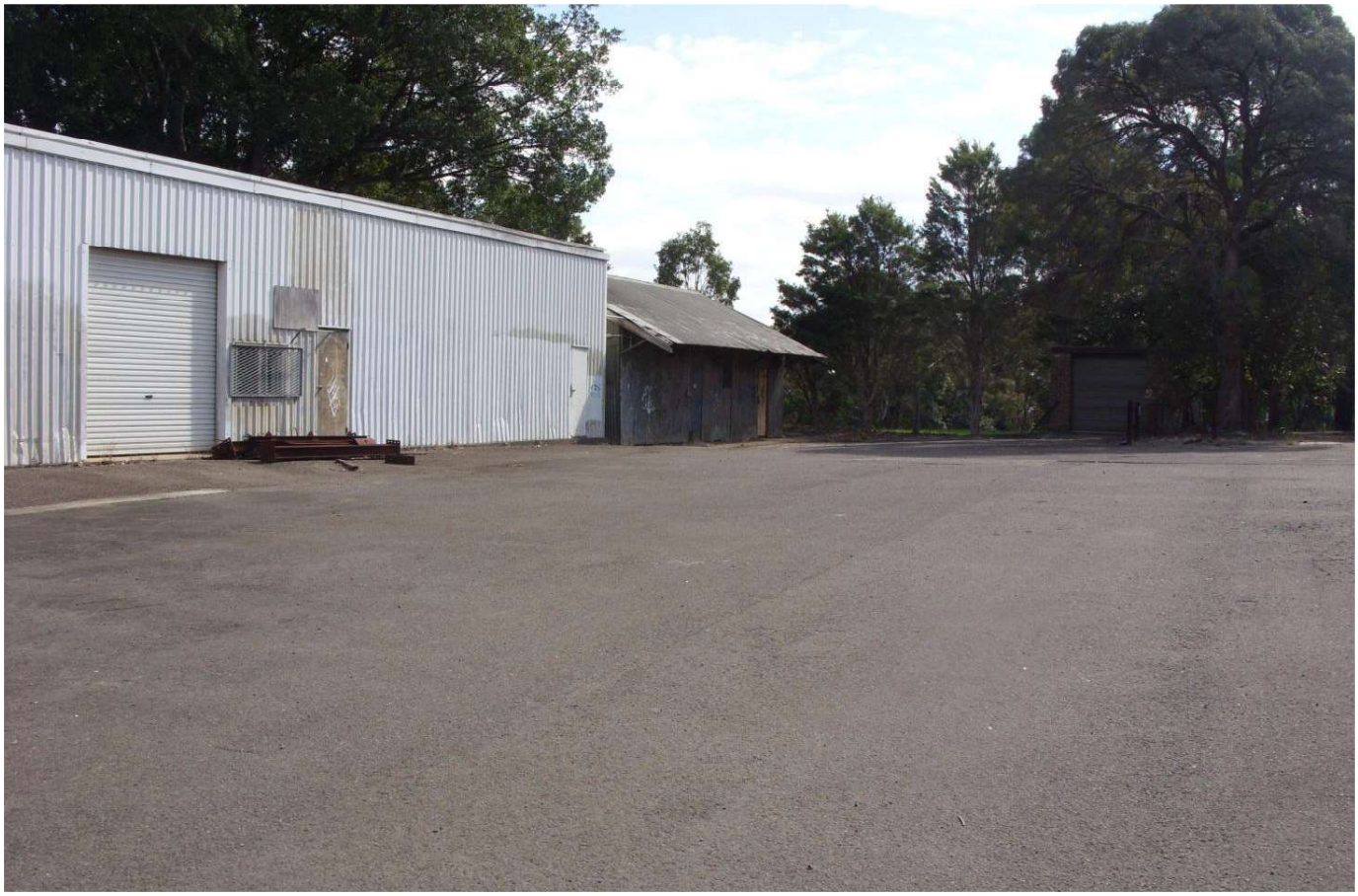
Appendix H

Environmental test pit logs



TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP01**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326541 N 6247501 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT: poor condition	D			
						FILL: Fly ash; light grey, white specks	M			TP0_0.05_AS No visible ACM from 10L sieve
	0.20					FILL: Sand; medium grained, yellow, sandstone gravels.	M			
	0.37					CLAY: medium plasticity, brown, minor gravel, plant roots.	M			
	0.50	PID=0.1 ppm	J&B			As above but red/brown, minor ironstone.	M			TP0_0.5_AS
	1	PID=0 ppm	J&B							TP0_1.0_AS
	1.20					As above, grey mottles increasing with depth, orange clay inclusions.	M			
	1.50					SHALE: extremely weathered, grey.	M			
						END OF TEST PIT AT 1.80 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP02**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326588 N 6247493 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
		PID=0 ppm	J&B			FILL: Silty clay, low plasticity, brown, subangular gravels, plant roots.	M			TP0_0_AS No visible ACM from 10L sieve
	0.50	PID=0 ppm	J&B			FILL: Gravelly clay, low/medium plasticity, grey, sandstone gravels and cobbles.	M			TP0_0.5_AS
	0.90					CLAY: medium plasticity, red, grey and brown mottles, minor red mottles, increasing grey mottles with depth.	M/D			
	1	PID=0 ppm	J&B							TP0_1.0_AS
	1.40					As above but grey with red mottles and ironstone gravels.	M/D			
	2					END OF TEST PIT AT 1.50 m				
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP03**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326599 N 6247495 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST D VST VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0	PID=0 ppm	J&B			FILL: Silty clay, low plasticity, brown, subangular gravels, plant roots.	M			TP03_0_AS No visible ACM from 10L sieve
	0.30	PID=0 ppm	J&B			CLAY: medium plasticity, red, grey and brown mottles, minor red mottles, increasing grey mottles with depth.	M/D			TP03_0.5_AS
	0.80					As above but grey with red and orange mottles and ironstone gravels.	M/D			
	1					END OF TEST PIT AT 1.00 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP04**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326549 N 6247487 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L ST VST MD D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT	D			
						FILL: Clayey gravel, subangular, grey, medium grained sands.	M			TP04_0.05_AS No visible ACM from 10L sieve
	0.20					CLAY: medium plasticity, red, grey mottles, minor ironstone, increasing grey mottles with depth.	M			
		PID=0.1 ppm	J&B							TP04_0.5_AS
	1	PID=0 ppm	J&B							TP04_1.0_AS
	1.20					SHALE: extremely weathered, grey.	M			
						END OF TEST PIT AT 1.30 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP05**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326564 N 6247496 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST VST D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0	PID=0 ppm	J&B			FILL: Gravelly clay, low/medium plasticity, brown, shale gravels, plant roots, minor red clay.	D			TP05_0_AS No visible ACM from 10L sieve
	0.20					FILL: Gravel, subangular basalt <2cm.	D			Redundant 100mm PVC pipe encountered at 0.2m BGL.
		PID=0 ppm	J&B							TP05_0.5_AS
	0.60					CLAY: Medium plasticity, grey, red/orange mottles, minor ironstone gravels, increasing grey mottles with depth.	M/D			
	1	PID=0 ppm	J&B							TP05_1.0_AS
	1.10					SHALE: extremely weathered, grey.	M/D			
						END OF TEST PIT AT 1.20 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP06**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326592 N 6247484 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST VST D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT	D			
						FILL: Gravelly clay, low plasticity, grey, subangular basalt gravels.	M/D			TP06_0.05_AS Dup1 and Dup1a No visible ACM from 10L sieve
	0.20					ASPHALT	D			
	0.25					FILL: Sandstone cobbles, white, matrix of sand, subangular basalt, fine sand grains, clinker, slag	M/D			
		PID=0 ppm	J&B							TP06_0.45_AS
	0.55					CLAY: Medium plasticity, red, brown mottles, minor ironstone, increasing grey mottles with depth.	M/D			
	0.90					As above, grey mottles increasing with depth, orange clay inclusions.	M/D			
	1	PID=0 ppm	J&B							TP06_1.0_AS
						END OF TEST PIT AT 1.10 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT NO.

TEST PIT ENVIRONMENTAL LOG

TP07

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326610 N 6247468 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST D VST VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT	D			
						FILL: Gravelly clay, low plasticity, yellow/brown, subangular basalt gravels, medium grained sand.	M			TP07_0.05_AS, Dup2_AS and Dup2a_AS No visible ACM from 10L sieve
	0.35	PID=0 ppm	J&B			CLAY: medium plasticity, red, brown mottles, minor ironstone, plant roots, increasing grey mottles with depth.	M/D			TP07_0.5_AS
	0.90					As above but grey, ironstone inclusions.	M/D			
	1					END OF TEST PIT AT 0.95 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP08**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326564 N 6247473 MGA 56**

Test Pit Information						Field Material Description				
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L ST VST MD D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT	D			
						FILL: Gravelly clay, low plasticity, yellow/brown, subangular basalt gravels to 4cm (ballast), ash, fine grained sand.	M			TP08_0.05_AS No visible ACM from 10L sieve
	0.28					CLAY: medium plasticity, grey, red/orange mottles, minor ironstone gravels.	M/D			
		PID=0.1 ppm	J&B							TP08_0.5_AS
	0.70					SHALE: extremely weathered, grey, orange inclusions.	M/D			
	1					END OF TEST PIT AT 0.80 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP09**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326550 N 6247454 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS FB, S VL, F L, ST MD, VST D, H VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.00	PID=0 ppm	J&B			FILL: Gravelly sandy clay, low plasticity, grey, subangular basalt gravels.	D			TP09_0_AS No visible ACM from 10L sieve
	0.23					ASPHALT	M			
	0.25					FILL: Gravelly sandy clay, roadbase, grey, subangular basalt gravels, plant roots.	M			
	0.44	PID=0.1 ppm	J&B			FILL: Gravelly clay, medium plasticity, brown, subangular basalt gravels, bricks, brown/orange clay inclusions, plastic, terracotta, medium grained sand, concrete, metal, minor slag.	M			TP09_0.5_AS No visible ACM from 10L sieve
	0.90					FILL: Sand, medium grained, yellow, bricks.	M			
	1	PID=0,2 ppm	J&B							TP09_1.0_AS
	1.20					As above, increasing in bricks, some slag, brown clay.	M			
	2									
	2.10	PID=0.1 ppm	J&B			SHALE: extremely weathered, grey, orange mottles.	D			TP09_2.1_AS
	3					END OF TEST PIT AT 2.50 m				

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP10

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326565 N 6247466 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0.1 ppm	J&B			ASPHALT	D			
						FILL: Gravelly clay, medium plasticity, grey/brown, subangular basalt gravels, medium grained sands, brown/orange clay inclusions, concrete, minor charcoal, slag, shale pieces.	M			TP10_0.05_AS No visible ACM from 10L sieve
	0.25					CLAY: medium plasticity, grey, red/orange mottles, minor ironstone gravels, becoming hard with depth.	M/D			
		PID=0.1 ppm	J&B							TP10_0.5_AS
	1.00 1	PID=0.1 ppm	J&B			SHALE: extremely weathered, grey.	M/D			TP10_1.0_AS
						END OF TEST PIT AT 1.20 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP11**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326563 N 6247500 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST VST D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0	PID=0 ppm	J&B			FILL: Gravelly clay, medium plasticity, brown, subangular basalt gravels, brick, fine-medium grained sands, brown/orange clay inclusions, concrete, minor ash, minor slag, fibro cement fragments.	M/D			TP11_0.05_AS 2 pieces of fibro cement from 10L sieve
	0.35	PID=0 ppm	J&B			CLAY: medium plasticity, red/brown, grey mottles, minor ironstone gravels, becoming hard with depth.	M/D			TP11_0.5_AS
	0.70					As above but grey with ironstone gravels and red/orange inclusions.	M/D			
	0.95					SHALE: extremely weathered, grey, minor ironstone inclusions and red/orange mottles.	M/D			
	1					END OF TEST PIT AT 1.00 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP12**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**

