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726, the SAA Site Investigation Code. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geotechnical practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached Unified Soil Classification Table qualified by the grading of other particles present (e.g. sandy clay) as set out below (note that unless stated in the report, the soil classification is based on a qualitative field assessment, not laboratory testing):

Soil Classification	Particle Size
Clay	less than 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2mm
Gravel	2 to 60mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose	less than 4
Loose	4 – 10
Medium dense	10 – 30
Dense	30 – 50
Very Dense	greater than 50

Cohesive soils are classified on the basis of strength (consistency) either by use of hand penetrometer, laboratory testing or engineering examination. The strength terms are defined as shown in the following table:

Classification	Unconfined Compressive Strength kPa
Very Soft	less than 25
Soft	25 – 50
Firm	50 – 100
Stiff	100 – 200
Very Stiff	200 – 400
Hard	Greater than 400
Friable	Strength not attainable – soil crumbles

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'Shale' is used to describe thinly bedded to laminated siltstone.

DRILLING OR EXCAVATION METHODS

The following is a brief summary of drilling and excavation methods currently adopted by the Company, and some comments on their use and application. All except test pits and hand auger drilling require the use of a mechanical drilling rig.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the in-situ soils if it is safe to descend into the pit. The depth of penetration is limited to approximately 3m for a backhoe and up to 6m for an excavator. Limitations of test pits include problems associated with disturbance and difficulty of reinstatement; and the consequent effects on nearby structures. Care must be taken if construction is to be carried out near test pit locations to either properly re-compact the backfill during construction, or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Premature refusal of the hand augers can occur on a variety of materials such as fill, hard clay, gravel or ironstone, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and in-situ testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively lower reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock fragments. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term ‘mud’ encompasses a range of products ranging from bentonite to polymers such as Revert or Biogel. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (e.g. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, an NMLC triple tube core barrel, which gives a core of about 50mm diameter, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as CORE LOSS. The locations of losses are determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the top end of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, “Methods of Testing Soils for Engineering Purposes” – Test F3.1.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the ‘N’ value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as: $N = 13 (4, 6, 7)$
- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as: $N > 30 (15, 30/40\text{mm})$

The results of the test can be related empirically to the engineering properties of the soil. Occasionally, the drop hammer is used to drive 50mm diameter thin walled sample tubes (U50) in clays. In such circumstances, the test results are shown on the borehole logs in brackets.

A modification to the SPT test is where the same driving system is used with a solid 60 tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as “Nc” on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

The borehole or test pit logs presented herein are an interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The attached explanatory notes define the terms and symbols used in preparation of the logs.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than “straight line”

variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open;
- A localised perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after stabilising at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (e.g. bricks, concrete, plastic, slag/ash, steel etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably determine the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density, strength and material type is much greater than with natural soil deposits. If the volume and quality of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classifications and rocks strengths indicated on the environmental logs unless noted in the report.

SITE ANOMALIES

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, EIS should be notified immediately.

GRAPHIC LOG SYMBOLS FOR SOIL AND ROCKS

SOIL	ROCK	DEFECTS AND INCLUSIONS
 FILL	 CONGLOMERATE	 CLAY SEAM
 TOPSOIL	 SANDSTONE	 SHEARED OR CRUSHED SEAM
 CLAY (CL, CH)	 SHALE	 BRECCIATED OR SHATTERED SEAM/ZONE
 SILT (ML, MH)	 SILTSTONE, MUDSTONE, CLAYSTONE	 IRONSTONE GRAVEL
 SAND (SP, SW)	 LIMESTONE	 ORGANIC MATERIAL
 GRAVEL (GP, GW)	 PHYLLITE, SCHIST	
 SANDY CLAY (CL, CH)	 TUFF	
 SILTY CLAY (CL, CH)	 GRANITE, GABBRO	
 CLAYEY SAND (SC)	 DOLERITE, DIORITE	
 SILTY SAND (SM)	 BASALT, ANDESITE	
 GRAVELLY CLAY (CL, CH)	 QUARTZITE	
 CLAYEY GRAVEL (GC)		
 SANDY SILT (ML)		
 PEAT AND ORGANIC SOILS		
		OTHER MATERIALS
		 CONCRETE
		 BITUMINOUS CONCRETE, COAL
		 COLLUVIUM

Field Identification Procedures (Excluding particles larger than 75 μm and basing fractions on estimated weights)				Group Symbols	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria	
Coarse-grained soils More than half of material is larger than 75 μm sieve size ^b (The 75 μm sieve size is about the smallest particle visible to naked eye)	Gravels More than half of coarse fraction is larger than 4 mm sieve size	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	GW	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: Silty sand, gravelly; about 20% hard, angular gravel particles 12 mm maximum size; rounded and subangular sand grains coarse to fine, about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (SM)	$C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for GW Atterberg limits below "A" line, or PI less than 4 Atterberg limits above "A" line, with PI greater than 7 Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols	
			Predominantly one size or a range of sizes with some intermediate sizes missing	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines			
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see ML below)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures			
	Sands More than half of coarse fraction is smaller than 4 mm sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes	SW	Well graded sands, gravelly sands, little or no fines			
			Predominantly one size or a range of sizes with some intermediate sizes missing	SP	Poorly graded sands, gravelly sands, little or no fines			
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see ML below)	SM	Silty sands, poorly graded sand-silt mixtures			
Fine-grained soils More than half of material is smaller than 75 μm sieve size (The 75 μm sieve size is about the smallest particle visible to naked eye)	Identification Procedures on Fraction Smaller than 380 μm Sieve Size			SC	Clayey sands, poorly graded sand-clay mixtures		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for SP Atterberg limits below "A" line or PI less than 5 Atterberg limits below "A" line with PI greater than 7 Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols	
	Silt and clays liquid limit less than 50	Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity		Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: Clayey silt, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (ML)
			None to slight	Quick to slow	None			
			Medium to high	None to very slow	Medium			
		Silt and clays liquid limit greater than 50	Slight to medium	Slow	Slight			
			Slight to medium	Slow to none	Slight to medium			
			High to very high	None	High			
	Highly Organic Soils			CH	Inorganic clays of high plasticity, fat clays			
	Medium to high		None to very slow	Slight to medium				
	OH		Organic clays of medium to high plasticity					
Readily identified by colour, odour, spongy feel and frequently by fibrous texture			PI	Peat and other highly organic soils				

Determine percentages of gravel and sand from grain size curve

Depending on percentage of fines (fraction smaller than 75 μm sieve size) coarse grained soils are classified as follows:

GW, GP, SW, SP
Less than 5%
More than 5%
5% to 12%
Borderline cases requiring use of dual symbols

Comparing soils at equal liquid limit

Toughness and dry strength increase with increasing plasticity index

A line

CH

CL

OL

OH

MH

ML

CL-MH

OL-MH

OH-MH

Plasticity index

Liquid limit

Plasticity chart for laboratory classification of fine grained soils

- Note: 1 Soils possessing characteristics of two groups are designated by combinations of group symbols (eg. GW-GC, well graded gravel-sand mixture with clay fines).
 2 Soils with liquid limits of the order of 35 to 50 may be visually classified as being of medium plasticity.

LOG SYMBOLS

LOG COLUMN	SYMBOL		DEFINITION	
Groundwater Record			Standing water level. Time delay following completion of drilling may be shown.	
			Extent of borehole collapse shortly after drilling.	
			Groundwater seepage into borehole or excavation noted during drilling or excavation.	
Samples	ES	Soil sample taken over depth indicated, for environmental analysis.		
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.		
	DB	Bulk disturbed sample taken over depth indicated.		
	DS	Small disturbed bag sample taken over depth indicated.		
	ASB	Soil sample taken over depth indicated, for asbestos screening.		
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.		
	SAL	Soil sample taken over depth indicated, for salinity analysis.		
Field Tests	N = 17 4, 7, 10		Standard Penetration Test (SPT) performed between depths indicated by lines. Individual show blows per 150mm penetration. 'R' as noted below.	
	N _c =	5	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60 degree solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.	
		7		
		3 R		
VNS = 25		Vane shear reading in kPa of Undrained Shear Strength.		
PID = 100		Photoionisation detector reading in ppm (Soil sample heads pace test).		
Moisture (Cohesive Soils)	MC>PL	Moisture content estimated to be greater than plastic limit.		
(Cohesionless)	MC≈PL	Moisture content estimated to be approximately equal to plastic limit.		
	MC<PL	Moisture content estimated to be less than plastic limit.		
	D	DRY	Runs freely through fingers.	
	M	MOIST	Does not run freely but no free water visible on soil surface.	
	W	WET	Free water visible on soil surface.	
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – Unconfined compressive strength less than 25kPa		
	S	SOFT – Unconfined compressive strength 25-50kPa		
	F	FIRM – Unconfined compressive strength 50-100kPa		
	St	STIFF – Unconfined compressive strength 100- 200kPa		
	VSt	VERY STIFF – Unconfined compressive strength 200- 400kPa		
	H	HARD – Unconfined compressive strength greater than 400kPa		
	()	Bracketed symbol indicates estimated consistency based on tactile examination or other tests.		
Density Index/ Relative Density (Cohesionless Soils)	VL	Density Index (ID) Range (%)	SPT 'N' Value Range (Blows/300mm)	
		Very Loose	< 15	0-4
	L	Loose	15-35	4-10
	MD	Medium Dense	35-65	10-30
	D	Dense	65-85	30-50
	VD	Very Dense	> 85	> 50
	()	Bracketed symbol indicates estimated density based on ease of drilling or other tests.		
Hand Penetrometer Readings	300	Numbers indicate individual test results in kPa on representative undisturbed material unless noted otherwise		
	250			
Remarks	'V' bit	Hardened steel 'V' shaped bit.		
	'TC' bit	Tungsten carbide wing bit.		
	T ₆₀	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.		

LOG SYMBOLS CONTINUED

ROCK STRENGTH

Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the bedding. The test procedure is described by the International Journal of Rock Mechanics, Mining and Geomechanics Abstract Volume 22, No 2, 1985.

TERM	SYMBOL	Is (50) MPa	FIELD GUIDE
Extremely Low:	EL	0.03	Easily remoulded by hand to a material with soil properties.
Very Low:	VL	0.1	May be crumbled in the hand. Sandstone is "sugary" and friable.
Low:	L	0.3	A piece of core 150 mm long x 50mm dia. may be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.
Medium Strength:	M	1	A piece of core 150 mm long x 50mm dia. can be broken by hand with difficulty. Readily scored with knife.
High:	H	3	A piece of core 150 mm long x 50mm dia. core cannot be broken by hand, can be slightly scratched or scored with knife; rock rings under hammer.
Very High:	VH	10	A piece of core 150 mm long x 50mm dia. may be broken with hand-held pick after more than one blow. Cannot be scratched with pen knife; rock rings under hammer.
Extremely High:	EH		A piece of core 150 mm long x 50mm dia. is very difficult to break with hand-held hammer. Rings when struck with a hammer.

ROCK STRENGTH

ABBREVIATION	DESCRIPTION	NOTES
Be	Bedding Plane Parting	Defect orientations measured relative to the normal to (i.e. relative to horizontal for vertical holes)
CS	Clay Seam	
J	Joint	
P	Planar	
Un	Undulating	
S	Smooth	
R	Rough	
IS	Iron stained	
XWS	Extremely Weathered Seam	
Cr	Crushed Seam	
60t	Thickness of defect in millimetres	

Appendix E: Laboratory Report/s & COC Documents



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CERTIFICATE OF ANALYSIS

137123

Client:

Environmental Investigation Services

PO Box 976

North Ryde BC

NSW 1670

Attention: Vittal Boggaram

Sample log in details:

Your Reference:

E28870KB, Arndell Park

No. of samples:

102soils, 2materials and 2waters

Date samples received / completed instructions received

09/11/2015 / 09/11/2015

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

16/11/15 / 16/11/15

Date of Preliminary Report:

Not Issued

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Accredited for compliance with ISO/IEC 17025.

Tests not covered by NATA are denoted with *.

Results Approved By:


Jacinta Hurst
Laboratory Manager

Envirolab Reference: 137123

Revision No: R 00



vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	104	106	108	107	108

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	137123-11	137123-12	137123-13	137123-14	137123-15
Your Reference	-----	BH206	BH206	BH207	BH207	BH207
Depth	-----	0.2-0.4	2.0-2.2	0.2-0.4	1.2-1.4	2.8-3.0
Date Sampled		2/11/2015	2/11/2015	2/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	104	104	112	106	112

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-17	137123-18	137123-19	137123-21	137123-22
Our Reference:	-----	BH208	BH208	BH208	BH209	BH209
Your Reference	-----	0.2-0.4	1.6-2.0	3.6-4.0	0.1-0.2	1.0-1.2
Depth		2/11/2015	2/11/2015	2/11/2015	6/11/2015	6/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	111	108	112	105

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-23	137123-25	137123-26	137123-27	137123-29
Our Reference:	-----	BH209	BH210	BH210	BH210	BH211
Your Reference	-----	3.6-3.8	0.1-0.4	1.0-1.3	1.9-2.1	0-0.2
Depth		6/11/2015	4/11/2015	4/11/2015	4/11/2015	3/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	112	113	121	113

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-30	137123-32	137123-33	137123-34	137123-37
Our Reference:	-----	BH211	BH212	BH212	BH212	BH213
Your Reference	-----	0.9-1.2	0-0.2	1.0-1.2	2.0-2.2	0-0.3
Depth		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	111	111	111	116	117

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-38	137123-39	137123-41	137123-42	137123-44
Our Reference:	-----	BH213	BH213	BH214	BH214	BH215
Your Reference	-----	1.0-1.2	2.0-2.2	0-0.4	1.0-1.3	0-0.2
Depth		3/11/2015	3/11/2015	4/11/2015	4/11/2015	3/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	116	118	113	113

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-45	137123-46	137123-47	137123-49	137123-50
Our Reference:	-----	BH215	BH215	BH215	BH216	BH216
Your Reference	-----	1.0-1.2	2.0-2.2	2.8-3.0	0-0.2	1.0-1.3
Depth		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	118	117	116	118	109

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-52	137123-53	137123-55	137123-56	137123-57
Our Reference:	-----	BH217	BH217	BH218	BH218	BH218
Your Reference	-----	0-0.3	0.9-1.2	0-0.3	1.9-1.2	1.8-2.1
Depth		4/11/2015	4/11/2015	4/11/2015	4/11/2015	4/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	12/11/2015	12/11/2015	12/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	116	113	113	114	109

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-59 BH219 0-0.2 4/11/2015 soil	137123-61 BH220 0-0.1 5/11/2015 soil	137123-63 BH220 0.4-0.5 5/11/2015 soil	137123-65 BH220 1.5-1.7 5/11/2015 soil	137123-66 BH221 0.1-0.2 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	115	116	116	114	114

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-68 BH222 0-0.2 5/11/2015 soil	137123-70 BH223 0-0.2 5/11/2015 soil	137123-72 BH224 0-0.2 5/11/2015 soil	137123-74 BH225 0-0.2 5/11/2015 soil	137123-76 BH225 0.7-0.8 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	117	116	109	109	112

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-77	137123-78	137123-80	137123-82	137123-83
Our Reference:	-----	BH225	BH226	BH226	BH226	BH227
Your Reference	-----	1.1-1.3	0-0.2	0.4-0.5	1.3-1.5	0-0.2
Depth		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	116	116	117	115

vTRH(C6-C10)/BTEXN in Soil	UNITS	137123-85	137123-89	137123-93	137123-94	137123-95
Our Reference:	-----	BH228	BH229	DupJS1	DupJS2	DupJS3
Your Reference	-----	0.1-0.2	0-0.1	-	-	-
Depth		5/11/2015	5/11/2015	2/11/2015	3/11/2015	5/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	119	116	111	116	117

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	137123-100	137123-101	137123-102	137123-103	137123-104
Your Reference	-----	TB1	TB2	TB3	TB4	TB5
Depth	-----	-	-	-	-	-
Date Sampled		2/11/2015	3/11/2015	4/11/2015	5/11/2015	6/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	121	123	122	121	123

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-1 BH201 0.1-0.2 6/11/2015 soil	137123-3 BH202 0.1-0.2 6/11/2015 soil	137123-5 BH203 0.1-0.2 6/11/2015 soil	137123-7 BH204 0-0.1 2/11/2015 soil	137123-9 BH205 0-0.2 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	78	78	81	81

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-11 BH206 0.2-0.4 2/11/2015 soil	137123-12 BH206 2.0-2.2 2/11/2015 soil	137123-13 BH207 0.2-0.4 2/11/2015 soil	137123-14 BH207 1.2-1.4 2/11/2015 soil	137123-15 BH207 2.8-3.0 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	11/11/2015	10/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	160
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	290
Surrogate o-Terphenyl	%	75	76	78	75	79

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-17 BH208 0.2-0.4 2/11/2015 soil	137123-18 BH208 1.6-2.0 2/11/2015 soil	137123-19 BH208 3.6-4.0 2/11/2015 soil	137123-21 BH209 0.1-0.2 6/11/2015 soil	137123-22 BH209 1.0-1.2 6/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	77	75	75	78

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-23 BH209 3.6-3.8 6/11/2015 soil	137123-25 BH210 0.1-0.4 4/11/2015 soil	137123-26 BH210 1.0-1.3 4/11/2015 soil	137123-27 BH210 1.9-2.1 4/11/2015 soil	137123-29 BH211 0-0.2 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	74	76	82	76	79

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	137123-30	137123-32	137123-33	137123-34	137123-37
Your Reference	-----	BH211	BH212	BH212	BH212	BH213
Depth	-----	0.9-1.2	0-0.2	1.0-1.2	2.0-2.2	0-0.3
Date Sampled		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	77	80	78	75	76

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	137123-38	137123-39	137123-41	137123-42	137123-44
Your Reference	-----	BH213	BH213	BH214	BH214	BH215
Depth	-----	1.0-1.2	2.0-2.2	0-0.4	1.0-1.3	0-0.2
Date Sampled		3/11/2015	3/11/2015	4/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	76	78	79	75	76

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-45 BH215 1.0-1.2 3/11/2015 soil	137123-46 BH215 2.0-2.2 3/11/2015 soil	137123-47 BH215 2.8-3.0 3/11/2015 soil	137123-49 BH216 0-0.2 3/11/2015 soil	137123-50 BH216 1.0-1.3 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	78	77	77	78	75

svTRH (C10-C40) in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-52 BH217 0-0.3 4/11/2015 soil	137123-53 BH217 0.9-1.2 4/11/2015 soil	137123-55 BH218 0-0.3 4/11/2015 soil	137123-56 BH218 1.9-1.2 4/11/2015 soil	137123-57 BH218 1.8-2.1 4/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	77	75	78	75	78

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	137123-59	137123-61	137123-63	137123-65	137123-66
Your Reference	-----	BH219	BH220	BH220	BH220	BH221
Depth	-----	0-0.2	0-0.1	0.4-0.5	1.5-1.7	0.1-0.2
Date Sampled		4/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	76	78	84	80	84