Excavation Method: **Excavator**

Surface RL:

Co-ords: **E 326536 N 6247493 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST / FB VL L MD D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0.1 ppm				ASPHALT	D			
						FILL: Clayey gravel, grey, subangular basalt gravels, orange clay inclusions, minor charcoal.	M/D			TP12_0.05_AS No visible ACM from 10L sieve
		PID=0 ppm								TP12_0.5_AS
	0.67					CLAY: medium plasticity, red/brown, plant roots, becoming hard with depth.	M/D			
	1	PID=0 ppm								TP12_1.0_AS
	1.10					As above but grey with ironstone gravels and red/orange inclusions.	M/D			
	1.40					SHALE: extremely weathered, grey, minor ironstone inclusions and red/orange mottles.	M/D			
						END OF TEST PIT AT 1.50 m				
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP13**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326571 N 6247483 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.10	PID=0 ppm				ASPHALT	D			TP13_0.1_AS No visible ACM from 10L sieve Stockpile above
						FILL: Gravelly clay, medium plasticity, grey/brown, subangular basalt gravels, medium grained sands, brown clay, minor ash, minor charcoal, plant roots.	M			
	0.30					CLAY: medium plasticity, red/grey, orange mottles, minor ironstone gravels, becoming grey and hard with depth.	M/D			
		PID=0 ppm								TP13_0.5_AS
	0.75					SHALE: extremely weathered, grey, minor ironstone inclusions and red/orange mottles.	M/D			
						END OF TEST PIT AT 0.80 m				
	1									
	2									
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP14**

SHEET 1 OF 1

Client:	**Sydney Water**	Date Commenced:	**14/5/15**
Project:		Date Completed:	**14/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326548 N 6247466 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0.05	PID=0 ppm	J&B			ASPHALT	D			
						FILL: Gravelly sandy clay, low plasticity, grey, subangular basalt gravels.	M/D			TP14_0.05_AS No visible ACM from 10L sieve
	0.30					FILL: Gravelly clay, medium plasticity, brown, pink and brown sandstone gravels with some cobbles, medium grained sands, minor slag and charcoal, fibro cement fragments.	M/D			TP14_0.5_AS 5 ACM fragments identified, from same location 1 fragment identified in 10L sieve. FC_Frag and FC_Frag_Sieve
		PID=0 ppm	J&B							
	0.95					CLAY: medium plasticity, red, minor grey mottles increasing with depth, ironstone gravels, plant roots becoming grey and hard with depth.	M/D			TP14_1.0_AS
	1	PID=0 ppm	J&B							
	1.30					SHALE: extremely weathered, grey, minor ironstone inclusions and red/orange mottles.	M/D			
	2					END OF TEST PIT AT 1.50 m				
	3									

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO. **TP15**

SHEET 1 OF 1

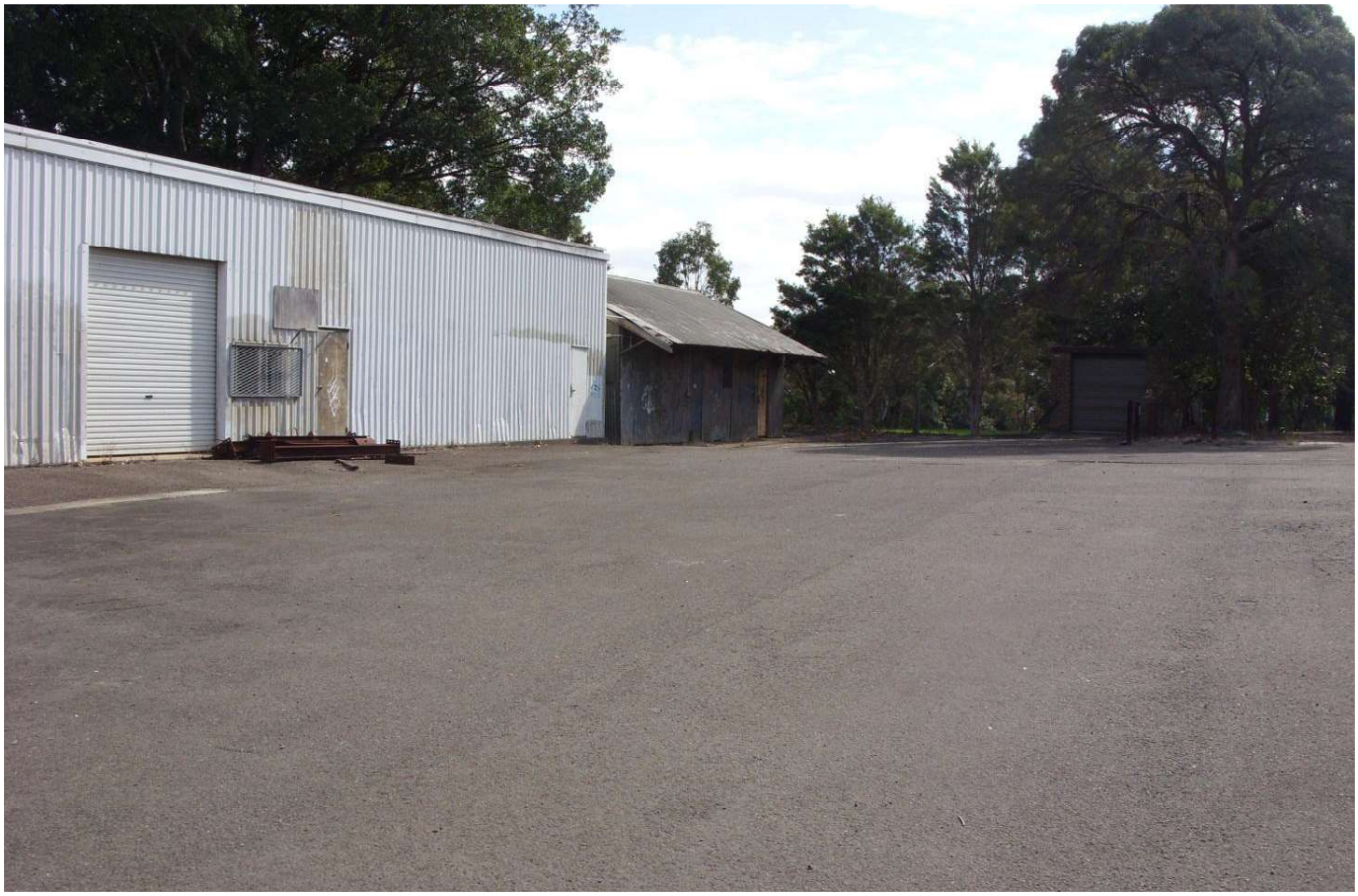
Client:	**Sydney Water**	Date Commenced:	**13/5/15**
Project:		Date Completed:	**13/5/15**
Test Pit Location:	**Sydney Water Ashfield Reservoir, 165-169 Holden St, Ashbury NSW**	Recorded By:	**DR**
Project Number:	**2201679B**	Log Checked By:	**MW**
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**E 326538 N 6247455 MGA 56**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F FB VL L MD ST VST D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
	0	PID=0.1 ppm	J&B			FILL: Gravelly sandy clay, low plasticity, grey, subangular basalt gravels.	D			TP15_0_AS No visible ACM from 10L sieve
	0.20					FILL: Gravelly sandy clay, medium plasticity, brown, subangular gravels, bricks, medium grained sand, slag.	M/D			
		PID=0 ppm	J&B							TP15_0.5_AS
	0.60					FILL: Sand, medium grained, yellow, bricks, plastic, terracotta, concrete, metal.	M/D			
	1	PID=0 ppm	J&B							TP15_1.0_AS
	1.20					FILL: Sand, medium grained, yellow/brown, bricks.	M			
	2.00 2	PID=0 ppm	J&B			FILL: Clay, medium plasticity, dark brown with orange, red and grey clays, gravels, bricks.	M			TP15_2.0_AS
	2.20					SHALE: extremely weathered, grey, orange mottles.	M/D			
		PID=0 ppm	J&B							TP15_2.9_AS
	3					END OF TEST PIT AT 3.00 m				

This test pit log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

Appendix I

Laboratory reports



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Brisbane Level 4, Northbank Plaza 69 Ann Street, GPO Box 2907 Brisbane QLD 4001 Tel: (07) 3854 6200 Fax: (07) 3854 6500

Melbourne Level 15, 28 Freshwater Place, PO Box 19016 Southbank VIC 3006 Tel: (03) 9861 1111 Fax: (03) 9861 1144

Sydney Level 27, Ernst & Young Centre 680 George Street, GPO Box 5394, Sydney NSW 2001 Tel: (02) 9272 5100 Fax: (02) 9272 5101

Perth Level 5, 503 Murray Street, PO Box 7181 Cloisters Square WA 6850 Tel: (08) 9489 9700 Fax: (08) 9489 9777

Singleton 188 John Street, PO Box 115 Singleton NSW 2330 Tel: (02) 6572 3377 Fax: (02) 6572 4080

Newcastle Level 3, 51-55 Bolton Street, PO Box 1162 Newcastle NSW, 2300 Tel: (02) 4929 8300 Fax: (02) 4929 8382

Chain of Custody

Order No: 76563

Job Title: BROADWAY SYD WATER - ESAS - Ashfield

PB Job Number: 72016798

Job Location: Ashfield

Project Manager: Imogen Powell

Results Expected by/on: Std (22/6/15)

Laboratory Name: SGS

Address: Alexandria;

Fax Results to: daniel Robinson

Fax Number: Imogen Powell

Phone Number: 0430 206565

Spreadsheet of Results Required: (Y) / N

Fax Number:

Phone Number: 85940400

Contact Name: Irfan

Delivery Method: Carrier

Quote Number: SY141023-1-15

Format: ESDAT

Turnaround Time Required: STD

Invoice to:

Comments: Page 1 of 5

Terms of Business	PB	Other	Checked
	✓		

	Date Sampled	Time	Sample I.D.	Container Size	Sample Location	Medium*	Preservative Type	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PCB's	Metals**	Asbestos	pH	CEC	Clay Content		Hold	Initials	Comments/Additional Information and/or Analysis Required
1	13/5	AM	TP01-0.05-AS	Soil Jar		S			/	/	/	/	/	/	/						DR	
2	13/5		TP01-0.5-AS												/	/	/					
	13/5		TP01-1.1-AS	1.0																/		
3	14/5		TP02-0-AS											/								
4	14/5		TP02-0.5-AS						/	/	/	/	/		/							
	14/5		TP02-1.0-AS																			
5	14/5		TP03-0-AS						/	/	/	/	/	/	/							
	14/5		TP03-0.5-AS																			
6	15/5	PM	TP04-0.05-AS	Ø					/	/	/	/	/	/	/							
	13/5	PM	TP04-0.5-AS																			
	13/5	PM	TP04-1.0-AS																			
7	14/5	AM	TP05-0-AS						/	/	/	/	/	/	/							

SGS Alexandria Environmental
SE139332 COC
Received: 15 – May – 2015

Relinquished by:	Relinquished by:	Relinquished by:
Date & Time: 15/5/15	Date & Time:	Date & Time:
Company:	Company:	Company:
Signature:	Signature:	Signature:
Received in Good Order & Condition by (Name): Gary Yin	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):
Date & Time: 14/5 2.30	Date & Time:	Date & Time:
Company: SGS	Company:	Company:
Signature:	Signature:	Signature:

Medium*: S = Soil, W = Water, V = Vapour

Legend**: (circle the following to be tested)

Metals: Al (As) Be (Cd) Co (Cr) (Cu) Fe (Hg) Li Mg Mn (Ni) (Pb) Se Sn V (Zn)

Samples on Ice: ☑ Yes ☐ No

Please fax back a signed copy when samples are received at the laboratory

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188 John Street,
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Newcastle
Level 3, 51-55 Bolton Street,
PO Box 1162 Newcastle NSW, 2300
Tel: (02) 4929 8300 Fax: (02) 4929 8382

Chain of Custody

Order No: 76564

Job Title: SYD WATER ESA's _ Ashfield
PB Job Number: 22016798
Job Location: Ashfield
Project Manager: Imogen Powell
Results Expected by/on: 22/6
Laboratory Name: SGS
Fax Results to: dan robinson
Address:
Fax Number: Imogen Powell
Phone Number: 0430 206 585
Spreadsheet of Results Required: (Y) / N
Format: ESDAT
Turnaround Time Required: STD
Invoice to:
Comments: Page 2 of 5

Terms of Business	PB	Other	Checked

Date Sampled	Time	Sample I.D.	Container Size	Sample Location	Medium*	Preservative Type	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PCBs	Metals**	As, Be, Co, Cr, Cu, Fe, Hg, Li, Mg, Mn, Ni, Pb, Se, Sn, V, Zn	Hold	Initials	Comments/Additional Information and/or Analysis Required
14/5		TP05_0.5_AS													IR	
		TP05_1.0_AS														
		TP06_0.05_AS														
8		TP06_0.45_AS						/	/	/	/	/	/	/		
		TP06_1.0_AS														
9		TP07_0.05_AS						/	/	/	/	/	/	/		
10		TP07_0.5_AS								/		/				
11		TP08_0.05_AS						/	/	/	/	/	/	/		
		TP08_0.5_AS														
12	13/5	TP09_0_AS										/				
13	13/5	TP09_0.5_AS						/	/	/	/	/	/	/		
14	13/5	TP09_1.0_AS						/	/	/		/				

Relinquished by:	Relinquished by:	Relinquished by:
Date & Time: 15/5 1200	Date & Time:	Date & Time:
Company: PB	Company:	Company:
Signature:	Signature:	Signature:
Received in Good Order & Condition by (Name): Benny Yan	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):
Date & Time: 15/5/15 2.30	Date & Time:	Date & Time:
Company: SGS	Company:	Company:
Signature:	Signature:	Signature:

Medium*: S = Soil, W = Water, V = Vapour

Legend**: (circle the following to be tested)

Metals: Al, As, Be, Cd, Co, Cr, Cu, Fe, Hg, Li, Mg, Mn, Ni, Pb, Se, Sn, V, Zn

Samples on Ice: ☑ Yes ☐ No

Please fax back a signed copy when samples are received at the laboratory

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☐ **Melbourne** Level 15, 28 Freshwater Place, PO Box 19016 Southbank VIC 3006 Tel: (03) 9861 1111 Fax: (03) 9861 1144

☑ **Sydney** Level 27, Ernst & Young Centre 680 George Street, GPO Box 5394, Sydney NSW 2001 Tel: (02) 9272 5100 Fax: (02) 9272 5101

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☐ **Singleton** 188 John Street, PO Box 115 Singleton NSW 2330 Tel: (02) 6572 3377 Fax: (02) 6572 4080

☐ **Newcastle** Level 3, 51-55 Bolton Street, PO Box 1182 Newcastle NSW, 2300 Tel: (02) 4929 8300 Fax: (02) 4929 8382

Chain of Custody

Order No: 76565

Job Title: SYD_WATER ESA's Ashfield

PB Job Number: 220679B

Job Location: Ashfield

Laboratory Name: SGS

Address:

Fax Number:

Phone Number:

Contact Name:

Delivery Method:

Quote Number:

Terms of Business	PB	Other	Checked

Project Manager: Imogen Powell

Results Expected by/on: 22/5/15

Fax Results to: Imogen Powell

Fax Number: Daniel Robinson

Phone Number: 0430 206 565

Spreadsheet of Results Required: (Y) / N

Format: ESDAT

Turnaround Time Required: STD

Invoice to:

Comments: 3 & 5

	Date Sampled	Time	Sample I.D.	Container Size	Sample Location	Medium*	Preservative Type	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PCB's	Metals**	Asbestos ID			Initials	Comments/Additional Information and/or Analysis Required
15	13/5		TP09_2-1_AS	Jar + Bag		S					/		/				DR	
16	13/5		TP10_0.05_AS	0		S			/	/	/		/	/	/			
17	13/5		TP10_0.5_AS			S					/		/					
	13/5		TP10_1.0_AS	2		S												
18	14/5		TP11_0_AS						/	/	/		/	/	/			* TP11-0-AS Frag ✱37
	14/5		TP11-0.5_AS															
19	14/5		TP12_0.05_AS						/	/	/		/	/				
20	14/5		TP12_0.5_AS						/	/	/	/	/	/	/			
	13/5		TP12_1.0_AS								[illegible]		[illegible]					
21	14/5		TP13_SP_AS								/		/					
22	14/5		TP13_0.05_AS	0.1		S			/	/	/	/	/	/	/			
	14/5		TP13_0.5_AS			S												

Relinquished by:	Relinquished by:	Relinquished by:
Date & Time: 15/5	Date & Time:	Date & Time:
Company: PB	Company:	Company:
Signature:	Signature:	Signature:
Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):
Date & Time: 15/5/15 2304	Date & Time:	Date & Time:
Company: SGS	Company:	Company:
Signature:	Signature:	Signature:

Medium*: S = Soil, W = Water, V = Vapour

Legend**: (circle the following to be tested)

Metals: Al (As) Be (Cd) Co (Cr) Cu Fe (Hg) Li Mg Mn (Ni) (Pb) Se Sn V (Zn)

Samples on Ice: ☑ Yes ☐ No

Please fax back a signed copy when samples are received at the laboratory

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☐ **Newcastle** Level 3, 51-55 Bolton Street, PO Box 1162 Newcastle NSW, 2300 Tel: (02) 4929 8300 Fax: (02) 4929 8382
☑ **Sydney** Level 27, Ernst & Young Centre 680 George Street, GPO Box 5394, Sydney NSW 2001 Tel: (02) 9272 5100 Fax: (02) 9272 5101

Chain of Custody

Order No: 76566

Job Title: SYD_WATER_ESA's_Ashfield
PB Job Number: 2201679B
Job Location: Ashfield
Laboratory Name: SGS
Address:
Fax Number:
Phone Number:
Contact Name:
Delivery Method:
Quote Number:
Terms of Business | PB | Other | Checked

Project Manager: Imogen Powell
Results Expected by/on:
Fax Results to: See Pg 1
Fax Number:
Phone Number:
Spreadsheet of Results Required: (Y) / N
Format:
Turnaround Time Required:
Invoice to:
Comments: 4 + 5

	Date Sampled	Time	Sample I.D.	Container Size	Sample Location	Medium*	Preservative Type	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PCB's	Metals**	Asbestos W/W	pH	Initials	Comments/Additional Information and/or Analysis Required
23	14/5		TP14_0.05_AS	Jar + Bag	0									/			
24	↓		TP14-0.5-AS	Jar + 3 bags				*	/	/	/	/	/	/	/		* FC_FRAG Sieve 34 (Please only analyse & weigh the Fragment from sieved bag)
25	↓		TP14-1.0-AS	[illegible]							/		/				
26	13/5		TP15-0-AS											/			
27			TP15-0.5-AS						/	/	/	/	/	/	/		
28			TP15-1.0-AS						/	/			/				
29			TP15-2.0-AS								/		/				
30	↓		TP15-2.9-AS								/		/				
31	13/5		FB130515						/	/	/	/	/				
32	14/5	FB14	FB130515						/	/	/	/	/				
33	14/5		Dup1-AS						/	/	/	/	/				
38	14/5		Dup2-AS						/	/	/	/	/				

Relinquished by: DR	Relinquished by:	Relinquished by:
Date & Time: 15/5	Date & Time:	Date & Time:
Company:	Company:	Company:
Signature:	Signature:	Signature:
Received in Good Order & Condition by (Name): Emily Yu	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):
Date & Time: 15/5/15 2.30	Date & Time:	Date & Time:
Company: SGS	Company:	Company:
Signature:	Signature:	Signature:

Medium*: S = Soil, W = Water, V = Vapour

Legend**: (circle the following to be tested)

Metals: Al (As) Be (Cd) Co (Cr) Cu Fe (Hg) Li Mg Mn (Ni) (Pb) Se Sn V (Zn)

Samples on Ice: ☑ Yes ☐ No

Please fax back a signed copy when samples are received at the laboratory

PARSONS BRINCKERHOFF

ABN 80 078 004 798

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PO Box 19016 Southbank VIC 3006
Tel: (03) 9861 1111 Fax: (03) 9861 1144

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PO Box 1182 Newcastle NSW, 2300
Tel: (02) 4929 8300 Fax: (02) 4929 8382

Sydney
Level 27, Ernst & Young Centre
680 George Street,
GPO Box 5394, Sydney NSW 2001
Tel: (02) 9272 5100 Fax: (02) 9272 5101

Chain of Custody

Order No: 76567

Job Title: SYD WATER ESA's _ Ashfield

PB Job Number: 72016796_AS

Job Location:

Project Manager: Imogen Powell

Laboratory Name:

Address:

Fax Number:

Phone Number:

Contact Name:

Delivery Method:

Quote Number:

Terms of Business	PB	Other	Checked

Results Expected by/on:

Fax Results to:

Fax Number:

Phone Number:

Spreadsheet of Results Required: Y / N

Format: Excel pdf

Turnaround Time Required:

Invoice to:

Comments: Page 5 of 5

Date Sampled	Time	Sample I.D.	Container Size	Sample Location	Medium*	Preservative Type	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PCB's	Metals**	Initials	Comments/Additional Information and/or Analysis Required
7/5		TS-AS						/						
7/5		TB-AS						/						
		~~TRIP~~												

Relinquished by:	Relinquished by:	Relinquished by:
Date & Time: 15/5	Date & Time:	Date & Time:
Company: PB	Company:	Company:
Signature:	Signature:	Signature:
Received in Good Order & Condition by (Name): Emily Yu.	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):
Date & Time: 18/5/15 3.30	Date & Time:	Date & Time:
Company: SGS	Company:	Company:
Signature:	Signature:	Signature:

Medium*: S = Soil, W = Water, V = Vapour

Legend**: (circle the following to be tested)

Metals: Al As Be Cd Co Cr Cu Fe Hg Li Mg Mn Ni Pb Se Sn V Zn

Samples on Ice: / Yes ☐ No

Please fax back a signed copy when samples are received at the laboratory

AU.SampleReceipt.Sydney (Sydney)

From: Powell, Imogen [IPowell@pb.com.au]
Sent: Tuesday, 19 May 2015 9:48 AM
To: AU.SampleReceipt.Sydney (Sydney)
Cc: Robinson, Daniel
Subject: RE: SE139332 - 2201679B

Hi Emily

The below in your email is correct.

Please confirm "FC-FRAG sieve" only to be analysed and the other bag of fragments to be placed on hold. – Yes. Please could you re mane this sample "TP14_FC_FRAG sieve"?

For TP11_0_AS asbestos to be analysed on the "Frag" sample. – Please undertake % w/w on TP11_0_As frag and TP11_0_AS.

Kind regards

Imogen

Imogen Powell
Senior Environmental Scientist

D: +61 2 92721478

IPowell@pb.com.au

From: AU.SampleReceipt.Sydney (Sydney) [mailto:AU.SampleReceipt.Sydney@sgs.com]
Sent: Tuesday, 19 May 2015 9:08 AM
To: Powell, Imogen; Robinson, Daniel
Subject: FW: SE139332 - 2201679B
Importance: High

Dear Imogen/Daniel,

Sample jars for TP09 and TP14 samples were all labelled as TP15.