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	137123-68	137123-70	137123-72	137123-74	137123-76
Your Reference	-----	BH222	BH223	BH224	BH225	BH225
Depth	-----	0-0.2	0-0.2	0-0.2	0-0.2	0.7-0.8
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	79	80	80	79

svTRH (C10-C40) in Soil	UNITS	137123-77	137123-78	137123-80	137123-82	137123-83
Our Reference:	-----	BH225	BH226	BH226	BH226	BH227
Your Reference	-----	1.1-1.3	0-0.2	0.4-0.5	1.3-1.5	0-0.2
Depth		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	110	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	600	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	220	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	640	<100	<100	<100
Surrogate o-Terphenyl	%	78	82	83	81	85

svTRH (C10-C40) in Soil	UNITS	137123-85	137123-89	137123-93	137123-94	137123-95
Our Reference:	-----	BH228	BH229	DupJS1	DupJS2	DupJS3
Your Reference	-----	0.1-0.2	0-0.1	-	-	-
Depth		5/11/2015	5/11/2015	2/11/2015	3/11/2015	5/11/2015
Date Sampled		soil	soil	soil	soil	soil
Type of sample						
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	79	81	80	81

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-1 BH201 0.1-0.2 6/11/2015 soil	137123-3 BH202 0.1-0.2 6/11/2015 soil	137123-5 BH203 0.1-0.2 6/11/2015 soil	137123-7 BH204 0-0.1 2/11/2015 soil	137123-9 BH205 0-0.2 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	109	88	101	95	100

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-11 BH206 0.2-0.4 2/11/2015 soil	137123-12 BH206 2.0-2.2 2/11/2015 soil	137123-13 BH207 0.2-0.4 2/11/2015 soil	137123-14 BH207 1.2-1.4 2/11/2015 soil	137123-15 BH207 2.8-3.0 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	1.5	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	101	99	103	95	95

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-17 BH208 0.2-0.4 2/11/2015 soil	137123-18 BH208 1.6-2.0 2/11/2015 soil	137123-19 BH208 3.6-4.0 2/11/2015 soil	137123-21 BH209 0.1-0.2 6/11/2015 soil	137123-22 BH209 1.0-1.2 6/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	1.7	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	1.8	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.7	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.9	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.7	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.60	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.8	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.8	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.9	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	8.1	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	100	99	98	101	100

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-23 BH209 3.6-3.8 6/11/2015 soil	137123-25 BH210 0.1-0.4 4/11/2015 soil	137123-26 BH210 1.0-1.3 4/11/2015 soil	137123-27 BH210 1.9-2.1 4/11/2015 soil	137123-29 BH211 0-0.2 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.07	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	0.070	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	93	100	95	101	95

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-30 BH211 0.9-1.2 3/11/2015 soil	137123-32 BH212 0-0.2 3/11/2015 soil	137123-33 BH212 1.0-1.2 3/11/2015 soil	137123-34 BH212 2.0-2.2 3/11/2015 soil	137123-37 BH213 0-0.3 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	92	91	92	90	94

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-38 BH213 1.0-1.2 3/11/2015 soil	137123-39 BH213 2.0-2.2 3/11/2015 soil	137123-41 BH214 0-0.4 4/11/2015 soil	137123-42 BH214 1.0-1.3 4/11/2015 soil	137123-44 BH215 0-0.2 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	93	96	94	88	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-45 BH215 1.0-1.2 3/11/2015 soil	137123-46 BH215 2.0-2.2 3/11/2015 soil	137123-47 BH215 2.8-3.0 3/11/2015 soil	137123-49 BH216 0-0.2 3/11/2015 soil	137123-50 BH216 1.0-1.3 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	92	87	84	92	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-52 BH217 0-0.3 4/11/2015 soil	137123-53 BH217 0.9-1.2 4/11/2015 soil	137123-55 BH218 0-0.3 4/11/2015 soil	137123-56 BH218 1.9-1.2 4/11/2015 soil	137123-57 BH218 1.8-2.1 4/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	85	89	90	92	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-59 BH219 0-0.2 4/11/2015 soil	137123-61 BH220 0-0.1 5/11/2015 soil	137123-63 BH220 0.4-0.5 5/11/2015 soil	137123-65 BH220 1.5-1.7 5/11/2015 soil	137123-66 BH221 0.1-0.2 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	89	90	90	90	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-68 BH222 0-0.2 5/11/2015 soil	137123-70 BH223 0-0.2 5/11/2015 soil	137123-72 BH224 0-0.2 5/11/2015 soil	137123-74 BH225 0-0.2 5/11/2015 soil	137123-76 BH225 0.7-0.8 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	2.9
Surrogate p-Terphenyl-d14	%	87	87	89	91	91

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-77 BH225 1.1-1.3 5/11/2015 soil	137123-78 BH226 0-0.2 5/11/2015 soil	137123-80 BH226 0.4-0.5 5/11/2015 soil	137123-82 BH226 1.3-1.5 5/11/2015 soil	137123-83 BH227 0-0.2 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	0.25	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	89	83	88	90	92

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-85 BH228 0.1-0.2 5/11/2015 soil	137123-89 BH229 0-0.1 5/11/2015 soil	137123-93 DupJS1 - 2/11/2015 soil	137123-94 DupJS2 - 3/11/2015 soil	137123-95 DupJS3 - 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	88	89	90	88	87

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	94	93	90	92

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-11	137123-13	137123-17	137123-21	137123-25
Your Reference	-----	BH206	BH207	BH208	BH209	BH210
Depth	-----	0.2-0.4	0.2-0.4	0.2-0.4	0.1-0.2	0.1-0.4
Date Sampled		2/11/2015	2/11/2015	2/11/2015	6/11/2015	4/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	95	92	94	95

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-29	137123-32	137123-37	137123-41	137123-44
Your Reference	-----	BH211	BH212	BH213	BH214	BH215
Depth	-----	0-0.2	0-0.2	0-0.3	0-0.4	0-0.2
Date Sampled		3/11/2015	3/11/2015	3/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	94	89	92	103

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-49	137123-52	137123-55	137123-59	137123-61
Your Reference	-----	BH216	BH217	BH218	BH219	BH220
Depth	-----	0-0.2	0-0.3	0-0.3	0-0.2	0-0.1
Date Sampled		3/11/2015	4/11/2015	4/11/2015	4/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	12/11/2015	12/11/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	91	93	91	95

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-66	137123-68	137123-70	137123-72	137123-74
Your Reference	-----	BH221	BH222	BH223	BH224	BH225
Depth	-----	0.1-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	94	92	96	94

Organochlorine Pesticides in soil						
Our Reference:	UNITS	137123-78	137123-83	137123-85	137123-89	137123-93
Your Reference	-----	BH226	BH227	BH228	BH229	DupJS1
Depth	-----	0-0.2	0-0.2	0.1-0.2	0-0.1	-
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
HCBC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	97	92	99	94

Organochlorine Pesticides in soil			
Our Reference:	UNITS	137123-94	137123-95
Your Reference	-----	DupJS2	DupJS3
Depth	-----	-	-
Date Sampled		3/11/2015	5/11/2015
Type of sample		soil	soil
Date extracted	-	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	90	94

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	94	93	90	92

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-11	137123-13	137123-17	137123-21	137123-25
Your Reference	-----	BH206	BH207	BH208	BH209	BH210
Depth	-----	0.2-0.4	0.2-0.4	0.2-0.4	0.1-0.2	0.1-0.4
Date Sampled		2/11/2015	2/11/2015	2/11/2015	6/11/2015	4/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	95	92	94	95

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-29	137123-32	137123-37	137123-41	137123-44
Your Reference	-----	BH211	BH212	BH213	BH214	BH215
Depth	-----	0-0.2	0-0.2	0-0.3	0-0.4	0-0.2
Date Sampled		3/11/2015	3/11/2015	3/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	94	89	92	103

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-49	137123-52	137123-55	137123-59	137123-61
Your Reference	-----	BH216	BH217	BH218	BH219	BH220
Depth	-----	0-0.2	0-0.3	0-0.3	0-0.2	0-0.1
Date Sampled		3/11/2015	4/11/2015	4/11/2015	4/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	12/11/2015	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	91	93	91	95

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-66	137123-68	137123-70	137123-72	137123-74
Your Reference	-----	BH221	BH222	BH223	BH224	BH225
Depth	-----	0.1-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	94	92	96	94

Organophosphorus Pesticides						
Our Reference:	UNITS	137123-78	137123-83	137123-85	137123-89	137123-93
Your Reference	-----	BH226	BH227	BH228	BH229	DupJS1
Depth	-----	0-0.2	0-0.2	0.1-0.2	0-0.1	-
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	97	92	99	94

Organophosphorus Pesticides			
Our Reference:	UNITS	137123-94	137123-95
Your Reference	-----	DupJS2	DupJS3
Depth	-----	-	-
Date Sampled		3/11/2015	5/11/2015
Type of sample		soil	soil
Date extracted	-	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Surrogate TCMX	%	90	94

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-1 BH201 0.1-0.2 6/11/2015 soil	137123-3 BH202 0.1-0.2 6/11/2015 soil	137123-5 BH203 0.1-0.2 6/11/2015 soil	137123-7 BH204 0-0.1 2/11/2015 soil	137123-9 BH205 0-0.2 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	95	94	93	90	92

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-11 BH206 0.2-0.4 2/11/2015 soil	137123-13 BH207 0.2-0.4 2/11/2015 soil	137123-17 BH208 0.2-0.4 2/11/2015 soil	137123-21 BH209 0.1-0.2 6/11/2015 soil	137123-25 BH210 0.1-0.4 4/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	93	95	92	94	95

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-29 BH211 0-0.2 3/11/2015 soil	137123-32 BH212 0-0.2 3/11/2015 soil	137123-37 BH213 0-0.3 3/11/2015 soil	137123-41 BH214 0-0.4 4/11/2015 soil	137123-44 BH215 0-0.2 3/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	93	94	89	92	103

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-49 BH216 0-0.2 3/11/2015 soil	137123-52 BH217 0-0.3 4/11/2015 soil	137123-55 BH218 0-0.3 4/11/2015 soil	137123-59 BH219 0-0.2 4/11/2015 soil	137123-61 BH220 0-0.1 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	12/11/2015	12/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	91	93	91	95

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-66 BH221 0.1-0.2 5/11/2015 soil	137123-68 BH222 0-0.2 5/11/2015 soil	137123-70 BH223 0-0.2 5/11/2015 soil	137123-72 BH224 0-0.2 5/11/2015 soil	137123-74 BH225 0-0.2 5/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	92	94	92	96	94

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-78 BH226 0-0.2 5/11/2015 soil	137123-83 BH227 0-0.2 5/11/2015 soil	137123-85 BH228 0.1-0.2 5/11/2015 soil	137123-89 BH229 0-0.1 5/11/2015 soil	137123-93 DupJS1 - 2/11/2015 soil
Date extracted	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	85	97	92	99	94

PCBs in Soil			
Our Reference:	UNITS	137123-94	137123-95
Your Reference	-----	DupJS2	DupJS3
Depth	-----	-	-
Date Sampled		3/11/2015	5/11/2015
Type of sample		soil	soil
Date extracted	-	10/11/2015	10/11/2015
Date analysed	-	12/11/2015	12/11/2015
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	90	94

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	6	11	18	6	6
Cadmium	mg/kg	<0.4	<0.4	0.5	<0.4	<0.4
Chromium	mg/kg	18	25	20	14	13
Copper	mg/kg	20	11	30	13	20
Lead	mg/kg	17	17	92	29	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	3	16	6	10
Zinc	mg/kg	25	14	400	59	58

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-11	137123-12	137123-13	137123-14	137123-15
Your Reference	-----	BH206	BH206	BH207	BH207	BH207
Depth	-----	0.2-0.4	2.0-2.2	0.2-0.4	1.2-1.4	2.8-3.0
Date Sampled		2/11/2015	2/11/2015	2/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	6	<4	5	9	9
Cadmium	mg/kg	0.5	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	15	16	20	19
Copper	mg/kg	29	31	31	23	37
Lead	mg/kg	24	13	14	18	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	13	29	12	21
Zinc	mg/kg	99	46	46	52	64

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-17	137123-18	137123-19	137123-21	137123-22
Your Reference	-----	BH208	BH208	BH208	BH209	BH209
Depth	-----	0.2-0.4	1.6-2.0	3.6-4.0	0.1-0.2	1.0-1.2
Date Sampled		2/11/2015	2/11/2015	2/11/2015	6/11/2015	6/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	35	9	9	9	20
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	15	19	18	13	8
Copper	mg/kg	41	39	21	40	52
Lead	mg/kg	19	26	25	15	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	21	21	10	19	22
Zinc	mg/kg	71	62	29	69	81

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-23	137123-25	137123-26	137123-27	137123-29
Your Reference	-----	BH209	BH210	BH210	BH210	BH211
Depth	-----	3.6-3.8	0.1-0.4	1.0-1.3	1.9-2.1	0-0.2
Date Sampled		6/11/2015	4/11/2015	4/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	8	6	18	17	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	14	10	8	17
Copper	mg/kg	18	26	42	42	25
Lead	mg/kg	22	13	13	15	31
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	14	26	20	12
Zinc	mg/kg	20	38	69	70	69

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-30	137123-32	137123-33	137123-34	137123-37
Your Reference	-----	BH211	BH212	BH212	BH212	BH213
Depth	-----	0.9-1.2	0-0.2	1.0-1.2	2.0-2.2	0-0.3
Date Sampled		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	12	7	7	8	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	11	16	14	13
Copper	mg/kg	30	18	38	39	19
Lead	mg/kg	15	20	20	13	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	33	9	29	20	11
Zinc	mg/kg	61	89	85	93	83

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-38	137123-39	137123-41	137123-42	137123-44
Your Reference	-----	BH213	BH213	BH214	BH214	BH215
Depth	-----	1.0-1.2	2.0-2.2	0-0.4	1.0-1.3	0-0.2
Date Sampled		3/11/2015	3/11/2015	4/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	13	5	6	13	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	13	19	12	11
Copper	mg/kg	38	17	110	37	24
Lead	mg/kg	13	14	26	18	24
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	22	8	10	17	13
Zinc	mg/kg	80	25	94	84	86

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-45	137123-46	137123-47	137123-49	137123-50
Your Reference	-----	BH215	BH215	BH215	BH216	BH216
Depth	-----	1.0-1.2	2.0-2.2	2.8-3.0	0-0.2	1.0-1.3
Date Sampled		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	10	6	12	4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	10	18	10	18
Copper	mg/kg	39	16	19	12	14
Lead	mg/kg	16	10	13	16	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	25	3	9	6	9
Zinc	mg/kg	79	19	28	51	22

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-52	137123-53	137123-55	137123-56	137123-57
Your Reference	-----	BH217	BH217	BH218	BH218	BH218
Depth	-----	0-0.3	0.9-1.2	0-0.3	1.9-1.2	1.8-2.1
Date Sampled		4/11/2015	4/11/2015	4/11/2015	4/11/2015	4/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	10	8	11	9	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	22	9	20	19
Copper	mg/kg	17	17	46	21	20
Lead	mg/kg	30	16	18	17	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	10	25	9	11
Zinc	mg/kg	36	26	98	33	34

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-59	137123-61	137123-63	137123-65	137123-66
Your Reference	-----	BH219	BH220	BH220	BH220	BH221
Depth	-----	0-0.2	0-0.1	0.4-0.5	1.5-1.7	0.1-0.2
Date Sampled		4/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	<4	4	5	10	11
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	11	12	26	22
Copper	mg/kg	11	13	15	12	11
Lead	mg/kg	12	26	12	21	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	7	4	6	4
Zinc	mg/kg	35	56	18	19	27

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-68	137123-70	137123-72	137123-74	137123-76
Your Reference	-----	BH222	BH223	BH224	BH225	BH225
Depth	-----	0-0.2	0-0.2	0-0.2	0-0.2	0.7-0.8
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	13	10	5	10	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	19	19	15	17	14
Copper	mg/kg	23	18	13	29	36
Lead	mg/kg	39	36	19	48	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	8	6	17	20
Zinc	mg/kg	89	60	25	91	67

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-77	137123-78	137123-80	137123-82	137123-83
Your Reference	-----	BH225	BH226	BH226	BH226	BH227
Depth	-----	1.1-1.3	0-0.2	0.4-0.5	1.3-1.5	0-0.2
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	5	<4	6	7	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	9	19	12	13
Copper	mg/kg	33	15	30	16	20
Lead	mg/kg	28	29	29	10	35
Mercury	mg/kg	<0.1	0.1	0.3	<0.1	<0.1
Nickel	mg/kg	22	6	22	5	10
Zinc	mg/kg	77	76	68	24	160

Acid Extractable metals in soil						
Our Reference:	UNITS	137123-85	137123-89	137123-93	137123-94	137123-95
Your Reference	-----	BH228	BH229	DupJS1	DupJS2	DupJS3
Depth	-----	0.1-0.2	0-0.1	-	-	-
Date Sampled		5/11/2015	5/11/2015	2/11/2015	3/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Arsenic	mg/kg	11	7	6	8	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	19	13	13	11	21
Copper	mg/kg	23	15	15	24	11
Lead	mg/kg	22	20	20	28	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	15	9	8	13	5
Zinc	mg/kg	67	53	33	87	29

Moisture						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	15	11	18	18	26

Moisture						
Our Reference:	UNITS	137123-11	137123-12	137123-13	137123-14	137123-15
Your Reference	-----	BH206	BH206	BH207	BH207	BH207
Depth	-----	0.2-0.4	2.0-2.2	0.2-0.4	1.2-1.4	2.8-3.0
Date Sampled		2/11/2015	2/11/2015	2/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	16	15	7.6	15	13

Moisture						
Our Reference:	UNITS	137123-17	137123-18	137123-19	137123-21	137123-22
Your Reference	-----	BH208	BH208	BH208	BH209	BH209
Depth	-----	0.2-0.4	1.6-2.0	3.6-4.0	0.1-0.2	1.0-1.2
Date Sampled		2/11/2015	2/11/2015	2/11/2015	6/11/2015	6/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	12	15	19	16	9.4

Moisture						
Our Reference:	UNITS	137123-23	137123-25	137123-26	137123-27	137123-29
Your Reference	-----	BH209	BH210	BH210	BH210	BH211
Depth	-----	3.6-3.8	0.1-0.4	1.0-1.3	1.9-2.1	0-0.2
Date Sampled		6/11/2015	4/11/2015	4/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	19	14	6.8	10	21

Moisture						
Our Reference:	UNITS	137123-30	137123-32	137123-33	137123-34	137123-37
Your Reference	-----	BH211	BH212	BH212	BH212	BH213
Depth	-----	0.9-1.2	0-0.2	1.0-1.2	2.0-2.2	0-0.3
Date Sampled		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	23	18	14	17	12

Moisture						
Our Reference:	UNITS	137123-38	137123-39	137123-41	137123-42	137123-44
Your Reference	-----	BH213	BH213	BH214	BH214	BH215
Depth	-----	1.0-1.2	2.0-2.2	0-0.4	1.0-1.3	0-0.2
Date Sampled		3/11/2015	3/11/2015	4/11/2015	4/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	9.6	15	12	16	16