Bags for TP14 were labelled correctly. So cross-matched with the "jarred" samples and able to match the respective samples.

TP15 series has a yellow tint on the labels so able to confirm the TP15 samples.

TP09 has project number written on the bag so able to match the respective samples as TP09.

2 Bags received for TP05_0_AS.

Please confirm "FC-FRAG sieve" only to be analysed and the other bag of fragments to be placed on hold.

For TP11_0_AS asbestos to be analysed on the "Frag" sample.

Please clarify as soon as possible so analysis can commence and the above is correct.

Thank You.

SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	38

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	Fri 15/5/2015
Report Due	Fri 22/5/2015
SGS Reference	**SE139332**

SUBMISSION DETAILS

This is to confirm that 38 samples were received on Friday 15/5/2015. Results are expected to be ready by Friday 22/5/2015. Please quote SGS reference SE139332 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	34 Soil,2 Material,2 Water	Type of documentation received	COC
Date documentation received	15/5/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.2°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.
14 soil samples have been placed on hold as per client's request. These samples will not be processed.
TP11_0_AS Bag for Soil sample was not received. Only the fragment will be analysed.
Some discrepencies on the sample depth marked on COC.

SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	pH in soil (1:5)	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	TP01_0.05_AS	28	13	25	11	1	10	12	8
002	TP01_0.5_AS	-	-	-	-	1	-	-	-
004	TP02_0.5_AS	28	13	25	11	1	10	12	8
005	TP03_0_AS	28	13	25	11	1	10	12	8
006	TP04_0.05_AS	28	13	25	11	1	10	12	8
007	TP05_0_AS	28	13	25	11	1	10	12	8
008	TP06_0.45_AS	28	13	25	11	1	10	12	8
009	TP07_0.05_AS	28	13	25	11	1	10	12	8
010	TP07_0.5_AS	-	-	25	-	-	-	-	-
011	TP08_0.05_AS	28	13	25	11	1	10	12	8
013	TP09_0.5_AS	28	13	25	11	1	10	12	8
014	TP09_1.0_AS	-	-	25	-	-	10	12	8
015	TP09_2.1_AS	-	-	25	-	-	-	-	-
016	TP10_0.05_AS	28	13	25	11	1	10	12	8
017	TP10_0.5_AS	-	-	25	-	-	-	-	-
018	TP11_0_AS	28	13	25	11	1	10	12	8
019	TP12_0.05_AS	-	-	25	-	-	10	12	8
020	TP12_0.5_AS	28	13	25	11	1	10	12	8
021	TP13_SP_AS	-	-	25	-	-	-	-	-
022	TP13_0.05_AS	28	13	25	11	1	10	12	8
024	TP14_0.5_AS	28	13	25	11	1	10	12	8

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	pH in soil (1:5)	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	TP14_1.0_AS	-	-	25	-	-	-	-	-
027	TP15_0.5_AS	28	13	25	11	1	10	12	8
028	TP15_1.0_AS	-	-	25	-	-	10	12	8
029	TP15_2.0_AS	-	-	25	-	-	-	-	-
030	TP15_2.9_AS	-	-	25	-	-	-	-	-
033	Dup1_AS	28	13	25	11	-	10	12	8
035	TS_AS	-	-	-	-	-	-	12	-
036	TB_AS	-	-	-	-	-	10	12	8
038	Dup2_AS	-	-	25	-	-	-	-	-

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	Clay and Fine Silt in Soil/Aggregate	Exchangeable Cations and Cation Exchange Capacity	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES from
001	TP01_0.05_AS	-	-	6	1	1	7
002	TP01_0.5_AS	1	13	-	-	1	-
003	TP02_0_AS	-	-	6	-	-	-
004	TP02_0.5_AS	-	-	-	1	1	7
005	TP03_0_AS	-	-	6	1	1	7
006	TP04_0.05_AS	-	-	6	1	1	7
007	TP05_0_AS	-	-	6	1	1	7
008	TP06_0.45_AS	-	-	6	1	1	7
009	TP07_0.05_AS	-	-	6	1	1	7
010	TP07_0.5_AS	-	-	-	1	1	7
011	TP08_0.05_AS	-	-	6	1	1	7
012	TP09_0_AS	-	-	6	-	-	-
013	TP09_0.5_AS	-	-	6	1	1	7
014	TP09_1.0_AS	-	-	-	1	1	7
015	TP09_2.1_AS	-	-	-	1	1	7
016	TP10_0.05_AS	-	-	6	1	1	7
017	TP10_0.5_AS	-	-	-	1	1	7
018	TP11_0_AS	-	-	-	1	1	7
019	TP12_0.05_AS	-	-	6	1	1	7
020	TP12_0.5_AS	-	-	-	1	1	7
021	TP13_SP_AS	-	-	-	1	1	7
022	TP13_0.05_AS	-	-	6	1	1	7
023	TP14_0.05_AS	-	-	6	-	-	-
024	TP14_0.5_AS	-	-	6	1	1	7

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre ID in bulk materials	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES from	Weight of Sample
025	TP14_1.0_AS	-	-	1	1	7	-
026	TP15_0_AS	-	6	-	-	-	-
027	TP15_0.5_AS	-	6	1	1	7	-
028	TP15_1.0_AS	-	-	1	1	7	-
029	TP15_2.0_AS	-	-	1	1	7	-
030	TP15_2.9_AS	-	-	1	1	7	-
033	Dup1_AS	-	-	1	1	7	-
034	TP14_FC_FRAG Sieve	1	-	-	-	-	1
036	TB_AS	-	-	-	1	-	-
037	TP11_0_AS_FRAG	1	-	-	-	-	1
038	Dup2_AS	-	-	1	1	7	-

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Water	OP Pesticides in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	PCBs in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
031	FB130515	28	13	22	11	7	9	12	8
032	FB140515	28	13	22	11	7	9	12	8

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE139332

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water
031	FB130515	1
032	FB140515	1

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ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
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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	**SE139332 R0**
Report Number	0000110823
Date Reported	22/5/2015
Date Started	20/5/2015

COMMENTS

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

Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

No respirable fibres detected in all samples using trace analysis technique as per AS 4964-2004.

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst

VOC's in Soil [AN433/AN434] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	Dup1_AS SOIL - 13/5/2015 SE139332.033	TS_AS SOIL - 13/5/2015 SE139332.035
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[85%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[100%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[92%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[88%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[91%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	-
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-

VOC's in Soil [AN433/AN434] Tested: 20/5/2015 (continued)

PARAMETER	UOM	LOR	TB_AS SOIL - 13/5/2015 SE139332.036
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433/AN434/AN410] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	Dup1_AS SOIL - 13/5/2015 SE139332.033	TB_AS SOIL - 13/5/2015 SE139332.036
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 19/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	**100**	**91**	<45
TRH C29-C36	mg/kg	45	<45	<45	**110**	**150**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	**180**	**200**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	**210**	**240**	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	**240**	<210

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**80**	<45	**100**	<45	**220**
TRH C29-C36	mg/kg	45	**300**	<45	**190**	<45	**250**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	**26**
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	**26**
TRH >C16-C34 (F3)	mg/kg	90	**270**	<90	**240**	<90	**390**
TRH >C34-C40 (F4)	mg/kg	120	**130**	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**380**	<110	**300**	<110	**470**
TRH C10-C40 Total	mg/kg	210	**380**	<210	**300**	<210	**470**

PARAMETER	UOM	LOR	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**94**	**45**	<45	**79**	**50**
TRH C29-C36	mg/kg	45	**100**	<45	<45	**50**	**83**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**180**	<90	<90	**120**	**110**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**200**	<110	<110	**130**	**130**
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	Dup1_AS SOIL - 13/5/2015 SE139332.033	TB_AS SOIL - 13/5/2015 SE139332.036
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**460**	<45	<45	**91**	<45
TRH C29-C36	mg/kg	45	**270**	<45	<45	**330**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	**29**	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	**29**	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**640**	<90	<90	**290**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	**160**	<120
TRH C10-C36 Total	mg/kg	110	**730**	<110	<110	**420**	<110
TRH C10-C40 Total	mg/kg	210	**730**	<210	<210	**420**	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Naphthalene	mg/kg	0.1	<0.1	<0.1	0.5	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	1.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	0.6	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	0.3	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.2	0.8	3.7	<0.1	0.3
Anthracene	mg/kg	0.1	<0.1	0.2	0.8	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.8	1.4	5.1	0.2	0.7
Pyrene	mg/kg	0.1	0.8	1.3	5.4	0.2	0.7
Benzo(a)anthracene	mg/kg	0.1	0.9	0.6	2.8	0.2	0.4
Chrysene	mg/kg	0.1	0.7	0.4	2.5	0.1	0.4
Benzo(b&j)fluoranthene	mg/kg	0.1	1.0	0.6	2.6	0.2	0.7
Benzo(k)fluoranthene	mg/kg	0.1	0.6	0.3	1.6	0.1	0.2
Benzo(a)pyrene	mg/kg	0.1	1.1	0.6	3.0	0.2	0.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.0	0.5	2.4	0.2	0.5
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.5	0.2	1.7	0.2	0.3
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	1.5	0.9	4.1	0.2	0.7
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	1.6	1.0	4.1	0.3	0.8
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	1.6	0.9	4.1	0.3	0.7
Total PAH	mg/kg	0.8	7.6	7.0	34	1.5	4.7

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP07_0.5_AS SOIL - 14/5/2015 SE139332.010	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.1	0.2	<0.1	0.1	0.3
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	0.4	<0.1	0.2	0.9
Pyrene	mg/kg	0.1	0.1	0.4	<0.1	0.3	0.9
Benzo(a)anthracene	mg/kg	0.1	<0.1	0.3	<0.1	0.2	0.5
Chrysene	mg/kg	0.1	<0.1	0.3	<0.1	0.2	0.4
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.3	<0.1	0.2	0.6
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.2	<0.1	0.1	0.2
Benzo(a)pyrene	mg/kg	0.1	<0.1	0.3	<0.1	0.1	0.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	0.6
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.1	<0.1	0.1	0.3
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	0.4	<0.2	<0.2	0.8
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	0.5	<0.3	<0.3	0.9
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	0.4	<0.2	0.2	0.8
Total PAH	mg/kg	0.8	<0.8	2.7	<0.8	1.5	5.3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014	TP09_2.1_AS SOIL - 13/5/2015 SE139332.015	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP10_0.5_AS SOIL - 13/5/2015 SE139332.017	TP11_0_AS SOIL - 14/5/2015 SE139332.018
Naphthalene	mg/kg	0.1	0.6	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	1.5	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	2.3	<0.1	<0.1	<0.1	0.3
Anthracene	mg/kg	0.1	1.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	7.3	<0.1	<0.1	<0.1	0.5
Pyrene	mg/kg	0.1	8.3	<0.1	<0.1	<0.1	0.6
Benzo(a)anthracene	mg/kg	0.1	5.6	<0.1	<0.1	<0.1	0.3
Chrysene	mg/kg	0.1	4.1	<0.1	<0.1	<0.1	0.3
Benzo(b&j)fluoranthene	mg/kg	0.1	8.3	<0.1	<0.1	<0.1	0.4
Benzo(k)fluoranthene	mg/kg	0.1	3.7	<0.1	<0.1	<0.1	0.1
Benzo(a)pyrene	mg/kg	0.1	7.0	<0.1	<0.1	<0.1	0.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	4.9	<0.1	<0.1	<0.1	0.3
Dibenzo(a&h)anthracene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	3.2	<0.1	<0.1	<0.1	0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	9.5	<0.2	<0.2	<0.2	0.4
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	9.5	<0.3	<0.3	<0.3	0.5
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	9.5	<0.2	<0.2	<0.2	0.4
Total PAH	mg/kg	0.8	59	<0.8	<0.8	<0.8	3.1

PARAMETER	UOM	LOR	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_SP_AS SOIL - 14/5/2015 SE139332.021	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024
Naphthalene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	2.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	1.5
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	1.2
Acenaphthylene	mg/kg	0.1	0.2	0.7	0.2	0.2	0.4
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	5.2
Fluorene	mg/kg	0.1	0.1	0.2	<0.1	<0.1	4.1
Phenanthrene	mg/kg	0.1	1.3	2.1	0.9	1.9	30
Anthracene	mg/kg	0.1	0.2	0.6	0.2	0.3	7.4
Fluoranthene	mg/kg	0.1	1.7	5.5	1.7	3.7	16
Pyrene	mg/kg	0.1	1.5	5.4	1.8	3.6	24
Benzo(a)anthracene	mg/kg	0.1	0.8	3.6	1.0	1.3	14
Chrysene	mg/kg	0.1	0.6	2.7	0.8	1.1	12
Benzo(b&j)fluoranthene	mg/kg	0.1	0.7	3.5	0.8	1.3	12
Benzo(k)fluoranthene	mg/kg	0.1	0.4	1.8	0.5	0.7	3.4
Benzo(a)pyrene	mg/kg	0.1	0.7	3.6	0.9	1.4	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.6	2.5	0.7	1.2	1.8
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	0.6
Benzo(ghi)perylene	mg/kg	0.1	0.3	1.3	0.4	0.6	3.4
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	0.9	4.9	1.2	1.8	14
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	1.0	4.9	1.3	1.9	14
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	1.0	4.9	1.2	1.9	14
Total PAH	mg/kg	0.8	9.1	34	9.9	17	150

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	TP14_1.0_AS SOIL - 14/5/2015 SE139332.025	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	TP15_2.0_AS SOIL - 13/5/2015 SE139332.029	TP15_2.9_AS SOIL - 13/5/2015 SE139332.030
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	**0.1**	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	**0.5**	**0.3**	**0.3**	<0.1
Anthracene	mg/kg	0.1	<0.1	**0.1**	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**0.9**	**1.0**	**0.5**	<0.1
Pyrene	mg/kg	0.1	<0.1	**0.9**	**1.1**	**0.5**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.5**	**0.6**	**0.3**	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.5**	**0.5**	**0.3**	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.5**	**0.7**	**0.3**	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.2**	**0.3**	**0.2**	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.4**	**0.7**	**0.4**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.2**	**0.5**	**0.2**	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	**0.2**	**0.3**	**0.1**	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	**0.6**	**1.0**	**0.5**	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	**0.7**	**1.1**	**0.6**	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	**0.6**	**1.0**	**0.5**	<0.2
Total PAH	mg/kg	0.8	<0.8	**4.9**	**6.2**	**3.2**	<0.8

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033	Dup2_AS SOIL - 13/5/2015 SE139332.038
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**0.1**	**0.2**
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**0.5**
Pyrene	mg/kg	0.1	<0.1	**0.5**
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.3**
Chrysene	mg/kg	0.1	<0.1	**0.3**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.3**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.2**
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.3**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.2**
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	**0.1**
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	**0.4**
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	**0.5**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	**0.4**
Total PAH	mg/kg	0.8	<0.8	**2.8**

OC Pesticides in Soil [AN400/AN420] Tested: 19/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1

OP Pesticides in Soil [AN400/AN420] Tested: 19/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

PARAMETER	UOM	LOR	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

OP Pesticides in Soil [AN400/AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2

PCBs in Soil [AN400/AN420] Tested: 19/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PCBs in Soil [AN400/AN420] Tested: 19/5/2015 (continued)

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033
Arochlor 1016	mg/kg	0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1

pH in soil (1:5) [AN101] Tested: 21/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP01_0.5_AS SOIL - 13/5/2015 SE139332.002	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006
pH	pH Units	-	8.1	5.5	8.2	7.2	8.9

PARAMETER	UOM	LOR	TP05_0_AS SOIL - 14/5/2015 SE139332.007	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013
pH	pH Units	-	7.6	7.9	8.3	9.1	8.8

PARAMETER	UOM	LOR	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024
pH	pH Units	-	8.5	8.5	7.6	9.0	7.4

PARAMETER	UOM	LOR	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027
pH	pH Units	-	8.2

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.5_AS SOIL - 13/5/2015 SE139332.002
Exchangeable Sodium, Na	mg/kg	2	**150**
Exchangeable Sodium, Na	meq/100g	0.01	**0.67**
Exchangeable Sodium Percentage*	%	0.1	**5.4**
Exchangeable Potassium, K	mg/kg	2	**130**
Exchangeable Potassium, K	meq/100g	0.01	**0.34**
Exchangeable Potassium Percentage*	%	0.1	**2.7**
Exchangeable Calcium, Ca	mg/kg	2	**880**
Exchangeable Calcium, Ca	meq/100g	0.01	**4.4**
Exchangeable Calcium Percentage*	%	0.1	**35.9**
Exchangeable Magnesium, Mg	mg/kg	2	**840**
Exchangeable Magnesium, Mg	meq/100g	0.02	**6.9**
Exchangeable Magnesium Percentage*	%	0.1	**56.0**
Cation Exchange Capacity	meq/100g	0.02	**12**

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest [AN040/AN320] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Arsenic, As	mg/kg	3	4	11	6	4	3
Cadmium, Cd	mg/kg	0.3	0.7	0.5	0.4	0.6	<0.3
Chromium, Cr	mg/kg	0.3	19	22	24	18	13
Copper, Cu	mg/kg	0.5	51	20	26	86	15
Lead, Pb	mg/kg	1	170	110	210	120	51
Nickel, Ni	mg/kg	0.5	62	11	25	67	18
Zinc, Zn	mg/kg	0.5	260	71	150	160	67

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP07_0.5_AS SOIL - 14/5/2015 SE139332.010	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013
Arsenic, As	mg/kg	3	4	<3	12	<3	<3
Cadmium, Cd	mg/kg	0.3	<0.3	0.3	0.4	0.4	0.4
Chromium, Cr	mg/kg	0.3	38	15	25	42	12
Copper, Cu	mg/kg	0.5	15	43	1.1	40	57
Lead, Pb	mg/kg	1	17	34	15	16	59
Nickel, Ni	mg/kg	0.5	36	11	0.7	130	77
Zinc, Zn	mg/kg	0.5	44	47	8.0	67	79

PARAMETER	UOM	LOR	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014	TP09_2.1_AS SOIL - 13/5/2015 SE139332.015	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP10_0.5_AS SOIL - 13/5/2015 SE139332.017	TP11_0_AS SOIL - 14/5/2015 SE139332.018
Arsenic, As	mg/kg	3	4	<3	<3	3	6
Cadmium, Cd	mg/kg	0.3	0.3	<0.3	0.5	<0.3	0.4
Chromium, Cr	mg/kg	0.3	12	2.7	31	4.4	15
Copper, Cu	mg/kg	0.5	33	9.5	110	2.9	48
Lead, Pb	mg/kg	1	61	7	76	8	130
Nickel, Ni	mg/kg	0.5	13	<0.5	91	<0.5	35
Zinc, Zn	mg/kg	0.5	52	4.2	180	3.6	400

PARAMETER	UOM	LOR	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_SP_AS SOIL - 14/5/2015 SE139332.021	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024
Arsenic, As	mg/kg	3	<3	15	<3	4	7
Cadmium, Cd	mg/kg	0.3	0.4	1.1	<0.3	0.4	0.5
Chromium, Cr	mg/kg	0.3	9.0	27	8.0	15	15
Copper, Cu	mg/kg	0.5	79	13	32	35	31
Lead, Pb	mg/kg	1	64	490	25	64	82
Nickel, Ni	mg/kg	0.5	61	3.3	7.5	23	39
Zinc, Zn	mg/kg	0.5	190	2400	56	70	140

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest [AN040/AN320] Tested: 20/5/2015 (continued)

PARAMETER	UOM	LOR	TP14_1.0_AS SOIL - 14/5/2015 SE139332.025	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	TP15_2.0_AS SOIL - 13/5/2015 SE139332.029	TP15_2.9_AS SOIL - 13/5/2015 SE139332.030
Arsenic, As	mg/kg	3	17	<3	5	7	28
Cadmium, Cd	mg/kg	0.3	0.4	0.4	0.3	0.3	0.4
Chromium, Cr	mg/kg	0.3	16	11	14	15	15
Copper, Cu	mg/kg	0.5	10	56	25	17	30
Lead, Pb	mg/kg	1	18	13	99	110	10
Nickel, Ni	mg/kg	0.5	1.1	100	34	11	0.9
Zinc, Zn	mg/kg	0.5	33	74	100	180	9.7

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033	Dup2_AS SOIL - 13/5/2015 SE139332.038
Arsenic, As	mg/kg	3	4	<3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	34	6.9
Copper, Cu	mg/kg	0.5	15	43
Lead, Pb	mg/kg	1	15	37
Nickel, Ni	mg/kg	0.5	37	11
Zinc, Zn	mg/kg	0.5	41	47

Mercury in Soil [AN312] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Mercury	mg/kg	0.01	**0.02**	**0.59**	**0.05**	**0.02**	**0.20**

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP07_0.5_AS SOIL - 14/5/2015 SE139332.010	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013
Mercury	mg/kg	0.01	<0.01	**0.05**	<0.01	<0.01	**0.02**

PARAMETER	UOM	LOR	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014	TP09_2.1_AS SOIL - 13/5/2015 SE139332.015	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP10_0.5_AS SOIL - 13/5/2015 SE139332.017	TP11_0_AS SOIL - 14/5/2015 SE139332.018
Mercury	mg/kg	0.01	**0.03**	<0.01	<0.01	<0.01	**0.02**

PARAMETER	UOM	LOR	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_SP_AS SOIL - 14/5/2015 SE139332.021	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024
Mercury	mg/kg	0.01	**0.01**	**0.05**	**0.04**	<0.01	**0.04**

PARAMETER	UOM	LOR	TP14_1.0_AS SOIL - 14/5/2015 SE139332.025	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	TP15_2.0_AS SOIL - 13/5/2015 SE139332.029	TP15_2.9_AS SOIL - 13/5/2015 SE139332.030
Mercury	mg/kg	0.01	<0.01	<0.01	**0.05**	**0.05**	<0.01

PARAMETER	UOM	LOR	Dup1_AS SOIL - 13/5/2015 SE139332.033	Dup2_AS SOIL - 13/5/2015 SE139332.038
Mercury	mg/kg	0.01	**0.01**	**0.04**

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 20/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP02_0_AS SOIL - 14/5/2015 SE139332.003	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006	TP05_0_AS SOIL - 14/5/2015 SE139332.007
Total Sample Weight*	g	1	**388**	**624**	**315**	**763**	**637**
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	-	-	-	-	-

PARAMETER	UOM	LOR	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011	TP09_0_AS SOIL - 13/5/2015 SE139332.012	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013
Total Sample Weight*	g	1	**749**	**593**	**178**	**555**	**565**
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	-	-	-	-	-

PARAMETER	UOM	LOR	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022	TP14_0.05_AS SOIL - 14/5/2015 SE139332.023	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024
Total Sample Weight*	g	1	**648**	**610**	**659**	**815**	**446**
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	-	-	-	-	-

PARAMETER	UOM	LOR	TP15_0_AS SOIL - 13/5/2015 SE139332.026	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027
Total Sample Weight*	g	1	**780**	**804**
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Fibre Type*	No unit	-	-	-

Moisture Content [AN002] Tested: 21/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332.001	TP01_0.5_AS SOIL - 13/5/2015 SE139332.002	TP02_0.5_AS SOIL - 14/5/2015 SE139332.004	TP03_0_AS SOIL - 14/5/2015 SE139332.005	TP04_0.05_AS SOIL - 13/5/2015 SE139332.006
% Moisture	%	0.5	29	21	19	20	8.3