Moisture						
Our Reference:	UNITS	137123-45	137123-46	137123-47	137123-49	137123-50
Your Reference	-----	BH215	BH215	BH215	BH216	BH216
Depth	-----	1.0-1.2	2.0-2.2	2.8-3.0	0-0.2	1.0-1.3
Date Sampled		3/11/2015	3/11/2015	3/11/2015	3/11/2015	3/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	12	19	15	19	18

Moisture						
Our Reference:	UNITS	137123-52	137123-53	137123-55	137123-56	137123-57
Your Reference	-----	BH217	BH217	BH218	BH218	BH218
Depth	-----	0-0.3	0.9-1.2	0-0.3	1.9-1.2	1.8-2.1
Date Sampled		4/11/2015	4/11/2015	4/11/2015	4/11/2015	4/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	14	21	11	17	17

Moisture						
Our Reference:	UNITS	137123-59	137123-61	137123-63	137123-65	137123-66
Your Reference	-----	BH219	BH220	BH220	BH220	BH221
Depth	-----	0-0.2	0-0.1	0.4-0.5	1.5-1.7	0.1-0.2
Date Sampled		4/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	12	16	16	18	14

Moisture						
Our Reference:	UNITS	137123-68	137123-70	137123-72	137123-74	137123-76
Your Reference	-----	BH222	BH223	BH224	BH225	BH225
Depth	-----	0-0.2	0-0.2	0-0.2	0-0.2	0.7-0.8
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	14	17	12	19	13

Moisture						
Our Reference:	UNITS	137123-77	137123-78	137123-80	137123-82	137123-83
Your Reference	-----	BH225	BH226	BH226	BH226	BH227
Depth	-----	1.1-1.3	0-0.2	0.4-0.5	1.3-1.5	0-0.2
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	12	15	9.7	19	26

Moisture						
Our Reference:	UNITS	137123-85	137123-89	137123-93	137123-94	137123-95
Your Reference	-----	BH228	BH229	DupJS1	DupJS2	DupJS3
Depth	-----	0.1-0.2	0-0.1	-	-	-
Date Sampled		5/11/2015	5/11/2015	2/11/2015	3/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	17	18	27	17	15

Moisture						
Our Reference:	UNITS	137123-100	137123-101	137123-102	137123-103	137123-104
Your Reference	-----	TB1	TB2	TB3	TB4	TB5
Depth	-----	-	-	-	-	-
Date Sampled		2/11/2015	3/11/2015	4/11/2015	5/11/2015	6/11/2015
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	10/11/2015	10/11/2015	10/11/2015	10/11/2015	10/11/2015
Date analysed	-	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Moisture	%	0.1	0.2	0.5	1.8	0.2

Asbestos ID - soils						
Our Reference:	UNITS	137123-1	137123-3	137123-5	137123-7	137123-9
Your Reference	-----	BH201	BH202	BH203	BH204	BH205
Depth	-----	0.1-0.2	0.1-0.2	0.1-0.2	0-0.1	0-0.2
Date Sampled		6/11/2015	6/11/2015	6/11/2015	2/11/2015	2/11/2015
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 30g	Approx. 20g	Approx. 30g	Approx. 35g	Approx. 25g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	137123-11	137123-13	137123-17	137123-21	137123-25
Your Reference	-----	BH206	BH207	BH208	BH209	BH210
Depth	-----	0.2-0.4	0.2-0.4	0.2-0.4	0.1-0.2	0.1-0.4
Date Sampled		2/11/2015	2/11/2015	2/11/2015	6/11/2015	4/11/2015
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 45g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-29 BH211 0-0.2 3/11/2015 soil	137123-32 BH212 0-0.2 3/11/2015 soil	137123-37 BH213 0-0.3 3/11/2015 soil	137123-41 BH214 0-0.4 4/11/2015 soil	137123-44 BH215 0-0.2 3/11/2015 soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 35g	Approx. 25g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	137123-49 BH216 0-0.2 3/11/2015 soil	137123-52 BH217 0-0.3 4/11/2015 soil	137123-55 BH218 0-0.3 4/11/2015 soil	137123-59 BH219 0-0.2 4/11/2015 soil	137123-61 BH220 0-0.1 5/11/2015 soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 25g	Approx. 30g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	137123-66	137123-68	137123-70	137123-72	137123-74
Your Reference	-----	BH221	BH222	BH223	BH224	BH225
Depth	-----	0.1-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 40g	Approx. 25g	Approx. 30g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils					
Our Reference:	UNITS	137123-78	137123-83	137123-85	137123-89
Your Reference	-----	BH226	BH227	BH228	BH229
Depth	-----	0-0.2	0-0.2	0.1-0.2	0-0.1
Date Sampled		5/11/2015	5/11/2015	5/11/2015	5/11/2015
Type of sample		soil	soil	soil	soil
Date analysed	-	16/11/2015	16/11/2015	16/11/2015	16/11/2015
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials			
Our Reference:	UNITS	137123-98	137123-99
Your Reference	-----	FTP226	FTP227
Depth	-----	0.2	0.1
Date Sampled		5/11/2015	5/11/2015
Type of sample		material	material
Date analysed	-	13/11/2015	13/11/2015
Mass / Dimension of Sample	-	60x30x4mm	62x40x6mm
Sample Description	-	Grey compressed fibre cement material	Grey compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected

BTEX in Water	UNITS	137123-105	137123-106
Our Reference:	-----	FR1	FR2
Your Reference	-----	-	-
Depth			
Date Sampled		3/11/2015	4/11/2015
Type of sample		water	water
Date extracted	-	11/11/2015	11/11/2015
Date analysed	-	12/11/2015	12/11/2015
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	102	102
Surrogate toluene-d8	%	101	101
Surrogate 4-BFB	%	102	102

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			12/11/2015	137123-1	11/11/2015 11/11/2015	LCS-4	12/11/2015
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	137123-1	<25 <25	LCS-4	97%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	137123-1	<25 <25	LCS-4	97%
Benzene	mg/kg	0.2	Org-016	<0.2	137123-1	<0.2 <0.2	LCS-4	92%
Toluene	mg/kg	0.5	Org-016	<0.5	137123-1	<0.5 <0.5	LCS-4	96%
Ethylbenzene	mg/kg	1	Org-016	<1	137123-1	<1 <1	LCS-4	99%
m+p-xylene	mg/kg	2	Org-016	<2	137123-1	<2 <2	LCS-4	99%
o-Xylene	mg/kg	1	Org-016	<1	137123-1	<1 <1	LCS-4	99%
naphthalene	mg/kg	1	Org-014	<1	137123-1	<1 <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	118	137123-1	104 105 RPD: 1	LCS-4	107%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	137123-1	<50 <50	LCS-4	107%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	137123-1	<100 <100	LCS-4	94%
TRHC ₂₈ - C ₃₆	mg/kg	100	Org-003	<100	137123-1	<100 <100	LCS-4	93%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	137123-1	<50 <50	LCS-4	107%
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	137123-1	<100 <100	LCS-4	94%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	137123-1	<100 <100	LCS-4	93%
Surrogate o-Terphenyl	%		Org-003	82	137123-1	79 77 RPD: 3	LCS-4	92%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			11/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Naphthalene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	114%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	117%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	105%
Anthracene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	105%
Pyrene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	112%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	LCS-4	119%
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	137123-1	<0.2 <0.2	[NR]	[NR]

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	137123-1	<0.05 <0.05	LCS-4	75%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	96	137123-1	109 96 RPD: 13	LCS-4	91%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			12/11/2015	137123-1	11/11/2015 11/11/2015	LCS-4	11/11/2015
HCB	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	96%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	94%
Heptachlor	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	97%
delta-BHC	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	94%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	94%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	98%
Dieldrin	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	98%
Endrin	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	105%
pp-DDD	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	117%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	LCS-4	105%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	96	137123-1	95 96 RPD: 1	LCS-4	112%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			12/11/2015	137123-1	11/11/2015 11/11/2015	LCS-4	11/11/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	111%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	101%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	97%
Dimethoate	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	100%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	114%
Malathion	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	105%
Parathion	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	LCS-4	109%
Ronnel	mg/kg	0.1	Org-008	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-008	96	137123-1	95 96 RPD: 1	LCS-4	112%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-			12/11/2015	137123-1	11/11/2015 11/11/2015	LCS-4	11/11/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	LCS-4	96%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	137123-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	96	137123-1	95 96 RPD: 1	LCS-4	112%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date prepared	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-3	10/11/2015
Date analysed	-			10/11/2015	137123-1	10/11/2015 10/11/2015	LCS-3	10/11/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	137123-1	6 6 RPD: 0	LCS-3	112%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	137123-1	<0.4 <0.4	LCS-3	105%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	137123-1	18 17 RPD: 6	LCS-3	109%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	137123-1	20 25 RPD: 22	LCS-3	108%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	137123-1	17 16 RPD: 6	LCS-3	104%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	137123-1	<0.1 <0.1	LCS-3	97%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	137123-1	5 4 RPD: 22	LCS-3	104%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	137123-1	25 26 RPD: 4	LCS-3	108%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
BTEX in Water						Base II Duplicate II %RPD		
Date extracted	-			11/11/2015	[NT]	[NT]	LCS-W1	11/11/2015
Date analysed	-			12/11/2015	[NT]	[NT]	LCS-W1	12/11/2015
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	92%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	96%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	99%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
Surrogate Dibromofluoromethane	%		Org-016	101	[NT]	[NT]	LCS-W1	101%
Surrogate toluene-d8	%		Org-016	101	[NT]	[NT]	LCS-W1	100%
Surrogate 4-BFB	%		Org-016	104	[NT]	[NT]	LCS-W1	101%
QUALITY CONTROL	UNITS	Dup. Sm#		Duplicate		Spike Sm#	Spike % Recovery	
vTRH(C6-C10)/BTEXN in Soil				Base + Duplicate + %RPD				
Date extracted	-	137123-17		10/11/2015 10/11/2015		LCS-5	10/11/2015	
Date analysed	-	137123-17		11/11/2015 11/11/2015		LCS-5	11/11/2015	
TRHC ₆ - C ₉	mg/kg	137123-17		<25 <25		LCS-5	108%	
TRHC ₆ - C ₁₀	mg/kg	137123-17		<25 <25		LCS-5	108%	
Benzene	mg/kg	137123-17		<0.2 <0.2		LCS-5	101%	
Toluene	mg/kg	137123-17		<0.5 <0.5		LCS-5	109%	
Ethylbenzene	mg/kg	137123-17		<1 <1		LCS-5	107%	
m+p-xylene	mg/kg	137123-17		<2 <2		LCS-5	111%	

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
o-Xylene	mg/kg	137123-17	<1 <1	LCS-5	115%
naphthalene	mg/kg	137123-17	<1 <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	137123-17	108 108 RPD: 0	LCS-5	117%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-17	10/11/2015 10/11/2015	LCS-5	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	137123-17	<50 <50	LCS-5	107%
TRHC ₁₅ - C ₂₈	mg/kg	137123-17	<100 <100	LCS-5	101%
TRHC ₂₉ - C ₃₆	mg/kg	137123-17	<100 <100	LCS-5	93%
TRH>C ₁₀ -C ₁₆	mg/kg	137123-17	<50 <50	LCS-5	107%
TRH>C ₁₆ -C ₃₄	mg/kg	137123-17	<100 <100	LCS-5	101%
TRH>C ₃₄ -C ₄₀	mg/kg	137123-17	<100 <100	LCS-5	93%
Surrogate o-Terphenyl	%	137123-17	79 77 RPD: 3	LCS-5	91%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Naphthalene	mg/kg	137123-17	<0.1 <0.1	LCS-5	114%
Acenaphthylene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	137123-17	<0.1 <0.1	LCS-5	117%
Phenanthrene	mg/kg	137123-17	<0.1 <0.1	LCS-5	105%
Anthracene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	137123-17	<0.1 <0.1	LCS-5	105%
Pyrene	mg/kg	137123-17	<0.1 <0.1	LCS-5	112%
Benzo(a)anthracene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	137123-17	<0.1 <0.1	LCS-5	119%
Benzo(b,j,k)fluoranthene	mg/kg	137123-17	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	137123-17	<0.05 <0.05	LCS-5	75%
Indeno(1,2,3-c,d)pyrene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	137123-17	100 106 RPD: 6	LCS-5	91%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-17	11/11/2015 11/11/2015	LCS-5	12/11/2015
HCB	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	137123-17	<0.1 <0.1	LCS-5	93%
gamma-BHC	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	137123-17	<0.1 <0.1	LCS-5	93%
Heptachlor	mg/kg	137123-17	<0.1 <0.1	LCS-5	97%
delta-BHC	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	137123-17	<0.1 <0.1	LCS-5	93%
Heptachlor Epoxide	mg/kg	137123-17	<0.1 <0.1	LCS-5	93%
gamma-Chlordane	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	137123-17	<0.1 <0.1	LCS-5	98%
Dieldrin	mg/kg	137123-17	<0.1 <0.1	LCS-5	98%
Endrin	mg/kg	137123-17	<0.1 <0.1	LCS-5	109%
pp-DDD	mg/kg	137123-17	<0.1 <0.1	LCS-5	117%
Endosulfan II	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	137123-17	<0.1 <0.1	LCS-5	97%
Methoxychlor	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	137123-17	92 90 RPD: 2	LCS-5	111%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-17	11/11/2015 11/11/2015	LCS-5	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	137123-17	<0.1 <0.1	LCS-5	91%
Bromophos-ethyl	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	137123-17	<0.1 <0.1	LCS-5	101%
Chlorpyrifos-methyl	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Diazinon	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Dichlorvos	mg/kg	137123-17	<0.1 <0.1	LCS-5	103%
Dimethoate	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	137123-17	<0.1 <0.1	LCS-5	101%
Fenitrothion	mg/kg	137123-17	<0.1 <0.1	LCS-5	114%
Malathion	mg/kg	137123-17	<0.1 <0.1	LCS-5	88%
Parathion	mg/kg	137123-17	<0.1 <0.1	LCS-5	109%
Ronnel	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	137123-17	92 90 RPD: 2	LCS-5	111%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-17	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-17	11/11/2015 11/11/2015	LCS-5	12/11/2015
Aroclor 1016	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	137123-17	<0.1 <0.1	LCS-5	99%
Aroclor 1260	mg/kg	137123-17	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%	137123-17	92 90 RPD: 2	LCS-5	111%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	137123-17	10/11/2015 10/11/2015	137123-3	10/11/2015
Date analysed	-	137123-17	10/11/2015 10/11/2015	137123-3	10/11/2015
Arsenic	mg/kg	137123-17	35 41 RPD: 16	137123-3	89%
Cadmium	mg/kg	137123-17	<0.4 <0.4	137123-3	90%
Chromium	mg/kg	137123-17	15 13 RPD: 14	137123-3	83%
Copper	mg/kg	137123-17	41 38 RPD: 8	137123-3	103%
Lead	mg/kg	137123-17	19 21 RPD: 10	137123-3	81%
Mercury	mg/kg	137123-17	<0.1 <0.1	137123-3	92%
Nickel	mg/kg	137123-17	21 21 RPD: 0	137123-3	88%
Zinc	mg/kg	137123-17	71 67 RPD: 6	137123-3	100%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-33	10/11/2015 10/11/2015	LCS-6	10/11/2015
Date analysed	-	137123-33	11/11/2015 11/11/2015	LCS-6	12/11/2015
TRHC ₆ - C ₉	mg/kg	137123-33	<25 <25	LCS-6	117%
TRHC ₆ - C ₁₀	mg/kg	137123-33	<25 <25	LCS-6	117%
Benzene	mg/kg	137123-33	<0.2 <0.2	LCS-6	111%
Toluene	mg/kg	137123-33	<0.5 <0.5	LCS-6	120%
Ethylbenzene	mg/kg	137123-33	<1 <1	LCS-6	116%
m+p-xylene	mg/kg	137123-33	<2 <2	LCS-6	118%
o-Xylene	mg/kg	137123-33	<1 <1	LCS-6	123%
naphthalene	mg/kg	137123-33	<1 <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	137123-33	111 113 RPD: 2	LCS-6	117%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-33	10/11/2015 10/11/2015	LCS-6	10/11/2015
Date analysed	-	137123-33	11/11/2015 11/11/2015	LCS-6	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	137123-33	<50 <50	LCS-6	116%
TRHC ₁₅ - C ₂₈	mg/kg	137123-33	<100 <100	LCS-6	112%
TRHC ₂₉ - C ₃₆	mg/kg	137123-33	<100 <100	LCS-6	107%
TRH>C ₁₀ -C ₁₆	mg/kg	137123-33	<50 <50	LCS-6	116%
TRH>C ₁₆ -C ₃₄	mg/kg	137123-33	<100 <100	LCS-6	112%
TRH>C ₃₄ -C ₄₀	mg/kg	137123-33	<100 <100	LCS-6	107%
Surrogate o-Terphenyl	%	137123-33	78 76 RPD: 3	LCS-6	103%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-33	10/11/2015 10/11/2015	LCS-6	10/11/2015
Date analysed	-	137123-33	10/11/2015 10/11/2015	LCS-6	10/11/2015
Naphthalene	mg/kg	137123-33	<0.1 <0.1	LCS-6	118%
Acenaphthylene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	137123-33	<0.1 <0.1	LCS-6	117%
Phenanthrene	mg/kg	137123-33	<0.1 <0.1	LCS-6	100%
Anthracene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	137123-33	<0.1 <0.1	LCS-6	104%
Pyrene	mg/kg	137123-33	<0.1 <0.1	LCS-6	110%
Benzo(a)anthracene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	137123-33	<0.1 <0.1	LCS-6	123%
Benzo(b,j,k)fluoranthene	mg/kg	137123-33	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	137123-33	<0.05 <0.05	LCS-6	104%
Indeno(1,2,3-c,d)pyrene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]