PARAMETER	UOM	LOR	TP05_0_AS SOIL - 14/5/2015 SE139332.007	TP06_0.45_AS SOIL - 14/5/2015 SE139332.008	TP07_0.05_AS SOIL - 14/5/2015 SE139332.009	TP07_0.5_AS SOIL - 14/5/2015 SE139332.010	TP08_0.05_AS SOIL - 14/5/2015 SE139332.011
% Moisture	%	0.5	9.6	8.5	8.4	24	10

PARAMETER	UOM	LOR	TP09_0.5_AS SOIL - 13/5/2015 SE139332.013	TP09_1.0_AS SOIL - 13/5/2015 SE139332.014	TP09_2.1_AS SOIL - 13/5/2015 SE139332.015	TP10_0.05_AS SOIL - 13/5/2015 SE139332.016	TP10_0.5_AS SOIL - 13/5/2015 SE139332.017
% Moisture	%	0.5	7.8	14	16	9.9	17

PARAMETER	UOM	LOR	TP11_0_AS SOIL - 14/5/2015 SE139332.018	TP12_0.05_AS SOIL - 13/5/2015 SE139332.019	TP12_0.5_AS SOIL - 13/5/2015 SE139332.020	TP13_SP_AS SOIL - 14/5/2015 SE139332.021	TP13_0.05_AS SOIL - 14/5/2015 SE139332.022
% Moisture	%	0.5	11	7.6	17	9.8	11

PARAMETER	UOM	LOR	TP14_0.5_AS SOIL - 14/5/2015 SE139332.024	TP14_1.0_AS SOIL - 14/5/2015 SE139332.025	TP15_0.5_AS SOIL - 13/5/2015 SE139332.027	TP15_1.0_AS SOIL - 13/5/2015 SE139332.028	TP15_2.0_AS SOIL - 13/5/2015 SE139332.029
% Moisture	%	0.5	13	17	6.3	7.0	19

PARAMETER	UOM	LOR	TP15_2.9_AS SOIL - 13/5/2015 SE139332.030	Dup1_AS SOIL - 13/5/2015 SE139332.033	TB_AS SOIL - 13/5/2015 SE139332.036	Dup2_AS SOIL - 13/5/2015 SE139332.038
% Moisture	%	0.5	17	6.8	<0.5	8.3

Fibre ID in bulk materials [AN602] Tested: 21/5/2015

PARAMETER	UOM	LOR	TP14_FC_FRAG Sieve MATERIAL - 13/5/2015 SE139332.034	TP11_0_AS_FRAG MATERIAL - 13/5/2015 SE139332.037
Asbestos Detected	No unit	-	Yes	Yes

Weight of Sample [AN002] Tested: -

PARAMETER	UOM	LOR	TP14_FC_FRAG Sieve MATERIAL - 13/5/2015 SE139332.034	TP11_0_AS_FRAG MATERIAL - 13/5/2015 SE139332.037
Weight of Sample*	g	0.01	**10.70**	**4.40**

VOCs in Water [AN433/AN434] Tested: 19/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Benzene	µg/L	0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3
Naphthalene	µg/L	0.5	<0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433/AN434/AN410] Tested: 19/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
TRH C6-C9	µg/L	40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
TRH C10-C14	µg/L	50	<50	<50
TRH C15-C28	µg/L	200	<200	<200
TRH C29-C36	µg/L	200	<200	<200
TRH C37-C40	µg/L	200	<200	<200
TRH >C10-C16 (F2)	µg/L	60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500
TRH C10-C36	µg/L	450	<450	<450
TRH C10-C40	µg/L	650	<650	<650

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Naphthalene	µg/L	0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1

OC Pesticides in Water [AN400/AN420] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Alpha BHC	µg/L	0.1	<0.1	<0.1
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1	<0.1
Beta BHC	µg/L	0.1	<0.1	<0.1
Lindane (gamma BHC)	µg/L	0.1	<0.1	<0.1
Delta BHC	µg/L	0.1	<0.1	<0.1
Heptachlor	µg/L	0.1	<0.1	<0.1
Aldrin	µg/L	0.1	<0.1	<0.1
Heptachlor epoxide	µg/L	0.1	<0.1	<0.1
Gamma Chlordane	µg/L	0.1	<0.1	<0.1
Alpha Chlordane	µg/L	0.1	<0.1	<0.1
Alpha Endosulfan	µg/L	0.1	<0.1	<0.1
o,p'-DDE	µg/L	0.1	<0.1	<0.1
p,p'-DDE	µg/L	0.1	<0.1	<0.1
Dieldrin	µg/L	0.1	<0.1	<0.1
Endrin	µg/L	0.1	<0.1	<0.1
Beta Endosulfan	µg/L	0.1	<0.1	<0.1
o,p'-DDD	µg/L	0.1	<0.1	<0.1
p,p'-DDD	µg/L	0.1	<0.1	<0.1
Endosulfan sulphate	µg/L	0.1	<0.1	<0.1
o,p'-DDT	µg/L	0.1	<0.1	<0.1
p,p'-DDT	µg/L	0.1	<0.1	<0.1
Endrin ketone	µg/L	0.1	<0.1	<0.1
Methoxychlor	µg/L	0.1	<0.1	<0.1
trans-Nonachlor	µg/L	0.1	<0.1	<0.1
Endrin aldehyde	µg/L	0.1	<0.1	<0.1
Isodrin	µg/L	0.1	<0.1	<0.1
Mirex	µg/L	0.1	<0.1	<0.1

OP Pesticides in Water [AN400/AN420] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Dichlorvos	µg/L	0.5	<0.5	<0.5
Dimethoate	µg/L	0.5	<0.5	<0.5
Diazinon (Dimpylate)	µg/L	0.5	<0.5	<0.5
Fenitrothion	µg/L	0.2	<0.2	<0.2
Malathion	µg/L	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	µg/L	0.2	<0.2	<0.2
Bromophos Ethyl	µg/L	0.2	<0.2	<0.2
Methidathion	µg/L	0.5	<0.5	<0.5
Ethion	µg/L	0.2	<0.2	<0.2
Azinphos-methyl	µg/L	0.2	<0.2	<0.2

PCBs in Water [AN400/AN420] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Arochlor 1016	µg/L	1	<1	<1
Arochlor 1221	µg/L	1	<1	<1
Arochlor 1232	µg/L	1	<1	<1
Arochlor 1242	µg/L	1	<1	<1
Arochlor 1248	µg/L	1	<1	<1
Arochlor 1254	µg/L	1	<1	<1
Arochlor 1260	µg/L	1	<1	<1
Arochlor 1262	µg/L	1	<1	<1
Arochlor 1268	µg/L	1	<1	<1
Total Arochlors*	µg/L	5	<5	<5

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 20/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Arsenic, As	µg/L	1	<1	<1
Cadmium, Cd	µg/L	0.1	<0.1	<0.1
Chromium, Cr	µg/L	1	<1	<1
Copper, Cu	µg/L	1	<1	<1
Lead, Pb	µg/L	1	<1	<1
Nickel, Ni	µg/L	1	<1	<1
Zinc, Zn	µg/L	5	<5	<5

Mercury (dissolved) in Water [AN311/AN312] Tested: 21/5/2015

PARAMETER	UOM	LOR	FB130515 WATER - 13/5/2015 SE139332.031	FB140515 WATER - 14/5/2015 SE139332.032
Mercury	mg/L	0.0001	<0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	Weight of as received sample determined on a 2 decimal place balance.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
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, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M 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 pretreated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.

AN605	This technique gravimetrically deteremines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.

FOOTNOTES

*	Analysis not covered by the scope of accreditation.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
^	Performed by outside laboratory.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

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

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

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	2

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
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Email	au.environmental.sydney@sgs.com
SGS Reference	SE139332 R0
Report Number	0000110824
Date Reported	22 May 2015
Date Received	15 May 2015

COMMENTS

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

Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

No respirable fibres detected in all samples using trace analysis technique as per AS 4964-2004.

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst

ANALYTICAL REPORT

RESULTS

Fibre ID in bulk materials — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification
SE139332.034	TP14_FC_FRAG Sieve	Other	55x40x3mm Cement sheet fragments	13 May 2015	Chrysotile Asbestos Detected
SE139332.037	TP11_0_AS_FRAG	Other	40x40x3mm Cement sheet fragments	13 May 2015	Amosite, Chrysotile & Crocidolite Asbestos Detected

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN002	Weight of as received sample determined on a 2 decimal place balance.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN605	This technique gravimetrically deteremines the mass of Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight.
AN605	This technique also gravimetrically deteremines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm Sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the screened fraction sample weights. This does not include free fibres which are only observed by standard trace analysis as per AN602.
AN605	AMO = Amosite CRY = Chrysotile CRO = Crocidolite
AN605	In sofar as is trechnically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	Not Accredited
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarized light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarized light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarized light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 8594 0400
Facsimile	02 8594 0499
Email	au.environmental.sydney@sgs.com
Project	**2201679B - Syd Water ESA'S Ashfield**
Order Number	**SE139332**
Samples	1
Date Started	20 May 2015

LABORATORY DETAILS

Manager	Jon Dicker
Laboratory	SGS Cairns Environmental
Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	+61 07 4035 5111
Facsimile	+61 07 4035 5122
Email	AU.Environmental.Cairns@sgs.com
SGS Reference	**CE115353 R0**
Report Number	0000025463
Date Reported	22 May 2015
Date Received	19 May 2015

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(3146)

SIGNATORIES

Anthony Nilsson
Operations Manager

Parameter	Units	LOR	Sample Number: CE115353.001 Sample Matrix: Soil Sample Date: 14 May 2015 Sample Name: TP01_0.5_AS
Moisture Content Method: AN002 Tested: 19/5/2015			
% Moisture	%w/w	1	**20.5**
Particle sizing of soils by sieving Method: AN005 Tested: -			
Passing 75µm	%w/w	1	**89**
Retained 75µm	%w/w	1	**11**
Particle sizing of soils <75µm by hydrometer Method: AN005 Tested: -			
Sedimentation Diameter 1	mm	0.0001	**0.0519**
Passing Sedimentation Diameter 1	%w/w	1	**75**
Retained Sedimentation Diameter 1	%w/w	1	**14**
Sedimentation Diameter 2	mm	0.0001	**0.0372**
Passing Sedimentation Diameter 2	%w/w	1	**70**
Retained Sedimentation Diameter 2	%w/w	1	**5**
Sedimentation Diameter 3	mm	0.0001	**0.0266**
Passing Sedimentation Diameter 3	%w/w	1	**64**
Retained Sedimentation Diameter 3	%w/w	1	**5**
Sedimentation Diameter 4	mm	0.0001	**0.0191**
Passing Sedimentation Diameter 4	%w/w	1	**59**
Retained Sedimentation Diameter 4	%w/w	1	**5**
Sedimentation Diameter 5	mm	0.0001	**0.0140**
Passing Sedimentation Diameter 5	%w/w	1	**56**
Retained Sedimentation Diameter 5	%w/w	1	**3**
Sedimentation Diameter 6	mm	0.0001	**0.0100**
Passing Sedimentation Diameter 6	%w/w	1	**54**
Retained Sedimentation Diameter 6	%w/w	1	**3**
Sedimentation Diameter 7	mm	0.0001	**0.0071**
Passing Sedimentation Diameter 7	%w/w	1	**51**
Retained Sedimentation Diameter 7	%w/w	1	**3**
Sedimentation Diameter 8	mm	0.0001	**0.0051**
Passing Sedimentation Diameter 8	%w/w	1	**48**
Retained Sedimentation Diameter 8	%w/w	1	**3**
Sedimentation Diameter 9	mm	0.0001	**0.0036**
Passing Sedimentation Diameter 9	%w/w	1	**46**
Retained Sedimentation Diameter 9	%w/w	1	**3**
Sedimentation Diameter 10	mm	0.0001	**0.0015**
Passing Sedimentation Diameter 10	%w/w	1	**43**
Retained Sedimentation Diameter 10	%w/w	1	**3**
Sedimentation Diameter 11	mm	0.0001	**0.0011**
Passing Sedimentation Diameter 11	%w/w	1	**40**
Retained Sedimentation Diameter 11	%w/w	1	**3**

QC SUMMARY

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.

No QC samples were reported for this job.

METHOD SUMMARY

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.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
^	Performed by outside laboratory.	-	The sample was not analysed for this analyte
		NVL	Not Validated

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

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

STATEMENT OF QA/QC PERFORMANCE

SE139332 R0

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	38

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
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SGS Reference	SE139332 R0
Report Number	0000110833
Date Reported	22 May 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	3 items
	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	1 item
Matrix Spike	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	3 items
	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	1 item

SAMPLE SUMMARY

Sample counts by matrix	34 Soil,2 Material,2	Type of documentation received	COC
Date documentation received	15/5/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.2°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.5_AS	SE139332.002	LB077697	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015

Fibre ID in bulk materials

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP14_FC_FRAG Sieve	SE139332.034	LB077795	13 May 2015	15 May 2015	12 May 2016	21 May 2015	12 May 2016	22 May 2015
TP11_0_AS_FRAG	SE139332.037	LB077795	13 May 2015	15 May 2015	12 May 2016	21 May 2015	12 May 2016	22 May 2015

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP02_0_AS	SE139332.003	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP09_0_AS	SE139332.012	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP14_0.05_AS	SE139332.023	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077673	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP15_0_AS	SE139332.026	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077673	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077728	13 May 2015	15 May 2015	10 Jun 2015	21 May 2015	10 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077728	14 May 2015	15 May 2015	11 Jun 2015	21 May 2015	11 Jun 2015	22 May 2015

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077666	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077666	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077666	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077667	14 May 2015	15 May 2015	11 Jun 2015	20 May 2015	11 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077667	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077668	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077668	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077668	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077668	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077668	13 May 2015	15 May 2015	10 Jun 2015	20 May 2015	10 Jun 2015	22 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP01_0.5_AS	SE139332.002	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	21 May 2015
TP02_0.5_AS	SE139332.004	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077709	14 May 2015	15 May 2015	28 May 2015	21 May 2015	26 May 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
Dup1_AS	SE139332.033	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
TB_AS	SE139332.036	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015
Dup2_AS	SE139332.038	LB077709	13 May 2015	15 May 2015	27 May 2015	21 May 2015	26 May 2015	22 May 2015

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077546	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077619	13 May 2015	15 May 2015	20 May 2015	20 May 2015	29 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077619	14 May 2015	15 May 2015	21 May 2015	20 May 2015	29 Jun 2015	22 May 2015

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077546	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077619	13 May 2015	15 May 2015	20 May 2015	20 May 2015	29 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077619	14 May 2015	15 May 2015	21 May 2015	20 May 2015	29 Jun 2015	22 May 2015

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP14_1.0_AS	SE139332.025	LB077546	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077619	13 May 2015	15 May 2015	20 May 2015	20 May 2015	29 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077619	14 May 2015	15 May 2015	21 May 2015	20 May 2015	29 Jun 2015	22 May 2015

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077546	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077619	13 May 2015	15 May 2015	20 May 2015	20 May 2015	29 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077619	14 May 2015	15 May 2015	21 May 2015	20 May 2015	29 Jun 2015	22 May 2015

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015
TP01_0.5_AS	SE139332.002	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015
TP02_0.5_AS	SE139332.004	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP03_0_AS	SE139332.005	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP04_0.05_AS	SE139332.006	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015
TP05_0_AS	SE139332.007	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP06_0.45_AS	SE139332.008	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP07_0.05_AS	SE139332.009	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP08_0.05_AS	SE139332.011	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP09_0.5_AS	SE139332.013	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

pH in soil (1:5) (continued)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP10_0.05_AS	SE139332.016	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015
TP11_0_AS	SE139332.018	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP12_0.5_AS	SE139332.020	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015
TP13_0.05_AS	SE139332.022	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP14_0.5_AS	SE139332.024	LB077736	14 May 2015	15 May 2015	21 May 2015	20 May 2015	21 May 2015	20 May 2015
TP15_0.5_AS	SE139332.027	LB077736	13 May 2015	15 May 2015	20 May 2015	20 May 2015	21 May 2015	20 May 2015

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077689	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077689	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077689	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077689	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077689	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP13_SP_AS	SE139332.021	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077691	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077691	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077692	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
Dup1_AS	SE139332.033	LB077692	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015
Dup2_AS	SE139332.038	LB077692	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	22 May 2015

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077648	13 May 2015	15 May 2015	09 Nov 2015	20 May 2015	09 Nov 2015	21 May 2015
FB140515	SE139332.032	LB077648	14 May 2015	15 May 2015	10 Nov 2015	20 May 2015	10 Nov 2015	21 May 2015

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP07_0.5_AS	SE139332.010	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP09_2.1_AS	SE139332.015	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP10_0.5_AS	SE139332.017	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077544	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP13_SP_AS	SE139332.021	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077544	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP14_1.0_AS	SE139332.025	LB077546	14 May 2015	15 May 2015	28 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.0_AS	SE139332.029	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TP15_2.9_AS	SE139332.030	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015
Dup2_AS	SE139332.038	LB077546	13 May 2015	15 May 2015	27 May 2015	19 May 2015	28 Jun 2015	22 May 2015

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077619	13 May 2015	15 May 2015	20 May 2015	20 May 2015	29 Jun 2015	22 May 2015
FB140515	SE139332.032	LB077619	14 May 2015	15 May 2015	21 May 2015	20 May 2015	29 Jun 2015	22 May 2015

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP13_0.05_AS	SE139332.022	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TS_AS	SE139332.035	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077578	13 May 2015	15 May 2015	20 May 2015	19 May 2015	28 Jun 2015	20 May 2015
FB140515	SE139332.032	LB077578	14 May 2015	15 May 2015	21 May 2015	19 May 2015	28 Jun 2015	20 May 2015

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332.001	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP02_0.5_AS	SE139332.004	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP03_0_AS	SE139332.005	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP04_0.05_AS	SE139332.006	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP05_0_AS	SE139332.007	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP06_0.45_AS	SE139332.008	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP07_0.05_AS	SE139332.009	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP08_0.05_AS	SE139332.011	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP09_0.5_AS	SE139332.013	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP09_1.0_AS	SE139332.014	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP10_0.05_AS	SE139332.016	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP11_0_AS	SE139332.018	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP12_0.05_AS	SE139332.019	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP12_0.5_AS	SE139332.020	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015

HOLDING TIME SUMMARY

SE139332 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP13_0.05_AS	SE139332.022	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP14_0.5_AS	SE139332.024	LB077627	14 May 2015	15 May 2015	28 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP15_0.5_AS	SE139332.027	LB077627	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TP15_1.0_AS	SE139332.028	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
Dup1_AS	SE139332.033	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TS_AS	SE139332.035	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015
TB_AS	SE139332.036	LB077628	13 May 2015	15 May 2015	27 May 2015	20 May 2015	29 Jun 2015	22 May 2015

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FB130515	SE139332.031	LB077578	13 May 2015	15 May 2015	20 May 2015	19 May 2015	28 Jun 2015	20 May 2015
FB140515	SE139332.032	LB077578	14 May 2015	15 May 2015	21 May 2015	19 May 2015	28 Jun 2015	20 May 2015

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	108
	TP02_0.5_AS	SE139332.004	%	60 - 130%	107
	TP03_0_AS	SE139332.005	%	60 - 130%	110
	TP04_0.05_AS	SE139332.006	%	60 - 130%	101
	TP05_0_AS	SE139332.007	%	60 - 130%	103
	TP06_0.45_AS	SE139332.008	%	60 - 130%	109
	TP07_0.05_AS	SE139332.009	%	60 - 130%	97
	TP08_0.05_AS	SE139332.011	%	60 - 130%	95
	TP09_0.5_AS	SE139332.013	%	60 - 130%	93
	TP10_0.05_AS	SE139332.016	%	60 - 130%	95
	TP11_0_AS	SE139332.018	%	60 - 130%	101
	TP12_0.5_AS	SE139332.020	%	60 - 130%	97
	TP13_0.05_AS	SE139332.022	%	60 - 130%	99
	TP14_0.5_AS	SE139332.024	%	60 - 130%	96
	TP15_0.5_AS	SE139332.027	%	60 - 130%	92
	Dup1_AS	SE139332.033	%	60 - 130%	99

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	FB130515	SE139332.031	%	40 - 130%	65
	FB140515	SE139332.032	%	40 - 130%	70

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	92
	TP02_0.5_AS	SE139332.004	%	60 - 130%	96
	TP03_0_AS	SE139332.005	%	60 - 130%	100
	TP04_0.05_AS	SE139332.006	%	60 - 130%	92
	TP05_0_AS	SE139332.007	%	60 - 130%	92
	TP06_0.45_AS	SE139332.008	%	60 - 130%	102
	TP07_0.05_AS	SE139332.009	%	60 - 130%	92
	TP08_0.05_AS	SE139332.011	%	60 - 130%	96
	TP09_0.5_AS	SE139332.013	%	60 - 130%	96
	TP10_0.05_AS	SE139332.016	%	60 - 130%	96
	TP11_0_AS	SE139332.018	%	60 - 130%	96
	TP12_0.5_AS	SE139332.020	%	60 - 130%	96
	TP13_0.05_AS	SE139332.022	%	60 - 130%	102
	TP14_0.5_AS	SE139332.024	%	60 - 130%	102
	TP15_0.5_AS	SE139332.027	%	60 - 130%	96
	Dup1_AS	SE139332.033	%	60 - 130%	94
d14-p-terphenyl (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	110
	TP02_0.5_AS	SE139332.004	%	60 - 130%	102
	TP03_0_AS	SE139332.005	%	60 - 130%	110
	TP04_0.05_AS	SE139332.006	%	60 - 130%	106
	TP05_0_AS	SE139332.007	%	60 - 130%	104
	TP06_0.45_AS	SE139332.008	%	60 - 130%	116
	TP07_0.05_AS	SE139332.009	%	60 - 130%	112
	TP08_0.05_AS	SE139332.011	%	60 - 130%	106
	TP09_0.5_AS	SE139332.013	%	60 - 130%	110
	TP10_0.05_AS	SE139332.016	%	60 - 130%	108
	TP11_0_AS	SE139332.018	%	60 - 130%	106
	TP12_0.5_AS	SE139332.020	%	60 - 130%	108
	TP13_0.05_AS	SE139332.022	%	60 - 130%	114
	TP14_0.5_AS	SE139332.024	%	60 - 130%	114
	TP15_0.5_AS	SE139332.027	%	60 - 130%	108
	Dup1_AS	SE139332.033	%	60 - 130%	108

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	FB130515	SE139332.031	%	40 - 130%	60
	FB140515	SE139332.032	%	40 - 130%	70
d14-p-terphenyl (Surrogate)	FB130515	SE139332.031	%	40 - 130%	98

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Water (continued) — Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	FB140515	SE139332.032	%	40 - 130%	100