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QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	137123-33	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	137123-33	92 90 RPD: 2	LCS-6	89%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	137123-33	10/11/2015 10/11/2015	LCS-4	10/11/2015
Date analysed	-	137123-33	10/11/2015 10/11/2015	LCS-4	10/11/2015
Arsenic	mg/kg	137123-33	7 6 RPD: 15	LCS-4	109%
Cadmium	mg/kg	137123-33	<0.4 <0.4	LCS-4	105%
Chromium	mg/kg	137123-33	16 16 RPD: 0	LCS-4	108%
Copper	mg/kg	137123-33	38 39 RPD: 3	LCS-4	109%
Lead	mg/kg	137123-33	20 20 RPD: 0	LCS-4	103%
Mercury	mg/kg	137123-33	<0.1 <0.1	LCS-4	93%
Nickel	mg/kg	137123-33	29 31 RPD: 7	LCS-4	102%
Zinc	mg/kg	137123-33	85 89 RPD: 5	LCS-4	106%
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-45	10/11/2015 10/11/2015	137123-3	10/11/2015
Date analysed	-	137123-45	11/11/2015 11/11/2015	137123-3	11/11/2015
TRHC ₆ - C ₉	mg/kg	137123-45	<25 <25	137123-3	109%
TRHC ₆ - C ₁₀	mg/kg	137123-45	<25 <25	137123-3	109%
Benzene	mg/kg	137123-45	<0.2 <0.2	137123-3	100%
Toluene	mg/kg	137123-45	<0.5 <0.5	137123-3	108%
Ethylbenzene	mg/kg	137123-45	<1 <1	137123-3	110%
m+p-xylene	mg/kg	137123-45	<2 <2	137123-3	113%
o-Xylene	mg/kg	137123-45	<1 <1	137123-3	118%
naphthalene	mg/kg	137123-45	<1 <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	137123-45	118 116 RPD: 2	137123-3	113%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-45	10/11/2015 10/11/2015	137123-3	10/11/2015
Date analysed	-	137123-45	11/11/2015 11/11/2015	137123-3	10/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	137123-45	<50 <50	137123-3	105%
TRHC ₁₅ - C ₂₈	mg/kg	137123-45	<100 <100	137123-3	98%
TRHC ₂₉ - C ₃₆	mg/kg	137123-45	<100 <100	137123-3	73%
TRH>C ₁₀ -C ₁₆	mg/kg	137123-45	<50 <50	137123-3	105%
TRH>C ₁₆ -C ₃₄	mg/kg	137123-45	<100 <100	137123-3	98%
TRH>C ₃₄ -C ₄₀	mg/kg	137123-45	<100 <100	137123-3	73%
Surrogate o-Terphenyl	%	137123-45	78 77 RPD: 1	137123-3	78%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-45	10/11/2015 10/11/2015	137123-3	10/11/2015
Date analysed	-	137123-45	10/11/2015 10/11/2015	137123-3	10/11/2015
Naphthalene	mg/kg	137123-45	<0.1 <0.1	137123-3	106%
Acenaphthylene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	137123-45	<0.1 <0.1	137123-3	107%
Phenanthrene	mg/kg	137123-45	<0.1 <0.1	137123-3	95%
Anthracene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	137123-45	<0.1 <0.1	137123-3	95%
Pyrene	mg/kg	137123-45	<0.1 <0.1	137123-3	102%
Benzo(a)anthracene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	137123-45	<0.1 <0.1	137123-3	108%
Benzo(b,j,k)fluoranthene	mg/kg	137123-45	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	137123-45	<0.05 <0.05	137123-3	76%
Indeno(1,2,3-c,d)pyrene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	137123-45	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	137123-45	92 91 RPD: 1	137123-3	83%

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QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-3	10/11/2015
Date analysed	-	[NT]	[NT]	137123-3	11/11/2015
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	137123-3	89%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	137123-3	87%
Heptachlor	mg/kg	[NT]	[NT]	137123-3	91%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	137123-3	87%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	137123-3	87%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	137123-3	90%
Dieldrin	mg/kg	[NT]	[NT]	137123-3	90%
Endrin	mg/kg	[NT]	[NT]	137123-3	98%
pp-DDD	mg/kg	[NT]	[NT]	137123-3	111%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	137123-3	88%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	137123-3	94%

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QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-3	10/11/2015
Date analysed	-	[NT]	[NT]	137123-3	11/11/2015
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	137123-3	108%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	137123-3	99%
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	137123-3	105%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	137123-3	99%
Fenitrothion	mg/kg	[NT]	[NT]	137123-3	97%
Malathion	mg/kg	[NT]	[NT]	137123-3	80%
Parathion	mg/kg	[NT]	[NT]	137123-3	103%
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	137123-3	94%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-3	10/11/2015
Date analysed	-	[NT]	[NT]	137123-3	11/11/2015
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	137123-3	95%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	137123-3	94%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	137123-45	10/11/2015 10/11/2015	LCS-5	10/11/2015
Date analysed	-	137123-45	10/11/2015 10/11/2015	LCS-5	10/11/2015
Arsenic	mg/kg	137123-45	10 11 RPD: 10	LCS-5	110%
Cadmium	mg/kg	137123-45	<0.4 <0.4	LCS-5	102%
Chromium	mg/kg	137123-45	13 12 RPD: 8	LCS-5	107%
Copper	mg/kg	137123-45	39 41 RPD: 5	LCS-5	106%
Lead	mg/kg	137123-45	16 16 RPD: 0	LCS-5	103%
Mercury	mg/kg	137123-45	<0.1 <0.1	LCS-5	90%
Nickel	mg/kg	137123-45	25 24 RPD: 4	LCS-5	102%
Zinc	mg/kg	137123-45	79 81 RPD: 2	LCS-5	106%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Date analysed	-	137123-59	12/11/2015 12/11/2015	137123-34	11/11/2015
TRHC ₆ - C ₉	mg/kg	137123-59	<25 <25	137123-34	108%
TRHC ₆ - C ₁₀	mg/kg	137123-59	<25 <25	137123-34	108%
Benzene	mg/kg	137123-59	<0.2 <0.2	137123-34	103%
Toluene	mg/kg	137123-59	<0.5 <0.5	137123-34	111%
Ethylbenzene	mg/kg	137123-59	<1 <1	137123-34	108%
m+p-xylene	mg/kg	137123-59	<2 <2	137123-34	109%
o-Xylene	mg/kg	137123-59	<1 <1	137123-34	114%
naphthalene	mg/kg	137123-59	<1 <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	137123-59	115 112 RPD: 3	137123-34	118%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Date analysed	-	137123-59	11/11/2015 11/11/2015	137123-34	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	137123-59	<50 <50	137123-34	103%
TRHC ₁₅ - C ₂₈	mg/kg	137123-59	<100 <100	137123-34	93%
TRHC ₂₉ - C ₃₆	mg/kg	137123-59	<100 <100	137123-34	75%
TRH>C ₁₀ -C ₁₆	mg/kg	137123-59	<50 <50	137123-34	103%
TRH>C ₁₆ -C ₃₄	mg/kg	137123-59	<100 <100	137123-34	93%
TRH>C ₃₄ -C ₄₀	mg/kg	137123-59	<100 <100	137123-34	75%
Surrogate o-Terphenyl	%	137123-59	76 77 RPD: 1	137123-34	75%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Date analysed	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Naphthalene	mg/kg	137123-59	<0.1 <0.1	137123-34	107%
Acenaphthylene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	137123-59	<0.1 <0.1	137123-34	107%
Phenanthrene	mg/kg	137123-59	<0.1 <0.1	137123-34	93%
Anthracene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	137123-59	<0.1 <0.1	137123-34	94%
Pyrene	mg/kg	137123-59	<0.1 <0.1	137123-34	99%
Benzo(a)anthracene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	137123-59	<0.1 <0.1	137123-34	110%
Benzo(b,j+k)fluoranthene	mg/kg	137123-59	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	137123-59	<0.05 <0.05	137123-34	77%
Indeno(1,2,3-c,d)pyrene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]

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QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	137123-59	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	137123-59	89 89 RPD: 0	137123-34	91%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	137123-59	10/11/2015 10/11/2015		
Date analysed	-	137123-59	12/11/2015 12/11/2015		
HCB	mg/kg	137123-59	<0.1 <0.1		
alpha-BHC	mg/kg	137123-59	<0.1 <0.1		
gamma-BHC	mg/kg	137123-59	<0.1 <0.1		
beta-BHC	mg/kg	137123-59	<0.1 <0.1		
Heptachlor	mg/kg	137123-59	<0.1 <0.1		
delta-BHC	mg/kg	137123-59	<0.1 <0.1		
Aldrin	mg/kg	137123-59	<0.1 <0.1		
Heptachlor Epoxide	mg/kg	137123-59	<0.1 <0.1		
gamma-Chlordane	mg/kg	137123-59	<0.1 <0.1		
alpha-chlordane	mg/kg	137123-59	<0.1 <0.1		
Endosulfan I	mg/kg	137123-59	<0.1 <0.1		
pp-DDE	mg/kg	137123-59	<0.1 <0.1		
Dieldrin	mg/kg	137123-59	<0.1 <0.1		
Endrin	mg/kg	137123-59	<0.1 <0.1		
pp-DDD	mg/kg	137123-59	<0.1 <0.1		
Endosulfan II	mg/kg	137123-59	<0.1 <0.1		
pp-DDT	mg/kg	137123-59	<0.1 <0.1		
Endrin Aldehyde	mg/kg	137123-59	<0.1 <0.1		
Endosulfan Sulphate	mg/kg	137123-59	<0.1 <0.1		
Methoxychlor	mg/kg	137123-59	<0.1 <0.1		
Surrogate TCMX	%	137123-59	91 93 RPD: 2		

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	137123-59	10/11/2015 10/11/2015		
Date analysed	-	137123-59	12/11/2015 12/11/2015		
Azinphos-methyl (Guthion)	mg/kg	137123-59	<0.1 <0.1		
Bromophos-ethyl	mg/kg	137123-59	<0.1 <0.1		
Chlorpyrifos	mg/kg	137123-59	<0.1 <0.1		
Chlorpyrifos-methyl	mg/kg	137123-59	<0.1 <0.1		
Diazinon	mg/kg	137123-59	<0.1 <0.1		
Dichlorvos	mg/kg	137123-59	<0.1 <0.1		
Dimethoate	mg/kg	137123-59	<0.1 <0.1		
Ethion	mg/kg	137123-59	<0.1 <0.1		
Fenitrothion	mg/kg	137123-59	<0.1 <0.1		
Malathion	mg/kg	137123-59	<0.1 <0.1		
Parathion	mg/kg	137123-59	<0.1 <0.1		
Ronnel	mg/kg	137123-59	<0.1 <0.1		
Surrogate TCMX	%	137123-59	91 93 RPD: 2		
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	137123-59	10/11/2015 10/11/2015		
Date analysed	-	137123-59	12/11/2015 12/11/2015		
Aroclor 1016	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1221	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1232	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1242	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1248	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1254	mg/kg	137123-59	<0.1 <0.1		
Aroclor 1260	mg/kg	137123-59	<0.1 <0.1		
Surrogate TCLMX	%	137123-59	91 93 RPD: 2		
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Date analysed	-	137123-59	10/11/2015 10/11/2015	137123-34	10/11/2015
Arsenic	mg/kg	137123-59	<4 <4	137123-34	87%
Cadmium	mg/kg	137123-59	<0.4 <0.4	137123-34	89%
Chromium	mg/kg	137123-59	8 9 RPD: 12	137123-34	91%
Copper	mg/kg	137123-59	11 11 RPD: 0	137123-34	97%
Lead	mg/kg	137123-59	12 12 RPD: 0	137123-34	82%
Mercury	mg/kg	137123-59	<0.1 <0.1	137123-34	102%
Nickel	mg/kg	137123-59	5 5 RPD: 0	137123-34	83%
Zinc	mg/kg	137123-59	35 37 RPD: 6	137123-34	78%

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QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-77	10/11/2015 10/11/2015	137123-61	10/11/2015
Date analysed	-	137123-77	12/11/2015 12/11/2015	137123-61	12/11/2015
TRHC ₆ - C ₉	mg/kg	137123-77	<25 <25	137123-61	103%
TRHC ₆ - C ₁₀	mg/kg	137123-77	<25 <25	137123-61	103%
Benzene	mg/kg	137123-77	<0.2 <0.2	137123-61	99%
Toluene	mg/kg	137123-77	<0.5 <0.5	137123-61	107%
Ethylbenzene	mg/kg	137123-77	<1 <1	137123-61	103%
m+p-xylene	mg/kg	137123-77	<2 <2	137123-61	104%
o-Xylene	mg/kg	137123-77	<1 <1	137123-61	109%
naphthalene	mg/kg	137123-77	<1 <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	137123-77	112 113 RPD: 1	137123-61	114%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-77	10/11/2015 10/11/2015	137123-61	10/11/2015
Date analysed	-	137123-77	11/11/2015 11/11/2015	137123-61	11/11/2015
TRHC ₁₀ - C ₁₄	mg/kg	137123-77	<50 <50	137123-61	108%
TRHC ₁₅ - C ₂₈	mg/kg	137123-77	<100 <100	137123-61	99%
TRHC ₂₉ - C ₃₆	mg/kg	137123-77	<100 <100	137123-61	#
TRH>C ₁₀ -C ₁₆	mg/kg	137123-77	<50 <50	137123-61	108%
TRH>C ₁₆ -C ₃₄	mg/kg	137123-77	<100 <100	137123-61	99%
TRH>C ₃₄ -C ₄₀	mg/kg	137123-77	<100 <100	137123-61	#
Surrogate o-Terphenyl	%	137123-77	78 77 RPD: 1	137123-61	78%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	137123-77	10/11/2015 10/11/2015	137123-61	10/11/2015
Date analysed	-	137123-77	11/11/2015 11/11/2015	137123-61	10/11/2015
Naphthalene	mg/kg	137123-77	<0.1 <0.1	137123-61	110%
Acenaphthylene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	137123-77	<0.1 <0.1	137123-61	112%
Phenanthrene	mg/kg	137123-77	<0.1 <0.1	137123-61	95%
Anthracene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	137123-77	0.1 <0.1	137123-61	96%
Pyrene	mg/kg	137123-77	0.1 <0.1	137123-61	101%
Benzo(a)anthracene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	137123-77	<0.1 <0.1	137123-61	111%
Benzo(b,j,k)fluoranthene	mg/kg	137123-77	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	137123-77	0.05 0.06 RPD: 18	137123-61	96%
Indeno(1,2,3-c,d)pyrene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]

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QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	137123-77	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	137123-77	89 89 RPD: 0	137123-61	88%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-61	10/11/2015
Date analysed	-	[NT]	[NT]	137123-61	12/11/2015
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	137123-61	106%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	137123-61	101%
Heptachlor	mg/kg	[NT]	[NT]	137123-61	107%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	137123-61	101%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	137123-61	102%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	137123-61	107%
Dieldrin	mg/kg	[NT]	[NT]	137123-61	108%
Endrin	mg/kg	[NT]	[NT]	137123-61	119%
pp-DDD	mg/kg	[NT]	[NT]	137123-61	117%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	137123-61	111%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	137123-61	92%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-61	10/11/2015
Date analysed	-	[NT]	[NT]	137123-61	12/11/2015
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	137123-61	105%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	137123-61	97%
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	137123-61	100%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	137123-61	93%
Fenitrothion	mg/kg	[NT]	[NT]	137123-61	104%
Malathion	mg/kg	[NT]	[NT]	137123-61	79%
Parathion	mg/kg	[NT]	[NT]	137123-61	104%
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	137123-61	92%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	137123-61	10/11/2015
Date analysed	-	[NT]	[NT]	137123-61	12/11/2015
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	137123-61	91%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	137123-61	92%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	137123-77	10/11/2015 10/11/2015	LCS-6	10/11/2015
Date analysed	-	137123-77	10/11/2015 10/11/2015	LCS-6	10/11/2015
Arsenic	mg/kg	137123-77	5 6 RPD: 18	LCS-6	108%
Cadmium	mg/kg	137123-77	<0.4 <0.4	LCS-6	103%
Chromium	mg/kg	137123-77	14 15 RPD: 7	LCS-6	106%
Copper	mg/kg	137123-77	33 33 RPD: 0	LCS-6	107%
Lead	mg/kg	137123-77	28 22 RPD: 24	LCS-6	106%
Mercury	mg/kg	137123-77	<0.1 <0.1	LCS-6	89%
Nickel	mg/kg	137123-77	22 19 RPD: 15	LCS-6	101%
Zinc	mg/kg	137123-77	77 60 RPD: 25	LCS-6	105%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	137123-95	10/11/2015 10/11/2015
Date analysed	-	137123-95	12/11/2015 12/11/2015
TRHC ₆ - C ₉	mg/kg	137123-95	<25 <25
TRHC ₆ - C ₁₀	mg/kg	137123-95	<25 <25
Benzene	mg/kg	137123-95	<0.2 <0.2
Toluene	mg/kg	137123-95	<0.5 <0.5
Ethylbenzene	mg/kg	137123-95	<1 <1
m+p-xylene	mg/kg	137123-95	<2 <2
o-Xylene	mg/kg	137123-95	<1 <1
naphthalene	mg/kg	137123-95	<1 <1
Surrogate aaa- Trifluorotoluene	%	137123-95	117 114 RPD: 3
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	137123-95	10/11/2015 10/11/2015
Date analysed	-	137123-95	12/11/2015 12/11/2015
HCB	mg/kg	137123-95	<0.1 <0.1
alpha-BHC	mg/kg	137123-95	<0.1 <0.1
gamma-BHC	mg/kg	137123-95	<0.1 <0.1
beta-BHC	mg/kg	137123-95	<0.1 <0.1
Heptachlor	mg/kg	137123-95	<0.1 <0.1
delta-BHC	mg/kg	137123-95	<0.1 <0.1
Aldrin	mg/kg	137123-95	<0.1 <0.1
Heptachlor Epoxide	mg/kg	137123-95	<0.1 <0.1
gamma-Chlordane	mg/kg	137123-95	<0.1 <0.1
alpha-chlordane	mg/kg	137123-95	<0.1 <0.1
Endosulfan I	mg/kg	137123-95	<0.1 <0.1
pp-DDE	mg/kg	137123-95	<0.1 <0.1
Dieldrin	mg/kg	137123-95	<0.1 <0.1
Endrin	mg/kg	137123-95	<0.1 <0.1
pp-DDD	mg/kg	137123-95	<0.1 <0.1
Endosulfan II	mg/kg	137123-95	<0.1 <0.1
pp-DDT	mg/kg	137123-95	<0.1 <0.1
Endrin Aldehyde	mg/kg	137123-95	<0.1 <0.1
Endosulfan Sulphate	mg/kg	137123-95	<0.1 <0.1
Methoxychlor	mg/kg	137123-95	<0.1 <0.1
Surrogate TCMX	%	137123-95	94 96 RPD: 2

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	137123-95	10/11/2015 10/11/2015		
Date analysed	-	137123-95	12/11/2015 12/11/2015		
Azinphos-methyl (Guthion)	mg/kg	137123-95	<0.1 <0.1		
Bromophos-ethyl	mg/kg	137123-95	<0.1 <0.1		
Chlorpyrifos	mg/kg	137123-95	<0.1 <0.1		
Chlorpyrifos-methyl	mg/kg	137123-95	<0.1 <0.1		
Diazinon	mg/kg	137123-95	<0.1 <0.1		
Dichlorvos	mg/kg	137123-95	<0.1 <0.1		
Dimethoate	mg/kg	137123-95	<0.1 <0.1		
Ethion	mg/kg	137123-95	<0.1 <0.1		
Fenitrothion	mg/kg	137123-95	<0.1 <0.1		
Malathion	mg/kg	137123-95	<0.1 <0.1		
Parathion	mg/kg	137123-95	<0.1 <0.1		
Ronnel	mg/kg	137123-95	<0.1 <0.1		
Surrogate TCMX	%	137123-95	94 96 RPD: 2		
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	137123-95	10/11/2015 10/11/2015		
Date analysed	-	137123-95	12/11/2015 12/11/2015		
Aroclor 1016	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1221	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1232	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1242	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1248	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1254	mg/kg	137123-95	<0.1 <0.1		
Aroclor 1260	mg/kg	137123-95	<0.1 <0.1		
Surrogate TCLMX	%	137123-95	94 96 RPD: 2		
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	137123-61	10/11/2015
Date analysed	-	[NT]	[NT]	137123-61	10/11/2015
Arsenic	mg/kg	[NT]	[NT]	137123-61	96%
Cadmium	mg/kg	[NT]	[NT]	137123-61	97%
Chromium	mg/kg	[NT]	[NT]	137123-61	101%
Copper	mg/kg	[NT]	[NT]	137123-61	106%
Lead	mg/kg	[NT]	[NT]	137123-61	96%
Mercury	mg/kg	[NT]	[NT]	137123-61	85%
Nickel	mg/kg	[NT]	[NT]	137123-61	95%
Zinc	mg/kg	[NT]	[NT]	137123-61	97%

Client Reference: E28870KB, Arndell Park

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	LCS-7	10/11/2015
Date analysed	-	[NT]	[NT]	LCS-7	10/11/2015
Arsenic	mg/kg	[NT]	[NT]	LCS-7	109%
Cadmium	mg/kg	[NT]	[NT]	LCS-7	102%
Chromium	mg/kg	[NT]	[NT]	LCS-7	105%
Copper	mg/kg	[NT]	[NT]	LCS-7	107%
Lead	mg/kg	[NT]	[NT]	LCS-7	101%
Mercury	mg/kg	[NT]	[NT]	LCS-7	88%
Nickel	mg/kg	[NT]	[NT]	LCS-7	102%
Zinc	mg/kg	[NT]	[NT]	LCS-7	105%

Report Comments:

TRHs in soil (semi-vol):

Percent recovery is not possible to report due to interference from analytes
(other than those being tested) in the sample/s.

Asbestos ID was analysed by Approved Identifier:

Lulu Scott, Paul Ching

Asbestos ID was authorised by Approved Signatory:

Lulu Scott

INS: Insufficient sample for this test

PQL: Practical Quantitation Limit

NT: Not tested

NR: Test not required

RPD: Relative Percent Difference

NA: Test not required

<: Less than

>: Greater than

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

SAMPLE RECEIPT ADVICE

Client Details	
Client	Environmental Investigation Services
Attention	Vittal Boggaram

Sample Login Details	
Your Reference	E28870KB, Arndell Park
Envirolab Reference	137123
Date Sample Received	09/11/2015
Date Instructions Received	09/11/2015
Date Results Expected to be Reported	16/11/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	102soils, 2materials and 2waters
Turnaround Time Requested	Standard
Temperature on receipt (°C)	
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

Sample Id	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Asbestos ID - materials	BTEX in Water	On Hold
BH201-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH201-1.0-1.2											✓
BH202-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH202-1.0-1.2											✓
BH203-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH203-1.0-1.2											✓
BH204-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH204-1.0-1.2											✓
BH205-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH205-1.0-1.2											✓
BH206-0.2-0.4	✓	✓	✓	✓	✓	✓	✓	✓			
BH206-2.0-2.2	✓	✓	✓				✓				
BH207-0.2-0.4	✓	✓	✓	✓	✓	✓	✓	✓			
BH207-1.2-1.4	✓	✓	✓				✓				
BH207-2.8-3.0	✓	✓	✓				✓				
BH207-5.5-6.0											✓
BH208-0.2-0.4	✓	✓	✓	✓	✓	✓	✓	✓			
BH208-1.6-2.0	✓	✓	✓				✓				
BH208-3.6-4.0	✓	✓	✓				✓				
BH208-6.0-6.45											✓
BH209-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH209-1.0-1.2	✓	✓	✓				✓				
BH209-3.6-3.8	✓	✓	✓				✓				
BH209-5.2-5.4											✓
BH210-0.1-0.4	✓	✓	✓	✓	✓	✓	✓	✓			
BH210-1.0-1.3	✓	✓	✓				✓				
BH210-1.9-2.1	✓	✓	✓				✓				
BH210-2.8-3.0											✓
BH211-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH211-0.9-1.2	✓	✓	✓				✓				
BH211-1.5-1.7											✓
BH212-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH212-1.0-1.2	✓	✓	✓				✓				
BH212-2.0-2.2	✓	✓	✓				✓				
BH212-2.8-3.0											✓
BH212-4.0-4.2											✓
BH213-0-0.3	✓	✓	✓	✓	✓	✓	✓	✓			
BH213-1.0-1.2	✓	✓	✓				✓				

Sample Id	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Asbestos ID - materials	BTEX in Water	On Hold
BH213-2.0-2.2	✓	✓	✓				✓				
BH213-2.8-3.0											✓
BH214-0-0.4	✓	✓	✓	✓	✓	✓	✓	✓			
BH214-1.0-1.3	✓	✓	✓				✓				
BH214-1.9-2.1											✓
BH215-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH215-1.0-1.2	✓	✓	✓				✓				
BH215-2.0-2.2	✓	✓	✓				✓				
BH215-2.8-3.0	✓	✓	✓				✓				
BH215-4.0-4.2											✓
BH216-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH216-1.0-1.3	✓	✓	✓				✓				
BH216-2.0-2.3											✓
BH217-0-0.3	✓	✓	✓	✓	✓	✓	✓	✓			
BH217-0.9-1.2	✓	✓	✓				✓				
BH217-1.8-2.1											✓
BH218-0-0.3	✓	✓	✓	✓	✓	✓	✓	✓			
BH218-1.9-1.2	✓	✓	✓				✓				
BH218-1.8-2.1	✓	✓	✓				✓				
BH218-2.7-3.0											✓
BH219-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH219-1.0-1.3											✓
BH220-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH220-0.1-0.3											✓
BH220-0.4-0.5	✓	✓	✓				✓				
BH220-0.7-0.9											✓
BH220-1.5-1.7	✓	✓	✓				✓				
BH221-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH221-0.4-0.5											✓
BH222-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH222-0.4-0.5											✓
BH223-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH223-0.3-0.5											✓
BH224-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH224-0.3-0.5											✓
BH225-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH225-0.4-0.5											✓
BH225-0.7-0.8	✓	✓	✓				✓				

Sample Id	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Asbestos ID - materials	BTEX in Water	On Hold
BH225-1.1-1.3	✓	✓	✓				✓				
BH226-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH226-0.2-0.4											✓
BH226-0.4-0.5	✓	✓	✓				✓				
BH226-0.8-1.0											✓
BH226-1.3-1.5	✓	✓	✓				✓				
BH227-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH227-0.4-0.5											✓
BH228-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
BH228-0.3-0.4											✓
BH228-0.8-1.0											✓
BH228-1.2-1.3											✓
BH229-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH229-0.1-0.2											✓
BH229-0.3-0.5											✓
BH229-1.1-1.3											✓
DupJS1	✓	✓	✓	✓	✓	✓	✓				
DupJS2	✓	✓	✓	✓	✓	✓	✓				
DupJS3	✓	✓	✓	✓	✓	✓	✓				
DupJS4											✓
DupJS5											✓
FTP226-0.2									✓		
FTP227-0.1									✓		
TB1	✓										
TB2	✓										
TB3	✓										
TB4	✓										
TB5	✓										
FR1										✓	
FR2										✓	

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job E28870KB Number: Date Results STANDARD Required: Page: 1 / 5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram vboggaram@jkggroup.net.au	
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Location: Arndell Park, NSW							Sample Preserved in Esky on Ice									
Sampler: JS							Tests Required									
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos	
6/11/15	1	BH201	0.1-0.2	G, A	0	Fill				X						
	2	↓	1.0-1.2			Natural										
	3	BH202	0.1-0.2			Fill				X						
	4	↓	1.0-1.2			Natural										
	5	BH203	0.1-0.2			Fill				X						
	6	↓	1.0-1.2			Natural										
2/11/15	7	BH204	0.0-0.1			Fill				X						
	8	↓	1.0-1.2			Natural										
	9	BH205	0.0-0.2			Fill				X						
	10	↓	1.0-1.2			Natural										
	11	BH206	0.2-0.4			Fill				X						
	12	↓	2.0-2.2			Fill		X								
	13	BH207	0.2-0.4			Fill				X						
	14	↓	1.2-1.4			↓		X								
	15	↓	2.8-3.0			↓		X								
	16	↓	5.5-6.0			Natural										
	17	BH208	0.2-0.4			Fill				X						
	18	↓	1.6-2.0			↓		X								
	19	↓	3.6-4.0			↓		X								
	20	↓	6.0-6.45			Natural										
6/11/15	21	BH209	0.1-0.2			Fill				X						
	22	↓	1.0-1.2			↓		X								
	23	↓	3.6-3.8			↓		X								
	24	↓	5.2-5.4			Natural										

Remarks (comments/detection limits required):		Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag	
Relinquished By: Vittal B.S.	Date: 9/11/15	Time: 17:15	Received By: P. Ray
			Date: 9/11/2015


 Envirolab Services
 12 Ashley St
 Chatswood NSW 2067
 Ph: (02) 9910 6200
 Job No: 137123
 Date Received: 9/11/2015
 Time Received: 17:15
 Received by: P. Ray
 Temp: Cool/Ambient
 Cooling: Ice/Icepack
 Security: Intact/Broken/None

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job E28870KB Number: Date Results STANDARD Required: Page: 2/5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram vboggaram@jkggroup.net.au	
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Location: Arndell Park, NSW							Sample Preserved in Esky on Ice									
Sampler: JS							Tests Required									
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos	
4/11/15	25	BH210	0.1-0.4	G, A	0	Fill				X						
	26		1.0-1.3					X								
	27		1.9-2.1					X								
	28		2.8-3.0			Natural										
3/11/15	29	BH211	0-0.2			Fill				X						
	30		0.9-1.2					X								
	31		1.5-1.7			Natural										
	32	BH212	0-0.2			Fill				X						
	33		1.0-1.2					X								
	34		2.0-2.2					X								
	35		2.8-3.0													
	36		4.0-4.2			Natural										
	37	BH213	0.0-0.3			Fill				X						
	38		1.0-1.2					X								
	39		2.0-2.2					X								
	40		2.8-3.0			Natural										
4/11/15	41	BH214	0.0-0.4			Fill				X						
	42		1.0-1.3					X								
	43		1.9-2.1			Natural										
3/11/15	44	BH215	0.0-0.2			Fill				X						
	45		1.0-1.2					X								
	46		2.0-2.2					X								
	47		2.8-3.0					X								
	48		4.0-4.2			Natural										

Remarks (comments/detection limits required):		Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag	
Relinquished By: Vittal B-S	Date: 9/11/15	Time: 12.15	Received By: R Date: 9/11/2015

137123

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job E28870KB Number: Date Results STANDARD Required: Page: 3/5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram vboggaram@jkgroup.net.au	
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Location: Arndell Park, NSW							Sample Preserved in Esky on Ice											
Sampler: JS							Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos			
3/11/15	49	BH216	0.0-0.2	G, A	0	Fill				X								
↓	50	↓	1.0-1.3	-	↓	↓		X										
↓	51	↓	2.0-2.3			Natural												
4/11/15	52	BH217	0.0-0.3			Fill				X								
↓	53	↓	0.9-1.2			↓		X										
	54	↓	1.8-2.1			Natural												
	55	BH218	0.0-0.3			Fill				X								
	56	↓	0.9-1.2			↓		X										
	57	↓	1.8-2.1			↓		X										
	58	↓	2.7-3.0			Natural												
	59	BH219	0.0-0.2			Fill				X								
↓	60	↓	1.0-1.3			Natural												
5/11/15	61	TP220	0.0-0.1			Fill				X								
↓	62	↓	0.1-0.3			↓												
	63	↓	0.4-0.5					X										
	64	↓	0.7-0.9															
	65	↓	1.5-1.7			↓		X										
	66	TP221	0.1-0.2			↓				X								
	67	↓	0.4-0.5			Natural												
	68	TP222	0.0-0.2			Fill				X								
	69	↓	0.4-0.5			Natural												
	70	TP223	0.0-0.2			Fill				X								
	71	↓	0.3-0.5			Natural												
	72	TP224	0.0-0.2			Fill				X								
↓	73	↓	0.3-0.5	↓	↓	Natural												

Remarks (comments/detection limits required):

Sample Containers:
 G - 250mg Glass Jar
 A - Ziplock Asbestos Bag
 P - Plastic Bag

Relinquished By: Vittal B-S	Date: 9/11/15	Time: 17.15	Received By: P.R.	Date: 9/11/2015
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137123

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job E28870KB Number: Date Results STANDARD Required: Page: 4 / 5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram vboggaram@jkggroup.net.au
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Location: Arndell Park, NSW							Sample Preserved in Esky on Ice											
Sampler: JS							Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos			
5/11/15	74	TP225	0.0-0.2	G, A	0	Fill				X								
	75		0.4-0.5															
	76		0.7-0.8					X										
	77		1.1-1.3					X										
	78	TP226	0.0-0.2							X								
	79		0.2-0.4															
	80		0.4-0.5					X										
	81		0.8-1.0															
	82		1.3-1.5					X										
	83	TP227	0.0-0.2							X								
	84		0.4-0.5			Natural												
	85	TP228	0.1-0.2			Fill				X								
	86		0.3-0.4															
	87		0.8-1.0															
	88		1.2-1.3															
	89	TP229	0.0-0.1							X								
	90		0.1-0.2															
	91		0.3-0.5															
	92		1.1-1.3															
2/11/15	93	Dupl S1	-	A	-	Soil			X									
3/11/15	94	Dupl S2	-		-				X									
5/11/15	95	Dupl S3	-		-				X									
5/11/15	96	Dupl S4	-		-													
6/11/15	97	Dupl S5	-		-													
5/11/15	98	FTP226	0.2	A	-	Material										X		

Remarks (comments/detection limits required):		Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag	
Relinquished By:	Date:	Time:	Received By:
Vittal B-S	9/11/15	1715	P.R.
			Date:
			9/11/2015

137123

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen				EIS Job Number: Date Results Required: Page: 5/5				FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram vboggaram@jkgroup.net.au											
Location:		Arndell Park, NSW					Sample Preserved in Esky on Ice												
Sampler:		JS					Tests Required												
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos				
5/11/15	99	FTP227	0.1	A	-	Material									X				
2/11/15	100	TB1	-	G	-	Soil								X					
3/11/15	101	TB2	-		-									X					
4/11/15	102	TB3	-		-									X					
5/11/15	103	TB4	-		-									X					
6/11/15	104	TB5	-		-									X					
3/11/15	105	PFR1	-	V	-	Water								X					
4/11/15	106	FR2	-		-									X					
Remarks (comments/detection limits required):							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag												
Relinquished By:			Date:		Time:		Received By:			Date:									
Vittal B-S			9/11/15		17.15		P. Ray			9/11/20									

137123

CLIENT DETAILS

Contact **Viittal Boggaram**
 Client **Jeffery & Katauskas Pty Ltd**
 Address **Rear 115 Wicks Road
 MACQUARIE PARK
 MACQUARIE PARK NSW 2113**

Telephone **(02) 9888 5000**
 Facsimile **(02) 9888 5004**
 Email **vboggaram@jkggroup.net.au**

Project **E28870KB Arndell Park**
 Order Number **(Not specified)**
 Samples **60**

LABORATORY DETAILS

Manager **Huong Crawford**
 Laboratory **SGS Alexandria Environmental**
 Address **Unit 16, 33 Maddox St
 Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
 Facsimile **+61 2 8594 0499**
 Email **au.environmental.sydney@sgs.com**

SGS Reference **SE145929 R0**
 Date Received **12 Nov 2015**
 Date Reported **20 Nov 2015**

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES



Andy Sutton
 Senior Organic Chemist



Dong Liang
 Metals/Inorganics Team Leader



Huong Crawford
 Production Manager

Parameter	Units	LOR
Sample Number	SE145929.001	SE145929.002
Sample Matrix	Soil	Soil
Sample Date	06 Nov 2015	06 Nov 2015
Sample Name	BH201_0.5-0.95	BH201_3.5-4.0
		BH202_1.5-1.95
		BH202_2.5-3.0

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	490	-	580	-
Exchangeable Sodium, Na	meq/100g	0.01	2.1	-	2.5	-
Exchangeable Sodium Percentage*	%	0.1	16.0	-	17.9	-
Exchangeable Potassium, K	mg/kg	2	140	-	170	-
Exchangeable Potassium, K	meq/100g	0.01	0.35	-	0.44	-
Exchangeable Potassium Percentage*	%	0.1	2.7	-	3.1	-
Exchangeable Calcium, Ca	mg/kg	2	270	-	30	-
Exchangeable Calcium, Ca	meq/100g	0.01	1.3	-	0.15	-
Exchangeable Calcium Percentage*	%	0.1	10.1	-	1.0	-
Exchangeable Magnesium, Mg	mg/kg	2	1100	-	1300	-
Exchangeable Magnesium, Mg	meq/100g	0.02	9.4	-	11	-
Exchangeable Magnesium Percentage*	%	0.1	71.2	-	77.9	-
Cation Exchange Capacity	meq/100g	0.02	13	-	14	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	4.3	7.4	4.6	5.0
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	240	610	1300	580
Resistivity (1:2)*	ohm cm	-	4200	1700	770	1800

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	83	230	920	280
Sulphate	mg/kg	0.5	110	110	220	120

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	MEDIUM CLAY	SILTY LOAM	SILTY CLAY	SANDY LOAM
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	22.0	15.2	13.6	13.5
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Parameter	Units	LOR
Sample Number	SE145929.005	SE145929.006
Sample Matrix	Soil	Soil
Sample Date	06 Nov 2015	06 Nov 2015
Sample Name	BH203_0.5-0.95	BH203_1.5-1.95
		BH204_1.5-1.95
		BH204_7.0-7.5

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	600	-	680	-
Exchangeable Sodium, Na	meq/100g	0.01	2.6	-	2.9	-
Exchangeable Sodium Percentage*	%	0.1	25.4	-	26.9	-
Exchangeable Potassium, K	mg/kg	2	55	-	110	-
Exchangeable Potassium, K	meq/100g	0.01	0.14	-	0.27	-
Exchangeable Potassium Percentage*	%	0.1	1.4	-	2.4	-
Exchangeable Calcium, Ca	mg/kg	2	300	-	130	-
Exchangeable Calcium, Ca	meq/100g	0.01	1.5	-	0.66	-
Exchangeable Calcium Percentage*	%	0.1	14.7	-	6.0	-
Exchangeable Magnesium, Mg	mg/kg	2	740	-	870	-
Exchangeable Magnesium, Mg	meq/100g	0.02	6.1	-	7.1	-
Exchangeable Magnesium Percentage*	%	0.1	58.6	-	64.6	-
Cation Exchange Capacity	meq/100g	0.02	10	-	11	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	4.9	7.3	7.5	8.1
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	320	210	1700	1000
Resistivity (1:2)*	ohm cm	-	3100	4800	570	970

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	53	4.4	1300	560
Sulphate	mg/kg	0.5	410	51	160	77

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY SLAY LOAM	LIGHT CLAY	SILTY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	15.4	11.2	16.9	12.0
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Parameter	Units	LOR
Sample Number	SE145929.009	SE145929.010
Sample Matrix	Soil	Soil
Sample Date	02 Nov 2015	02 Nov 2015
Sample Name	BH204_8.5-9.0	BH205_0.5-0.95
		BH205_3.0-3.45
		BH206_1.5-1.95

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	630	-	410
Exchangeable Sodium, Na	meq/100g	0.01	-	2.7	-	1.8
Exchangeable Sodium Percentage*	%	0.1	-	24.7	-	16.4
Exchangeable Potassium, K	mg/kg	2	-	83	-	90
Exchangeable Potassium, K	meq/100g	0.01	-	0.21	-	0.23
Exchangeable Potassium Percentage*	%	0.1	-	1.9	-	2.1
Exchangeable Calcium, Ca	mg/kg	2	-	540	-	410
Exchangeable Calcium, Ca	meq/100g	0.01	-	2.7	-	2.1
Exchangeable Calcium Percentage*	%	0.1	-	24.3	-	19.2
Exchangeable Magnesium, Mg	mg/kg	2	-	670	-	820
Exchangeable Magnesium, Mg	meq/100g	0.02	-	5.5	-	6.7
Exchangeable Magnesium Percentage*	%	0.1	-	49.1	-	62.3
Cation Exchange Capacity	meq/100g	0.02	-	11	-	11

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	8.2	7.5	7.9	5.5
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	1700	1900	1100	370
Resistivity (1:2)*	ohm cm	-	600	530	910	2700

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	1300	1100	570	250
Sulphate	mg/kg	0.5	130	200	210	10

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY CLAY	LIGHT CLAY	LIGHT CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	19.3	19.2	17.1	14.5
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Parameter	Units	LOR
Sample Number	SE145929.013	SE145929.014
Sample Matrix	Soil	Soil
Sample Date	02 Nov 2015	02 Nov 2015
Sample Name	BH206_4.0-4.5	BH206_7.0-7.5
		BH207_0.5-0.95
		BH207_3.0-3.45

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	-	570	-
Exchangeable Sodium, Na	meq/100g	0.01	-	-	2.5	-
Exchangeable Sodium Percentage*	%	0.1	-	-	13.5	-
Exchangeable Potassium, K	mg/kg	2	-	-	160	-
Exchangeable Potassium, K	meq/100g	0.01	-	-	0.41	-
Exchangeable Potassium Percentage*	%	0.1	-	-	2.2	-
Exchangeable Calcium, Ca	mg/kg	2	-	-	1200	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	-	6.1	-
Exchangeable Calcium Percentage*	%	0.1	-	-	33.5	-
Exchangeable Magnesium, Mg	mg/kg	2	-	-	1100	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	-	9.3	-
Exchangeable Magnesium Percentage*	%	0.1	-	-	50.7	-
Cation Exchange Capacity	meq/100g	0.02	-	-	18	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	8.1	8.6	5.1	7.0
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	900	680	470	420
Resistivity (1:2)*	ohm cm	-	1100	1500	2100	2400

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	400	260	85	63
Sulphate	mg/kg	0.5	66	54	330	160

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY LOAM	SILTY CLAY LOAM	SILTY CLAY	LIGHT CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	7.8	9.2	14.5	18.2
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Parameter	Units	LOR
Sample Number	SE145929.017	SE145929.018
Sample Matrix	Soil	Soil
Sample Date	02 Nov 2015	02 Nov 2015
Sample Name	BH207_6.0-6.45	BH207_10-10.5
		BH208_0.5-0.95
		BH208_4.5-4.95

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	-	410	-
Exchangeable Sodium, Na	meq/100g	0.01	-	-	1.8	-
Exchangeable Sodium Percentage*	%	0.1	-	-	7.5	-
Exchangeable Potassium, K	mg/kg	2	-	-	160	-
Exchangeable Potassium, K	meq/100g	0.01	-	-	0.42	-
Exchangeable Potassium Percentage*	%	0.1	-	-	1.8	-
Exchangeable Calcium, Ca	mg/kg	2	-	-	2800	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	-	14	-
Exchangeable Calcium Percentage*	%	0.1	-	-	59.2	-
Exchangeable Magnesium, Mg	mg/kg	2	-	-	920	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	-	7.6	-
Exchangeable Magnesium Percentage*	%	0.1	-	-	31.6	-
Cation Exchange Capacity	meq/100g	0.02	-	-	24	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	6.6	7.8	8.1	6.5
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	480	650	1200	540
Resistivity (1:2)*	ohm cm	-	2100	1500	820	1800

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	180	340	280	230
Sulphate	mg/kg	0.5	110	98	810	48

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	LIGHT CLAY	SILTY CLAY	LIGHT CLAY	MEDIUM CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	17.2	26.9	10.4	19.2
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Parameter	Units	LOR	Sample Number	SE145929.021	SE145929.022	SE145929.023	SE145929.024
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	06 Nov 2015	06 Nov 2015	06 Nov 2015	04 Nov 2015
			Sample Name	BH209_0.5-0.95	BH209_3.0-3.45	BH209_7.0-7.5	BH210_0.5-0.95

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	470	-	-	190
Exchangeable Sodium, Na	meq/100g	0.01	2.0	-	-	0.81
Exchangeable Sodium Percentage*	%	0.1	5.9	-	-	3.6
Exchangeable Potassium, K	mg/kg	2	170	-	-	93
Exchangeable Potassium, K	meq/100g	0.01	0.43	-	-	0.24
Exchangeable Potassium Percentage*	%	0.1	1.2	-	-	1.1
Exchangeable Calcium, Ca	mg/kg	2	5600	-	-	3200
Exchangeable Calcium, Ca	meq/100g	0.01	28	-	-	16
Exchangeable Calcium Percentage*	%	0.1	81.5	-	-	72.5
Exchangeable Magnesium, Mg	mg/kg	2	480	-	-	620
Exchangeable Magnesium, Mg	meq/100g	0.02	4.0	-	-	5.1
Exchangeable Magnesium Percentage*	%	0.1	11.4	-	-	22.8
Cation Exchange Capacity	meq/100g	0.02	35	-	-	22

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	7.8	8.1	8.0	7.5
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	380	310	530	1200
Resistivity (1:2)*	ohm cm	-	2600	3300	1900	820

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	29	23	240	50
Sulphate	mg/kg	0.5	130	37	40	1200

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	LIGHT CLAY	SANDY CLAY LOA	SILTY CLAY	FINE SANDY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	22.4	16.6	10.2	9.5
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Sample Number	SE145929.025	SE145929.026	SE145929.027	SE145929.028
Sample Matrix	Soil	Soil	Soil	Soil
Sample Date	04 Nov 2015	03 Nov 2015	03 Nov 2015	03 Nov 2015
Sample Name	BH210_3.0-3.45	BH211_0.5-0.95	BH212_0.5-0.95	BH212_3.0-3.45
Parameter	Units	LOR		

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	130	88	-
Exchangeable Sodium, Na	meq/100g	0.01	-	0.58	0.38	-
Exchangeable Sodium Percentage*	%	0.1	-	6.6	1.2	-
Exchangeable Potassium, K	mg/kg	2	-	31	210	-
Exchangeable Potassium, K	meq/100g	0.01	-	0.08	0.55	-
Exchangeable Potassium Percentage*	%	0.1	-	0.9	1.7	-
Exchangeable Calcium, Ca	mg/kg	2	-	900	5300	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	4.5	27	-
Exchangeable Calcium Percentage*	%	0.1	-	51.4	82.1	-
Exchangeable Magnesium, Mg	mg/kg	2	-	440	590	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	3.6	4.9	-
Exchangeable Magnesium Percentage*	%	0.1	-	41.1	15.0	-
Cation Exchange Capacity	meq/100g	0.02	-	8.8	32	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	7.4	6.6	7.2	6.1
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	320	86	270	220
Resistivity (1:2)*	ohm cm	-	3100	12000	3700	4500

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	46	7.4	8.6	71
Sulphate	mg/kg	0.5	29	32	38	58

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	FINE SANDY CLAY	HEAVY CLAY	HEAVY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	14.2	12.8	17.0	14.4
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Parameter	Units	LOR
Sample Number	SE145929.029	SE145929.030
Sample Matrix	Soil	Soil
Sample Date	03 Nov 2015	03 Nov 2015
Sample Name	BH212_5.5-6.0	BH213_1.5-1.95
		BH213_4.0-4.3
		BH214_0.5-0.95

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	640	-	530
Exchangeable Sodium, Na	meq/100g	0.01	-	2.8	-	2.3
Exchangeable Sodium Percentage*	%	0.1	-	19.1	-	14.7
Exchangeable Potassium, K	mg/kg	2	-	64	-	180
Exchangeable Potassium, K	meq/100g	0.01	-	0.16	-	0.47
Exchangeable Potassium Percentage*	%	0.1	-	1.1	-	3.0
Exchangeable Calcium, Ca	mg/kg	2	-	1800	-	950
Exchangeable Calcium, Ca	meq/100g	0.01	-	8.9	-	4.7
Exchangeable Calcium Percentage*	%	0.1	-	60.6	-	30.4
Exchangeable Magnesium, Mg	mg/kg	2	-	340	-	990
Exchangeable Magnesium, Mg	meq/100g	0.02	-	2.8	-	8.1
Exchangeable Magnesium Percentage*	%	0.1	-	19.2	-	51.9
Cation Exchange Capacity	meq/100g	0.02	-	15	-	16

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	7.1	7.3	7.9	7.2
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	290	590	220	640
Resistivity (1:2)*	ohm cm	-	3400	1700	4500	1600

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	120	44	34	200
Sulphate	mg/kg	0.5	35	150	29	200

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY CLAY	SANDY CLAY LOA	MEDIUM CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	11.8	15.1	10.0	17.8
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Parameter	Units	LOR
Sample Number	SE145929.033	SE145929.034
Sample Matrix	Soil	Soil
Sample Date	04 Nov 2015	03 Nov 2015
Sample Name	BH214_3.0-3.15	BH215_0.5-0.95
		BH215_4.5-4.95
		BH215_5.5-6.0

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	130	-	-
Exchangeable Sodium, Na	meq/100g	0.01	-	0.55	-	-
Exchangeable Sodium Percentage*	%	0.1	-	1.5	-	-
Exchangeable Potassium, K	mg/kg	2	-	150	-	-
Exchangeable Potassium, K	meq/100g	0.01	-	0.39	-	-
Exchangeable Potassium Percentage*	%	0.1	-	1.0	-	-
Exchangeable Calcium, Ca	mg/kg	2	-	6400	-	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	32	-	-
Exchangeable Calcium Percentage*	%	0.1	-	86.9	-	-
Exchangeable Magnesium, Mg	mg/kg	2	-	480	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	3.9	-	-
Exchangeable Magnesium Percentage*	%	0.1	-	10.6	-	-
Cation Exchange Capacity	meq/100g	0.02	-	37	-	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	6.3	7.3	7.2	7.9
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	860	260	740	710
Resistivity (1:2)*	ohm cm	-	1200	3800	1300	1400

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	510	5.5	450	280
Sulphate	mg/kg	0.5	140	22	91	84

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY CLAY	HEAVY CLAY	SILTY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	10.2	12.3	17.3	11.2
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Parameter	Units	LOR
Sample Number	SE145929.037	SE145929.038
Sample Matrix	Soil	Soil
Sample Date	03 Nov 2015	03 Nov 2015
Sample Name	BH215_8.0-8.3	BH216_0.5-0.95
		BH217_0.5-0.95
		BH217_1.5-1.95

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	160	180	-
Exchangeable Sodium, Na	meq/100g	0.01	-	0.70	0.79	-
Exchangeable Sodium Percentage*	%	0.1	-	1.8	6.0	-
Exchangeable Potassium, K	mg/kg	2	-	170	130	-
Exchangeable Potassium, K	meq/100g	0.01	-	0.43	0.34	-
Exchangeable Potassium Percentage*	%	0.1	-	1.1	2.6	-
Exchangeable Calcium, Ca	mg/kg	2	-	6500	1200	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	32	6.1	-
Exchangeable Calcium Percentage*	%	0.1	-	83.9	46.4	-
Exchangeable Magnesium, Mg	mg/kg	2	-	610	720	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	5.0	5.9	-
Exchangeable Magnesium Percentage*	%	0.1	-	13.1	45.0	-
Cation Exchange Capacity	meq/100g	0.02	-	38	13	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	7.8	7.2	6.7	5.0
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	570	280	180	580
Resistivity (1:2)*	ohm cm	-	1700	3600	5600	1700

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	230	6.2	18	430
Sulphate	mg/kg	0.5	60	38	58	220

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY CLAY	LIGHT CLAY	HEAVY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	11.3	15.4	12.1	21.2
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Parameter	Sample Number		SE145929.041	SE145929.042	SE145929.043	SE145929.044
	Sample Matrix		Soil	Soil	Soil	Soil
	Sample Date		04 Nov 2015	04 Nov 2015	04 Nov 2015	04 Nov 2015
	Sample Name		BH218_0.5-0.95	BH218_3.0-3.45	BH219_0.5-0.95	BH219_2.5-3.0
Units		LOR				

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	450	-	450	-
Exchangeable Sodium, Na	meq/100g	0.01	2.0	-	2.0	-
Exchangeable Sodium Percentage*	%	0.1	13.9	-	13.3	-
Exchangeable Potassium, K	mg/kg	2	95	-	160	-
Exchangeable Potassium, K	meq/100g	0.01	0.24	-	0.40	-
Exchangeable Potassium Percentage*	%	0.1	1.7	-	2.7	-
Exchangeable Calcium, Ca	mg/kg	2	1200	-	170	-
Exchangeable Calcium, Ca	meq/100g	0.01	6.1	-	0.83	-
Exchangeable Calcium Percentage*	%	0.1	43.0	-	5.6	-
Exchangeable Magnesium, Mg	mg/kg	2	720	-	1400	-
Exchangeable Magnesium, Mg	meq/100g	0.02	5.9	-	12	-
Exchangeable Magnesium Percentage*	%	0.1	41.3	-	78.4	-
Cation Exchange Capacity	meq/100g	0.02	14	-	15	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	6.4	6.2	4.3	6.4
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	1000	850	1900	880
Resistivity (1:2)*	ohm cm	-	990	1200	530	1100

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	390	510	1200	440
Sulphate	mg/kg	0.5	380	130	290	110

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	LIGHT CLAY	HEAVY CLAY	HEAVY CLAY	SILTY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	12.6	16.6	16.9	8.4
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Parameter	Units	LOR
Sample Number	SE145929.045	SE145929.046
Sample Matrix	Soil	Soil
Sample Date	05 Nov 2015	05 Nov 2015
Sample Name	TP220_0.4-0.5	TP221_0.1-0.2
		TP221_0.9-1.0
		TP222_0.1-0.2

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	280	130	-	46
Exchangeable Sodium, Na	meq/100g	0.01	1.2	0.56	-	0.20
Exchangeable Sodium Percentage*	%	0.1	7.5	6.5	-	1.9
Exchangeable Potassium, K	mg/kg	2	130	100	-	51
Exchangeable Potassium, K	meq/100g	0.01	0.34	0.27	-	0.13
Exchangeable Potassium Percentage*	%	0.1	2.1	3.1	-	1.2
Exchangeable Calcium, Ca	mg/kg	2	1400	660	-	1500
Exchangeable Calcium, Ca	meq/100g	0.01	7.0	3.3	-	7.6
Exchangeable Calcium Percentage*	%	0.1	43.8	38.0	-	72.3
Exchangeable Magnesium, Mg	mg/kg	2	910	560	-	310
Exchangeable Magnesium, Mg	meq/100g	0.02	7.4	4.5	-	2.6
Exchangeable Magnesium Percentage*	%	0.1	46.6	52.5	-	24.6
Cation Exchange Capacity	meq/100g	0.02	16	8.7	-	10

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	6.4	5.8	4.6	5.4
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	240	63	1100	51
Resistivity (1:2)*	ohm cm	-	4100	16000	940	20000

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	28	15	580	2.6
Sulphate	mg/kg	0.5	78	7.5	190	2.9

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	HEAVY CLAY	SANDY CLAY LOA	HEAVY CLAY	SANDY LOAM
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	15.0	11.3	21.9	13.9
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Parameter	Units	LOR
Sample Number	SE145929.049	SE145929.050
Sample Matrix	Soil	Soil
Sample Date	05 Nov 2015	05 Nov 2015
Sample Name	TP222_0.9-1.0	TP223_0.1-0.2
		TP224_0.0-0.2
		TP225_1.1-1.3

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	-	170	81	-
Exchangeable Sodium, Na	meq/100g	0.01	-	0.73	0.35	-
Exchangeable Sodium Percentage*	%	0.1	-	4.6	5.4	-
Exchangeable Potassium, K	mg/kg	2	-	120	69	-
Exchangeable Potassium, K	meq/100g	0.01	-	0.30	0.18	-
Exchangeable Potassium Percentage*	%	0.1	-	1.9	2.7	-
Exchangeable Calcium, Ca	mg/kg	2	-	1800	410	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	8.1	2.1	-
Exchangeable Calcium Percentage*	%	0.1	-	50.5	31.3	-
Exchangeable Magnesium, Mg	mg/kg	2	-	840	490	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	6.9	4.0	-
Exchangeable Magnesium Percentage*	%	0.1	-	43.1	60.6	-
Cation Exchange Capacity	meq/100g	0.02	-	16	6.6	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	5.5	6.1	4.4	7.2
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	86	110	660	1000
Resistivity (1:2)*	ohm cm	-	12000	9000	1500	1000

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	6.5	9.3	560	180
Sulphate	mg/kg	0.5	31	10	20	740

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SILTY CLAY	SILTY CLAY	SILTY CLAY LOAM	LIGHT CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	7.2	16.3	11.3	18.1
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Parameter	Units	LOR
Sample Number	SE145929.053	SE145929.054
Sample Matrix	Soil	Soil
Sample Date	05 Nov 2015	05 Nov 2015
Sample Name	TP226_0.4-0.5	TP227_0.3-0.5
		TP228_0.1-0.2
		TP228_0.9-1.0

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	39	670	45	-
Exchangeable Sodium, Na	meq/100g	0.01	0.17	2.9	0.20	-
Exchangeable Sodium Percentage*	%	0.1	1.1	32.3	1.5	-
Exchangeable Potassium, K	mg/kg	2	140	34	230	-
Exchangeable Potassium, K	meq/100g	0.01	0.37	0.09	0.60	-
Exchangeable Potassium Percentage*	%	0.1	2.3	1.0	4.7	-
Exchangeable Calcium, Ca	mg/kg	2	2500	230	2000	-
Exchangeable Calcium, Ca	meq/100g	0.01	13	1.1	9.9	-
Exchangeable Calcium Percentage*	%	0.1	79.7	12.7	77.9	-
Exchangeable Magnesium, Mg	mg/kg	2	330	590	240	-
Exchangeable Magnesium, Mg	meq/100g	0.02	2.7	4.9	2.0	-
Exchangeable Magnesium Percentage*	%	0.1	16.9	54.1	15.8	-
Cation Exchange Capacity	meq/100g	0.02	16	9.0	13	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	6.8	7.4	6.1	7.4
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	160	1900	150	350
Resistivity (1:2)*	ohm cm	-	6100	520	6500	2900

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	0.43	1200	8.4	14
Sulphate	mg/kg	0.5	6.0	170	13	44

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	SANDY CLAY LOA	MEDIUM CLAY	SILTY LOAM	SILTY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	11.9	17.3	16.5	14.1
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Sample Number	SE145929.057	SE145929.058	SE145929.059	SE145929.060
Sample Matrix	Soil	Soil	Soil	Soil
Sample Date	05 Nov 2015	05 Nov 2015	05 Nov 2015	05 Nov 2015
Sample Name	TP229_0.0-0.1	TP229_1.1-1.3	TP225_0.4-0.5	TP226_0.8-1.0
Parameter	Units	LOR		

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122 Tested: 18/11/2015

Exchangeable Sodium, Na	mg/kg	2	71	-	470	-
Exchangeable Sodium, Na	meq/100g	0.01	0.31	-	2.0	-
Exchangeable Sodium Percentage*	%	0.1	3.3	-	11.7	-
Exchangeable Potassium, K	mg/kg	2	230	-	140	-
Exchangeable Potassium, K	meq/100g	0.01	0.58	-	0.37	-
Exchangeable Potassium Percentage*	%	0.1	6.2	-	2.1	-
Exchangeable Calcium, Ca	mg/kg	2	1100	-	1700	-
Exchangeable Calcium, Ca	meq/100g	0.01	5.6	-	8.7	-
Exchangeable Calcium Percentage*	%	0.1	59.8	-	50.2	-
Exchangeable Magnesium, Mg	mg/kg	2	350	-	760	-
Exchangeable Magnesium, Mg	meq/100g	0.02	2.9	-	6.2	-
Exchangeable Magnesium Percentage*	%	0.1	30.7	-	35.9	-
Cation Exchange Capacity	meq/100g	0.02	9.4	-	17	-

pH in soil (1:2) Method: AN101 Tested: 17/11/2015

pH (1:2)	pH Units	-	5.9	6.2	7.6	7.1
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Conductivity (1:2) in soil Method: AN106 Tested: 17/11/2015

Conductivity (1:2) @25 C*	µS/cm	1	110	1300	390	220
Resistivity (1:2)*	ohm cm	-	8800	740	2600	4500

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: AN245 Tested: 17/11/2015

Chloride	mg/kg	0.25	22	860	12	3.7
Sulphate	mg/kg	0.5	11	220	87	54

Soil Texture (AS4419) Method: AN051/SP100.1 Tested: 16/11/2015

Texture Classification*	No unit	1	FINE SANDY LOAM	SILTY CLAY LOAM	SILTY CLAY	HEAVY CLAY
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Moisture Content Method: AN002 Tested: 17/11/2015

% Moisture	%w/w	0.5	17.5	16.7	11.5	17.6
------------	------	-----	------	------	------	------

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Conductivity (1:2) in soil Method: ME-(AU)-[ENV]AN106

Parameter	QC Reference	Units	LOR	DUP %RPD
Conductivity (1:2) @25 C*	LB089842	µS/cm	1	1%
	LB089843	µS/cm	1	1 - 5%
	LB089844	µS/cm	1	7%
Resistivity (1:2)*	LB089842	ohm cm	-	1%
	LB089843	ohm cm	-	1 - 5%
	LB089844	ohm cm	-	7%

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: ME-(AU)-[ENV]AN122

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Exchangeable Sodium, Na	LB089901	mg/kg	2		97%
	LB089902	mg/kg	2		95%
Exchangeable Sodium, Na	LB089901	meq/100g	0.01	<0.01	NA
	LB089902	meq/100g	0.01	<0.01	NA
Exchangeable Sodium Percentage*	LB089901	%	0.1		NA
	LB089902	%	0.1		NA
Exchangeable Potassium, K	LB089901	mg/kg	2		90%
	LB089902	mg/kg	2		88%
Exchangeable Potassium, K	LB089901	meq/100g	0.01	<0.01	NA
	LB089902	meq/100g	0.01	<0.01	NA
Exchangeable Potassium Percentage*	LB089901	%	0.1		NA
	LB089902	%	0.1		NA
Exchangeable Calcium, Ca	LB089901	mg/kg	2		85%
	LB089902	mg/kg	2		84%
Exchangeable Calcium, Ca	LB089901	meq/100g	0.01	<0.01	NA
	LB089902	meq/100g	0.01	<0.01	NA
Exchangeable Calcium Percentage*	LB089901	%	0.1		NA
	LB089902	%	0.1		NA
Exchangeable Magnesium, Mg	LB089901	mg/kg	2		88%
	LB089902	mg/kg	2		88%
Exchangeable Magnesium, Mg	LB089901	meq/100g	0.02	<0.02	NA
	LB089902	meq/100g	0.02	<0.02	NA
Exchangeable Magnesium Percentage*	LB089901	%	0.1		NA
	LB089902	%	0.1		NA
Cation Exchange Capacity	LB089901	meq/100g	0.02	<0.02	NA
	LB089902	meq/100g	0.02	<0.02	NA

Moisture Content Method: ME-(AU)-[ENV]AN002

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB089787	%w/w	0.5	0 - 6%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

pH in soil (1:2) Method: ME-(AU)-[ENV]AN101

Parameter	QC Reference	Units	LOR	DUP %RPD
pH (1:2)	LB089832	pH Units	-	1 - 2%
	LB089834	pH Units	-	1 - 7%
	LB089836	pH Units	-	0 - 3%

Soluble Anions in Soil from 1:2 DI Extract by Ion Chromatography Method: ME-(AU)-[ENV]AN245

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Chloride	LB089773	mg/kg	0.25	<0.25	0 - 6%	116%
	LB089774	mg/kg	0.25	<0.25	2%	110%
	LB089775	mg/kg	0.25	<0.25	10 - 12%	110%
Sulphate	LB089773	mg/kg	0.5	<0.5	4%	106%
	LB089774	mg/kg	0.5	<0.5	5%	106%
	LB089775	mg/kg	0.5	<0.5	1 - 10%	106%

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.						
AN051/SP100.1	A small sample of soil is kneaded with water and then pressed out into a ribbon . The behaviour of this ribbon is used to classify the soil into one of the texture classes in AS 4419.						
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:2 and the pH determined and reported on the extract after 1 hour extraction (pH 1:2) or after 1 hour extraction and overnight aging (pH (1:2) aged). Reference APHA 4500-H+.						
AN106	Conductivity : Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$ @ 25°C. For soils, an extract with water is made at a ratio of 1:2 and the EC determined and reported on the extract basis after the 1 hour extraction (EC(1:2)) or after the 1 hour extraction and overnight aging (EC(1:2) aged). Reference APHA 2510 B.						
AN106	Resistivity of the extract is reported on the extract basis and is the reciprocal of conductivity. Salinity and TDS can be calculated from the extract conductivity and is reported back to the soil basis.						
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1 M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.						
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below : <table> <tr> <td>ESP < 6%</td><td>non-sodic</td></tr> <tr> <td>ESP 6-15%</td><td>sodic</td></tr> <tr> <td>ESP >15%</td><td>strongly sodic</td></tr> </table> Method is referenced to Rayment and Higginson, 1992, sections 15D3 and 15N1.-	ESP < 6%	non-sodic	ESP 6-15%	sodic	ESP >15%	strongly sodic
ESP < 6%	non-sodic						
ESP 6-15%	sodic						
ESP >15%	strongly sodic						
AN245	Anions by Ion Chromatography: A water sample or extract is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO ₂ , NO ₃ and SO ₄ are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B						

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
		-	The sample was not analysed for this analyte
		NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: <http://www.sgs.com.au/~media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf>

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx>. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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SAMPLE RECEIPT ADVICE

SE145929

CLIENT DETAILS

Contact Viittal Boggaram
Client Jeffery & Katauskas Pty Ltd
Address Rear 115 Wicks Road
MACQUARIE PARK
MACQUARIE PARK NSW 2113

Telephone (02) 9888 5000
Facsimile (02) 9888 5004
Email vboggaram@jkgroup.net.au

Project **E28870KB Arndell Park**
Order Number (Not specified)
Samples 60

LABORATORY DETAILS

Manager Huong Crawford
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Thu 12/11/2015
Report Due Thu 19/11/2015
SGS Reference **SE145929**

SUBMISSION DETAILS

This is to confirm that 60 samples were received on Thursday 12/11/2015. Results are expected to be ready by Thursday 19/11/2015. Please quote SGS reference SE145929 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	60 Soils	Type of documentation received	COC
Date documentation received	12/11/2015	Samples received in good order	Yes
Samples received without headspace	N/A	Sample temperature upon receipt	24°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

54 soil samples unmarked for analyses on the COC have been placed on hold.
Samples analysed outside of their recommended holding time.
Samples BH209 4.5/4.95, TP225 0.0/0.2 and TO226 1.3/1.5 not received.
7 Extra samples received; samples logged on hold as per client email request.

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx> as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.



SAMPLE RECEIPT ADVICE

SE145929

CLIENT DETAILS

Client Jeffery & Katauskas Pty Ltd

Project E28870KB Arndell Park

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity (1:2) in soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:2)	Soil Texture (AS4419)	Soluble Anions in Soil from 1:2 DI Extract by Ion
001	BH201_0.5-0.95	2	13	1	1	1	2
002	BH201_3.5-4.0	2	-	1	1	1	2
003	BH202_1.5-1.95	2	13	1	1	1	2
004	BH202_2.5-3.0	2	-	1	1	1	2
005	BH203_0.5-0.95	2	13	1	1	1	2
006	BH203_1.5-1.95	2	-	1	1	1	2
007	BH204_1.5-1.95	2	13	1	1	1	2
008	BH204_7.0-7.5	2	-	1	1	1	2
009	BH204_8.5-9.0	2	-	1	1	1	2
010	BH205_0.5-0.95	2	13	1	1	1	2
011	BH205_3.0-3.45	2	-	1	1	1	2
012	BH206_1.5-1.95	2	13	1	1	1	2
013	BH206_4.0-4.5	2	-	1	1	1	2
014	BH206_7.0-7.5	2	-	1	1	1	2
015	BH207_0.5-0.95	2	13	1	1	1	2
016	BH207_3.0-3.45	2	-	1	1	1	2
017	BH207_6.0-6.45	2	-	1	1	1	2
018	BH207_10-10.5	2	-	1	1	1	2
019	BH208_0.5-0.95	2	13	1	1	1	2
020	BH208_4.5-4.95	2	-	1	1	1	2
021	BH209_0.5-0.95	2	13	1	1	1	2
022	BH209_3.0-3.45	2	-	1	1	1	2
023	BH209_7.0-7.5	2	-	1	1	1	2
024	BH210_0.5-0.95	2	13	1	1	1	2

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Client **Jeffery & Katauskas Pty Ltd**

Project **E28870KB Arndell Park**

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity (1:2) in soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:2)	Soil Texture (AS4419)	Soluble Anions in Soil from 1:2 DI Extract by Ion
025	BH210_3.0-3.45	2	-	1	1	1	2
026	BH211_0.5-0.95	2	13	1	1	1	2
027	BH212_0.5-0.95	2	13	1	1	1	2
028	BH212_3.0-3.45	2	-	1	1	1	2
029	BH212_5.5-6.0	2	-	1	1	1	2
030	BH213_1.5-1.95	2	13	1	1	1	2
031	BH213_4.0-4.3	2	-	1	1	1	2
032	BH214_0.5-0.95	2	13	1	1	1	2
033	BH214_3.0-3.15	2	-	1	1	1	2
034	BH215_0.5-0.95	2	13	1	1	1	2
035	BH215_4.5-4.95	2	-	1	1	1	2
036	BH215_5.5-6.0	2	-	1	1	1	2
037	BH215_8.0-8.3	2	-	1	1	1	2
038	BH216_0.5-0.95	2	13	1	1	1	2
039	BH217_0.5-0.95	2	13	1	1	1	2
040	BH217_1.5-1.95	2	-	1	1	1	2
041	BH218_0.5-0.95	2	13	1	1	1	2
042	BH218_3.0-3.45	2	-	1	1	1	2
043	BH219_0.5-0.95	2	13	1	1	1	2
044	BH219_2.5-3.0	2	-	1	1	1	2
045	TP220_0.4-0.5	2	13	1	1	1	2
046	TP221_0.1-0.2	2	13	1	1	1	2
047	TP221_0.9-1.0	2	-	1	1	1	2
048	TP222_0.1-0.2	2	13	1	1	1	2

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Client **Jeffery & Katauskas Pty Ltd**

Project **E28870KB Arndell Park**

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity (1:2) in soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:2)	Soil Texture (AS4419)	Soluble Anions in Soil from 1:2 DI Extract by Ion
049	TP222_0.9-1.0	2	-	1	1	1	2
050	TP223_0.1-0.2	2	13	1	1	1	2
051	TP224_0.0-0.2	2	13	1	1	1	2
052	TP225_1.1-1.3	2	-	1	1	1	2
053	TP226_0.4-0.5	2	13	1	1	1	2
054	TP227_0.3-0.5	2	13	1	1	1	2
055	TP228_0.1-0.2	2	13	1	1	1	2
056	TP228_0.9-1.0	2	-	1	1	1	2
057	TP229_0.0-0.1	2	13	1	1	1	2
058	TP229_1.1-1.3	2	-	1	1	1	2
059	TP225_0.4-0.5	2	13	1	1	1	2
060	TP226_0.8-1.0	2	-	1	1	1	2

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE AND CHAIN OF CUSTODY FORM

TO: SGS ENVIRONMENTAL SERVICES UNIT 16, 33 MADDOX STREET ALEXANDRIA NSW 2015 P: (02) 85940400 F: (02) 85940499 Attention: DANIEL / TRENT						EIS Job Number: E28870KB Date Results Required: STANDARD Page: 1 of 5						FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram Email: vboggaram@jkggroup.net.au								
Location: Arndell Park						Sample Preserved in Esky on Ice														
Sampler: JS						Tests Required														
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	CA5 (CEC)	AG3	TEXTURE (AS4419)	CLAY (AS1141)											
6/11/15	1	BH201	0.5/0.95	P	clay	X	X	X												
			2.5/3.0		shale															
	2	↓	BH202	3.5/4.0				X	X											
				0.5/0.95		clay														
	3	↓		1.5/1.95			X	X	X											
				2.5/3.0		shale		X	X											
4	↓		3.0/3.6																	
			0.5/0.95		clay	X	X	X												
5	↓	BH203	1.5/1.95		shale		X	X												
			2.5/3.0																	
2/11/15	7	BH204	4.0/4.5																	
			0.5/0.95		clay															
			1.5/1.95			X	X	X												
			3.0/3.45																	
			3.6/3.9		shale															
			5.5/6.0																	
	8	↓	7.0/7.5				X	X												
			8.5/9.0				X	X												
	10	BH205	0.5/0.95		clay	X	X	X												
			1.5/1.95																	
	11	↓	3.0/3.45				X	X												
			4.1/4.6		shale															
			5.5/6.0																	
			6.7/7.1																	
		BH206	0.5/0.95	↓	clay															

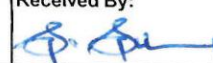
Remarks (comments/detection limits required):

Sample Containers:
 G - 250mg Glass Jar
 A - Ziplock Asbestos Bag
 P - Plastic Bag

Relinquished By:
 Vittal B.S

Date:
 11/11/15

Time:
 2.20

Received By:


Date:
 12/11/15

SAMPLE AND CHAIN OF CUSTODY FORM

TO: SGS ENVIRONMENTAL SERVICES UNIT 16, 33 MADDOX STREET ALEXANDRIA NSW 2015 P: (02) 85940400 F: (02) 85940499 Attention: DANIEL / TRENT	EIS Job Number: E28870KB Date Results Required: STANDARD Page: 2 of 5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram Email: vboggaram@jkggroup.net.au	
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Location: Arndell Park	Sample Preserved in Esky on Ice
Sampler: JS	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	CA5	AG3	TEXTURE (AS4419)	CLAY (AS1141)										
2/11/15	12	BH206	1.5/1.95	P	Clay	X	X	X											
			2.5/3.0		Shale														
	13		4.0/4.5				X	X											
			5.5/6.0																
	14		7.0/7.5				X	X											
			8.5/9.0		Shale														
	15	BH207	0.5/0.95		Clay	X	X	X											
			1.5/1.9																
	16		3.0/3.45				X	X											
			4.5/4.95																
	17		6.0/6.45				X	X											
			7.5/7.95																
	18		10/10.5		Shale		X	X											
	19	BH208	0.5/0.95		Sand	X	X	X											
			1.5/1.95		Clay														
			3.0/3.45																
	20		4.5/4.95				X	X											
			6.0/6.45																
			7.0/7.5		Shale														
			8.5/9.0																
6/11/15	21	BH209	0.5/0.95		Sand	X	X	X											
			1.5/1.95																
	22		3.0/3.45				X	X											
			4.5/4.95		Clay														
	23		7.0/7.5		Shale		X	X											

Remarks (comments/detection limits required):

Sample Containers:
 G - 250mg Glass Jar
 A - Ziplock Asbestos Bag
 P - Plastic Bag

Relinquished By: Vittal B-S	Date: 11/11/15	Time:	Received By: [Signature]	Date: 12/11/15
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SAMPLE AND CHAIN OF CUSTODY FORM

TO: SGS ENVIRONMENTAL SERVICES UNIT 16, 33 MADDOX STREET ALEXANDRIA NSW 2015 P: (02) 85940400 F: (02) 85940499 Attention: DANIEL / TRENT	EIS Job Number: E28870KB Date Results Required: STANDARD Page: 3 of 5	FROM: ENVIRONMENTAL INVESTIGATION SERVICES REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggaram Email: vboggaram@jkggroup.net.au	
---	--	---	---

Location: Arndell Park	Sample Preserved in Esky on Ice
Sampler: JS	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	CA5	AG3	TEXTURE (AS4419)	CLAY (AS1141)										
4/11/15	24	BH 210	0.5/0.95	P	clay	x	x	x											
			1.6/2.0		↓														
	25		3.0/3.45		shale		x	x											
			3.45/3.65		↓														
3/11/15	20	BH 211	0.5/0.95		clay	x	x	x											
			1.5/1.8		↓														
	27	BH 212	0.5/0.95		clay	x	x	x											
			1.5/1.95		↓														
	28		3.0/3.45		↓		x	x											
			4.5/4.6		shale														
	29		5.5/6.0		↓		x	x											
			7.2/7.4		↓														
		BH 213	0.5/0.95		clay														
	30		1.5/1.95		↓	x	x	x											
			3.0/3.45		↓														
	31		4.0/4.3		sand stone		x	x											
4/11/15	32	BH 214	0.5/0.95		clay	x	x	x											
			1.5/1.95		↓														
	33		3.0/3.15		shale		x	x											
			4.0/4.3		↓														
3/11/15	34	BH 215	0.5/0.95		Silt.	x	x	x											
			1.5/1.95		clay														
			3.0/3.45		↓														
	35		4.5/4.95		↓		x	x											
	36		5.5/6.0		shale		x	x											

Remarks (comments/detection limits required): 		Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag	
Relinquished By: Vittal B.S.	Date: 11/11/15	Time: 	Received By: [Signature]
		Date: 12/11/15 @ 2.20	

SAMPLE AND CHAIN OF CUSTODY FORM

TO:

SGS ENVIRONMENTAL SERVICES
UNIT 16, 33 MADDOX STREET
ALEXANDRIA NSW 2015
P: (02) 85940400
F: (02) 85940499

Attention: DANIEL / TRENT

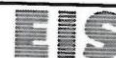
EIS Job Number: E28870KB

Date Results Required: STANDARD

Page: 4 of 5

FROM:

ENVIRONMENTAL INVESTIGATION SERVICES
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Vittal Boggaram
Email: vboggaram@jkggroup.net.au



Location: Arndell Park

Sampler: JS

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	CA5	AG3	TEXTURE (AS4419)	CLAY (AS1141)										
3/11/15		BH215	7.0/7.5	P	Shale														
	37		8.0/8.3		↓		X	X											
	38	BH216	0.5/0.95		Clay	X	X	X											2
			1.5/1.95		↓														
4/11/15	39	BH217	0.5/0.95		Clay	X	X	X											
	40		1.5/1.95		↓		X	X											
			2.8/3.0		Sand stone														
			3.6/4.0		↓														
	41	BH218	0.5/0.95		Clay	X	X	X											
			1.5/1.95		↓														
	42		3.0/3.45		↓		X	X											
			3.8/4.0		Shale														
	43	BH219	0.5/0.95		Clay	X	X	X											
			1.5/1.75		↓														
	44		2.5/3.0		Shale		X	X											
			3.2/3.5		↓														
			4.0/4.3		↓														
5/11/15		TP220	0.1/0.3		Clay														
	45		0.4/0.5		↓	X	X	X											
			0.7/0.9		↓														
	46	TP221	0.1/0.2		Clay	X	X	X											
			0.4/0.5		↓														
	47		0.9/1.0		↓		X	X											
	48	TP222	0.1/0.2		Clay	X	X	X											
	49		0.9/1.0		↓		X	X											

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:

Vittal B-S

Date:

4/11/15

Time:

Received By:

[Signature]

Date:

12/11/15 02:20

SAMPLE AND CHAIN OF CUSTODY FORM

TO:

SGS ENVIRONMENTAL SERVICES
UNIT 16, 33 MADDOX STREET
ALEXANDRIA NSW 2015
P: (02) 85940400
F: (02) 85940499

Attention: DANIEL / TRENT

EIS Job Number: E28870KB

Date Results Required: STANDARD

Page:

FROM:

ENVIRONMENTAL
INVESTIGATION
SERVICES

REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113

P: 02-9888 5000

F: 02-9888 5001

Attention:

Vittal Boggaram

Email:

vboggaram@jkggroup.net.au

EIS

Location: Arndell Park

Sampler: JS

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	CA5	AG3	TEXTURE (AS4419)	CLAY (AS1141)										
5/11/15	50	TP223	0.1/0.2	P	Clay	X	X	X											
		↓	0.4/0.5		↓														
	51	TP224	0.0/0.2		Clay	X	X	X											
		↓	0.3/0.4		↓														
	•	TP225	0.0/0.2		Silt	X	X	X											
	59	↓	0.4/0.5		Clay														
	52	↓	1.1/1.3		↓		X	X											
	53	TP226	0.4/0.5		Clay	X	X	X											
	60	↓	0.8/1.0		↓														
	•	↓	1.3/1.5		↓		X	X											
	54	TP227	0.3/0.5		Clay	X	X	X											
	55	TP228	0.1/0.2		Silt	X	X	X											
		↓	0.3/0.4		Sand														
	56	↓	0.9/1.0		↓		X	X											
		↓	1.2/1.3		Clay														
	57	TP229	0.0/0.1		Silt	X	X	X											
	58	↓	1.1/1.3	↓	Clay		X	X											

Remarks (comments/detection limits required):

Sample Containers:

G - 250mg Glass Jar

A - Ziplock Asbestos Bag

P - Plastic Bag

Relinquished By:

Vittal B-S

Date:

11/11/15

Time:

Received By:

[Signature]

Date:

12/11/15 02:20

AU.SampleReceipt.Sydney (Sydney)

From: Vittal Boggaram [VBoggaram@jkgroup.net.au]
Sent: Thursday, 12 November 2015 5:58 PM
To: AU.SampleReceipt.Sydney (Sydney)
Subject: Re: SE145929 - E28870KB

Hi Emily,

Can you please test the following samples from TP225 and TP266:

59 TP225 - 0.4m to 0.5m

60 TP226 - 0.8m to 1.0m

Please keep the rest of the extra samples. We don't need any testing on them at this stage.

Sent from Outlook

Regards,

Vittal Boggaram
Associate | Environmental Scientist

VBoggaram@jkgroup.net.au

EIS have a new website! [Click here to see for yourself.](#)



Environmental Investigation Services
CONSULTING ENVIRONMENTAL ENGINEERS AND SCIENTISTS
PO Box 976, North Ryde BC NSW 1670
115 Wicks Rd, Macquarie Park NSW 2113
T: +612 9888 5000 F: +612 9888 5001

This email and any attachments are confidential and may be privileged in which case neither is intended to be waived. If you have received this message in error, please notify us and remove it from your system. It is your responsibility to check any attachments for viruses and defects before opening or sending them on. At the Company'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.

From: AU.SampleReceipt.Sydney (Sydney) <[au.samplerceipt.sydney@sgs.com](mailto:au.samplerreceipt.sydney@sgs.com)>
Sent: Thursday, November 12, 2015 5:27 PM
Subject: SE145929 - E28870KB
To: Vittal Boggaram <vboggaram@jkgroup.net.au>

Dear Vittal,

SGS has received these samples.

Samples with "Red dots" next to them not received. Do you want another sample analysed?

Extra samples 203_5.5-5.8, 207_1.7-1.9, 209_3.6-3.8, 209_7.6-7.8, 211_1.7-1.8, 216_2.3-2.7 and 222_0.4-0.5 received.

Do you want them analysed?

Appendix F: Report Explanatory Notes

STANDARD SAMPLING PROCEDURE

These protocols specify the basic procedures to be used when sampling soils or groundwater for environmental site assessments undertaken by EIS.

The purpose of these protocols is to provide standard methods for: sampling, decontamination procedures for sampling equipment, sample preservation, sample storage and sample handling. Deviations from these procedures must be recorded.

Soil Sampling

- Prepare a borehole/test pit log or made a note of the sample description for stockpiles.
- Layout sampling equipment on clean plastic sheeting to prevent direct contact with ground surface. The work area should be at a distance from the drill rig/excavator such that the machine can operate in a safe manner.
- Ensure all sampling equipment has been decontaminated prior to use.
- Remove any surface debris from the immediate area of the sampling location.
- Collect samples and place in glass jar with a Teflon seal. This should be undertaken as quickly as possible to prevent the loss of any volatiles. If possible, fill the glass jars completely.
- Collect samples for asbestos analysis and place in a zip-lock plastic bag.
- Label the sampling containers with the EIS job number, sample location (eg. BH1), sampling depth interval and date. If more than one sample container is used, this should also be indicated (eg. 2 = Sample jar 1 of 2 jars).
- Photoionisation detector (PID) screening of volatile organic compounds (VOCs) should be undertaken on samples using the soil sample headspace method. Headspace measurements are taken following equilibration of the headspace gasses in partly filled zip-lock plastic bags. PID headspace data is recorded on the borehole/test pit log and the chain of custody forms.
- Record the lithology of the sample and sample depth on the borehole/test pit log generally in accordance with AS1726-1993²⁵.
- Store the sample in a sample container cooled with ice or chill packs. On completion of the sampling the sample container should be delivered to the lab immediately or stored in the refrigerator prior to delivery to the lab. All samples are preserved in accordance with the standards outlined in the report.
- Check for the presence of groundwater after completion of each borehole using an electronic dip metre or water whistle. Boreholes should be left open until the end of fieldwork. All groundwater levels in the boreholes should be rechecked on the completion of the fieldwork.
- Backfill the boreholes/test pits with the excavation cuttings or clean sand prior to leaving the site.

Decontamination Procedures for Soil Sampling Equipment

- All sampling equipment should be decontaminated between every sampling location. This excludes single use PVC tubing used for push tubes etc. Equipment and materials required for the decontamination include:
 - Phosphate free detergent (Decon 90);
 - Potable water;
 - Stiff brushes; and
 - Plastic sheets.

²⁵ Standards Australia, (1993), *Geotechnical Site Investigations*. (AS1726-1993)

- Ensure the decontamination materials are clean prior to proceeding with the decontamination.
- Fill both buckets with clean potable water and add phosphate free detergent to one bucket.
- In the bucket containing the detergent, scrub the sampling equipment until all the material attached to the equipment has been removed.
- Rinse sampling equipment in the bucket containing potable water.
- Place cleaned equipment on clean plastic sheets.

If all materials are not removed by this procedure, high-pressure water cleaning is recommended. If any equipment is not completely decontaminated by both these processes, then the equipment should not be used until it has been thoroughly cleaned.

Groundwater Sampling

Groundwater samples are more sensitive to contamination than soil samples and therefore adherence to this protocol is particularly important to obtain reliable, reproducible results. The recommendations detailed in AS/NZS 5667.1:1998 are considered to form a minimum standard.

The basis of this protocol is to maintain the security of the borehole and obtain accurate and representative groundwater samples. The following procedure should be used for collection of groundwater samples from previously installed groundwater monitoring wells.

- After monitoring well installation, at least three bore volumes should be pumped from the monitoring wells (well development) to remove any water introduced during the drilling process and/or the water that is disturbed during installation of the monitoring well. This should be completed prior to purging and sampling.
- Groundwater monitoring wells should then be left to recharge for at least three days before purging and sampling. Prior to purging or sampling, the condition of each well should be observed and any anomalies recorded on the field data sheets. The following information should be noted: the condition of the well, noting any signs of damage, tampering or complete destruction; the condition and operation of the well lock; the condition of the protective casing and the cement footing (raised or cracked); and, the presence of water between protective casing and well.
- Take the groundwater level from the collar of the piezometer/monitoring well using an electronic dip meter. The collar level should be taken (if required) during the site visit using a dumpy level and staff.
- Purging and sampling of piezometers/monitoring wells is done on the same site visit when using micro-purge (or other low flow) techniques.
- Layout and organize all equipment associated with groundwater sampling in a location where they will not interfere with the sampling procedure and will not pose a risk of contaminating samples. Equipment generally required includes:
 - Micropore filtration system or Stericup single-use filters (for heavy metals samples);
 - Filter paper for Micropore filtration system; Bucket with volume increments;
 - Sample containers: teflon bottles with 1 ml nitric acid, 75mL glass vials with 1 mL hydrochloric acid, 1 L amber glass bottles;
 - Bucket with volume increments;
 - Flow cell;
 - pH/EC/Eh/T meters;
 - Plastic drums used for transportation of purged water;
 - Esky and ice;
 - Nitrile gloves;
 - Distilled water (for cleaning);
 - Electronic dip meter;

- Low flow pump pack and associated tubing; and
- Groundwater sampling forms.
- If single-use stericup filtration is not used, clean the Micropore filtration system thoroughly with distilled water prior to use and between each sample. Filter paper should be changed between samples. 0.45um filter paper should be placed below the glass fibre filter paper in the filtration system.
- Ensure all non-disposable sampling equipment is decontaminated or that new disposable equipment is available prior to any work commencing at a new location. The procedure for decontamination of groundwater equipment is outlined at the end of this section.
- Disposable gloves should be used whenever samples are taken to protect the sampler and to assist in avoidance of contamination.
- Groundwater samples are obtained from the monitoring wells using low flow/micro-purge sampling equipment to reduce the disturbance of the water column and loss of volatiles.
- During pumping to purge the well, the pH, temperature, conductivity, dissolved oxygen, redox potential and groundwater levels are monitored (where possible) using calibrated field instruments to assess the development of steady state conditions. Steady state conditions are generally considered to have been achieved when the difference in the pH measurements was less than 0.2 units and the difference in conductivity was less than 10%.
- All measurements are recorded on specific data sheets.
- Once steady state conditions are considered to have been achieved, groundwater samples are obtained directly from the pump tubing and placed in appropriate glass bottles, BTEX vials or plastic bottles.
- All samples are preserved in accordance with water sampling requirements detailed in the NEPM 2013 and placed in an insulated container with ice. Groundwater samples are preserved by immediate storage in an insulated sample container with ice as outlined in the report text.
- Record the sample on the appropriate log in accordance with AS1726:1993. At the end of each water sampling complete a chain of custody form.

Decontamination Procedures for Groundwater Sampling Equipment

- All equipment associated with the groundwater sampling procedure (other than single-use items) should be decontaminated between every sampling location.
- The following equipment and materials are required for the decontamination procedure:
 - Phosphate free detergent;
 - Potable water;
 - Distilled water; and
 - Plastic Sheets or bulk bags (plastic bags).
- Fill one bucket with clean potable water and phosphate free detergent, and one bucket with distilled water.
- Flush potable water and detergent through pump head. Wash sampling equipment and pump head using brushes in the bucket containing detergent until all materials attached to the equipment are removed.
- Flush pump head with distilled water.
- Change water and detergent solution after each sampling location.
- Rinse sampling equipment in the bucket containing distilled water.
- Place cleaned equipment on clean plastic sheets.
- If all materials are not removed by this procedure that equipment should not be used until it has been thoroughly cleaned

QA/QC DEFINITIONS

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994²⁶) methods and those described in *Environmental Sampling and Analysis, A Practical Guide*, (H. Keith 1991²⁷).

Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection limit (MDL) for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations.

“The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit” Keith 1991.

Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD). Acceptable targets for precision in this report will be less than 50% RPD for concentrations greater than ten times the PQL, less than 75% RPD for concentrations between five and ten times the PQL and less than 100% RPD for concentrations that are less than five times the PQL.

Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured. The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes.

The proximity of an averaged result to the true value, where all random errors have been statistically removed. Accuracy is measured by percent recovery. Acceptable limits for accuracy generally lie between 70% to 130% recoveries. Certain laboratory methods may allow for values that lie outside these limits.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handling and analysis protocols and use of proper chain-of-custody and documentation procedures.

²⁶ US EPA, (1994), *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. (US EPA SW-846)

²⁷ Keith., H, (1991), *Environmental Sampling and Analysis, A Practical Guide*.

Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms; Sample receipt form;
- All sample results reported; All blank data reported;
- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

Comparability

Comparability is the evaluation of the similarity of conditions (eg. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

Blanks

The purpose of laboratory and field blanks is to check for artifacts and interferences that may arise during sampling and analysis.

Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{(\text{Spike Sample Result} - \text{Sample Result}) \times 100}{\text{Concentration of Spike Added}}$$

Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$

Appendix G: Calibration Documents



Air-Met Scientific P/L
7-11 Ceylon Street
Nunawading
Victoria 3131, Australia

Calibration Certificate

This document hereby certifies that this instrument detailed has been calibrated to the parameters listed below.

Certificate Print Date: 19 June, 2015

Call ID: 00176805

Calibration Date: 19 June, 2015

Arrow Job Code: 211149

Next Calibration Due: 19 December, 2015

Customer: Jeffery & Katauskas Pty Ltd & EIS
Type: Port Gas Det
Model: MINIRAE 2000
Serial No: 110-006735
Description: PORTABLE GAS DETECTOR

Sensor	Date Code	Gas Bottle No.	Calibration Gas and Concentration	C.F	C.V Certified	Instrument Readings		
						Before / Span Res.	After	
PID	/	SY22	ISOBUTYLENE 1000PPM			NIST 620PPM	1003PPM	
PID	/	SY45	ISOBUTYLENE 100PPM			NIST 59.2PPM	99.8PPM	
	/							
	/							
	/							
	/							

Completed by: Timothy Harmer

Signed: 

Australian Standard Alarm Levels ☒

CF - Conversion Factor, CV Compensated Value
CV = CF * Span Gas



AES

ACTIVE ENVIRONMENTAL SOLUTIONS

Calibration and Service Report – PID

Company: Environmental Investigation Ser
Contact: Jake Cashman
Address: PO Box 976
NORTH RYDE, NSW

Phone: 02 9888 5000

Fax:

Email: jcashman@jkgroup.net.au

Manufacturer: RAE
Instrument: MiniRAE 2000 - 110-901778
Model: MiniRAE 2000
Configuration:
Wireless:
Network ID:
Unit ID:
Details:

Serial #: 110-901778
Asset #:
Part #:
Sold: 14.12.2010
Last Cal: 28.02.2014
Job #: 1853
Cal Spec:
Order #: EIS PID 2A

Item	Test	Pass/Fail	Comments	Serial Number
Battery	NiCd, NiMH, Dry cell, Lilon	P		
Charger	Power Supply	-		
	Cradle, Travel Charger	-		
Pump	Flow	X	>500ml/min	
Filter	Filter, fitting, etc	X	Fitted new filter	002-3022-001
Alarms	Audible, visual, vibration	P		
Display	Operation	P		
Switches	Operation	P		
PCB	Operation	P		
Connectors	Condition	P		
Firmware	Version	P	V 2.00	
Datalogger	Operation	P		
Monitor Housing	Condition	P		
Case	Condition / Type	P		
Sensors				
	PID Lamp	P		
	PID Sensor	P		
	THP Sensor	P		

Engineer's Report

Checked PC configuration and data download
Unit serviced and calibrated

Melbourne
Sydney
Perth
Brisbane

Head Office
S14 Lvl 2
Unit 6
Unit 17

2 Merchant Avenue
6-8 Holden Street
41 Holder Way
23 Ashtan Place

THMASTOWN VIC 3074 T: +(613) 9464 2300 F: +(613) 9464 3421
ASHFIELD NSW 2131 T: +(612) 9716 5966 F: +(612) 9716 5988
MALAGA WA 6090 T: +(618) 9249 5663 F: +(618) 9249 5362
BANYO QLD 4014 T: +(617) 3267 1433 F: +(617) 3267 3559

sales@aesolutions.com.au

ISO Certified
9001:2008

www.aesolutions.com.au



AES

ACTIVE ENVIRONMENTAL SOLUTIONS

Calibration Certificate

Sensor	Type	Serial No.	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
PID	10.6 eV Lamp	106H820556	Isobutylene	100 ppm	S21306		0	100

Calibrated/Repaired by: AMEND ROSHAN KUMAR

Date: 27.03.2015

Next Due: 27.09.2015

Melbourne	Head Office	2 Merchant Avenue	THOMASTOWN VIC 3074	T: +(613) 9464 2300	F: +(613) 9464 3421
Sydney	S14 Lvl 2	6-8 Holden Street	ASHFIELD NSW 2131	T: +(612) 9716 5966	F: +(612) 9716 5988
Perth	Unit 6	41 Holder Way	MALAGA WA 6090	T: +(618) 9249 5663	F: +(618) 9249 5362
Brisbane	Unit 17	23 Ashtan Place	BANYO QLD 4014	T: +(617) 3267 1433	F: +(617) 3267 3559

sales@aesolutions.com.au

ISO Certified
9001:2008

www.aesolutions.com.au