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP01_0.05_AS	SE139332.001	%	70 - 130%	92
	TP02_0.5_AS	SE139332.004	%	70 - 130%	96
	TP03_0_AS	SE139332.005	%	70 - 130%	100
	TP04_0.05_AS	SE139332.006	%	70 - 130%	92
	TP05_0_AS	SE139332.007	%	70 - 130%	92
	TP06_0.45_AS	SE139332.008	%	70 - 130%	102
	TP07_0.05_AS	SE139332.009	%	70 - 130%	92
	TP07_0.5_AS	SE139332.010	%	70 - 130%	96
	TP08_0.05_AS	SE139332.011	%	70 - 130%	96
	TP09_0.5_AS	SE139332.013	%	70 - 130%	96
	TP09_1.0_AS	SE139332.014	%	70 - 130%	98
	TP09_2.1_AS	SE139332.015	%	70 - 130%	94
	TP10_0.05_AS	SE139332.016	%	70 - 130%	96
	TP10_0.5_AS	SE139332.017	%	70 - 130%	94
	TP11_0_AS	SE139332.018	%	70 - 130%	96
	TP12_0.05_AS	SE139332.019	%	70 - 130%	96
	TP12_0.5_AS	SE139332.020	%	70 - 130%	96
	TP13_SP_AS	SE139332.021	%	70 - 130%	96
	TP13_0.05_AS	SE139332.022	%	70 - 130%	102
	TP14_0.5_AS	SE139332.024	%	70 - 130%	102
	TP14_1.0_AS	SE139332.025	%	70 - 130%	96
	TP15_0.5_AS	SE139332.027	%	70 - 130%	96
	TP15_1.0_AS	SE139332.028	%	70 - 130%	90
	TP15_2.0_AS	SE139332.029	%	70 - 130%	100
	TP15_2.9_AS	SE139332.030	%	70 - 130%	90
	Dup1_AS	SE139332.033	%	70 - 130%	94
	Dup2_AS	SE139332.038	%	70 - 130%	96
d14-p-terphenyl (Surrogate)	TP01_0.05_AS	SE139332.001	%	70 - 130%	110
	TP02_0.5_AS	SE139332.004	%	70 - 130%	102
	TP03_0_AS	SE139332.005	%	70 - 130%	110
	TP04_0.05_AS	SE139332.006	%	70 - 130%	106
	TP05_0_AS	SE139332.007	%	70 - 130%	104
	TP06_0.45_AS	SE139332.008	%	70 - 130%	116
	TP07_0.05_AS	SE139332.009	%	70 - 130%	112
	TP07_0.5_AS	SE139332.010	%	70 - 130%	106
	TP08_0.05_AS	SE139332.011	%	70 - 130%	106
	TP09_0.5_AS	SE139332.013	%	70 - 130%	110
	TP09_1.0_AS	SE139332.014	%	70 - 130%	110
	TP09_2.1_AS	SE139332.015	%	70 - 130%	108
	TP10_0.05_AS	SE139332.016	%	70 - 130%	108
	TP10_0.5_AS	SE139332.017	%	70 - 130%	108
	TP11_0_AS	SE139332.018	%	70 - 130%	106
	TP12_0.05_AS	SE139332.019	%	70 - 130%	112
	TP12_0.5_AS	SE139332.020	%	70 - 130%	108
	TP13_SP_AS	SE139332.021	%	70 - 130%	106
	TP13_0.05_AS	SE139332.022	%	70 - 130%	114
	TP14_0.5_AS	SE139332.024	%	70 - 130%	114
	TP14_1.0_AS	SE139332.025	%	70 - 130%	110
	TP15_0.5_AS	SE139332.027	%	70 - 130%	108
	TP15_1.0_AS	SE139332.028	%	70 - 130%	102
	TP15_2.0_AS	SE139332.029	%	70 - 130%	112
	TP15_2.9_AS	SE139332.030	%	70 - 130%	104
	Dup1_AS	SE139332.033	%	70 - 130%	108
	Dup2_AS	SE139332.038	%	70 - 130%	108
d5-nitrobenzene (Surrogate)	TP01_0.05_AS	SE139332.001	%	70 - 130%	94
	TP02_0.5_AS	SE139332.004	%	70 - 130%	94
	TP03_0_AS	SE139332.005	%	70 - 130%	98

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-nitrobenzene (Surrogate)	TP04_0.05_AS	SE139332.006	%	70 - 130%	96
	TP05_0_AS	SE139332.007	%	70 - 130%	96
	TP06_0.45_AS	SE139332.008	%	70 - 130%	102
	TP07_0.05_AS	SE139332.009	%	70 - 130%	98
	TP07_0.5_AS	SE139332.010	%	70 - 130%	98
	TP08_0.05_AS	SE139332.011	%	70 - 130%	102
	TP09_0.5_AS	SE139332.013	%	70 - 130%	100
	TP09_1.0_AS	SE139332.014	%	70 - 130%	106
	TP09_2.1_AS	SE139332.015	%	70 - 130%	102
	TP10_0.05_AS	SE139332.016	%	70 - 130%	100
	TP10_0.5_AS	SE139332.017	%	70 - 130%	100
	TP11_0_AS	SE139332.018	%	70 - 130%	100
	TP12_0.05_AS	SE139332.019	%	70 - 130%	102
	TP12_0.5_AS	SE139332.020	%	70 - 130%	98
	TP13_SP_AS	SE139332.021	%	70 - 130%	100
	TP13_0.05_AS	SE139332.022	%	70 - 130%	108
	TP14_0.5_AS	SE139332.024	%	70 - 130%	112
	TP14_1.0_AS	SE139332.025	%	70 - 130%	96
	TP15_0.5_AS	SE139332.027	%	70 - 130%	92
	TP15_1.0_AS	SE139332.028	%	70 - 130%	94
	TP15_2.0_AS	SE139332.029	%	70 - 130%	102
	TP15_2.9_AS	SE139332.030	%	70 - 130%	92
	Dup1_AS	SE139332.033	%	70 - 130%	92
	Dup2_AS	SE139332.038	%	70 - 130%	96

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	FB130515	SE139332.031	%	40 - 130%	60
	FB140515	SE139332.032	%	40 - 130%	70
d14-p-terphenyl (Surrogate)	FB130515	SE139332.031	%	40 - 130%	98
	FB140515	SE139332.032	%	40 - 130%	100
d5-nitrobenzene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	58
	FB140515	SE139332.032	%	40 - 130%	66

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	108
	TP02_0.5_AS	SE139332.004	%	60 - 130%	107
	TP03_0_AS	SE139332.005	%	60 - 130%	110
	TP04_0.05_AS	SE139332.006	%	60 - 130%	101
	TP05_0_AS	SE139332.007	%	60 - 130%	103
	TP06_0.45_AS	SE139332.008	%	60 - 130%	109
	TP07_0.05_AS	SE139332.009	%	60 - 130%	97
	TP08_0.05_AS	SE139332.011	%	60 - 130%	95
	TP09_0.5_AS	SE139332.013	%	60 - 130%	93
	TP10_0.05_AS	SE139332.016	%	60 - 130%	95
	TP11_0_AS	SE139332.018	%	60 - 130%	101
	TP12_0.5_AS	SE139332.020	%	60 - 130%	97
	TP13_0.05_AS	SE139332.022	%	60 - 130%	99
	TP14_0.5_AS	SE139332.024	%	60 - 130%	96
	TP15_0.5_AS	SE139332.027	%	60 - 130%	92
	Dup1_AS	SE139332.033	%	60 - 130%	99

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	65
	FB140515	SE139332.032	%	40 - 130%	70

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	100
	TP02_0.5_AS	SE139332.004	%	60 - 130%	106

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP03_0_AS	SE139332.005	%	60 - 130%	97
	TP04_0.05_AS	SE139332.006	%	60 - 130%	101
	TP05_0_AS	SE139332.007	%	60 - 130%	98
	TP06_0.45_AS	SE139332.008	%	60 - 130%	90
	TP07_0.05_AS	SE139332.009	%	60 - 130%	92
	TP08_0.05_AS	SE139332.011	%	60 - 130%	75
	TP09_0.5_AS	SE139332.013	%	60 - 130%	77
	TP09_1.0_AS	SE139332.014	%	60 - 130%	79
	TP10_0.05_AS	SE139332.016	%	60 - 130%	114
	TP11_0_AS	SE139332.018	%	60 - 130%	102
	TP12_0.05_AS	SE139332.019	%	60 - 130%	125
	TP12_0.5_AS	SE139332.020	%	60 - 130%	107
	TP13_0.05_AS	SE139332.022	%	60 - 130%	122
	TP14_0.5_AS	SE139332.024	%	60 - 130%	97
	TP15_0.5_AS	SE139332.027	%	60 - 130%	108
	TP15_1.0_AS	SE139332.028	%	60 - 130%	80
	Dup1_AS	SE139332.033	%	60 - 130%	90
	TS_AS	SE139332.035	%	60 - 130%	121
	TB_AS	SE139332.036	%	60 - 130%	121
d4-1,2-dichloroethane (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	107
	TP02_0.5_AS	SE139332.004	%	60 - 130%	112
	TP03_0_AS	SE139332.005	%	60 - 130%	117
	TP04_0.05_AS	SE139332.006	%	60 - 130%	102
	TP05_0_AS	SE139332.007	%	60 - 130%	108
	TP06_0.45_AS	SE139332.008	%	60 - 130%	94
	TP07_0.05_AS	SE139332.009	%	60 - 130%	97
	TP08_0.05_AS	SE139332.011	%	60 - 130%	118
	TP09_0.5_AS	SE139332.013	%	60 - 130%	102
	TP09_1.0_AS	SE139332.014	%	60 - 130%	80
	TP10_0.05_AS	SE139332.016	%	60 - 130%	113
	TP11_0_AS	SE139332.018	%	60 - 130%	97
	TP12_0.05_AS	SE139332.019	%	60 - 130%	113
	TP12_0.5_AS	SE139332.020	%	60 - 130%	103
	TP13_0.05_AS	SE139332.022	%	60 - 130%	112
	TP14_0.5_AS	SE139332.024	%	60 - 130%	94
	TP15_0.5_AS	SE139332.027	%	60 - 130%	99
	TP15_1.0_AS	SE139332.028	%	60 - 130%	85
	Dup1_AS	SE139332.033	%	60 - 130%	80
	TS_AS	SE139332.035	%	60 - 130%	96
	TB_AS	SE139332.036	%	60 - 130%	108
d8-toluene (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	92
	TP02_0.5_AS	SE139332.004	%	60 - 130%	82
	TP03_0_AS	SE139332.005	%	60 - 130%	99
	TP04_0.05_AS	SE139332.006	%	60 - 130%	84
	TP05_0_AS	SE139332.007	%	60 - 130%	92
	TP06_0.45_AS	SE139332.008	%	60 - 130%	87
	TP07_0.05_AS	SE139332.009	%	60 - 130%	87
	TP08_0.05_AS	SE139332.011	%	60 - 130%	94
	TP09_0.5_AS	SE139332.013	%	60 - 130%	87
	TP09_1.0_AS	SE139332.014	%	60 - 130%	82
	TP10_0.05_AS	SE139332.016	%	60 - 130%	128
	TP11_0_AS	SE139332.018	%	60 - 130%	109
	TP12_0.05_AS	SE139332.019	%	60 - 130%	121
	TP12_0.5_AS	SE139332.020	%	60 - 130%	114
	TP13_0.05_AS	SE139332.022	%	60 - 130%	120
	TP14_0.5_AS	SE139332.024	%	60 - 130%	106
	TP15_0.5_AS	SE139332.027	%	60 - 130%	110
	TP15_1.0_AS	SE139332.028	%	60 - 130%	90
	Dup1_AS	SE139332.033	%	60 - 130%	91
	TS_AS	SE139332.035	%	60 - 130%	114
	TB_AS	SE139332.036	%	60 - 130%	124

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Dibromofluoromethane (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	88
	TP02_0.5_AS	SE139332.004	%	60 - 130%	92
	TP03_0_AS	SE139332.005	%	60 - 130%	97
	TP04_0.05_AS	SE139332.006	%	60 - 130%	78
	TP05_0_AS	SE139332.007	%	60 - 130%	105
	TP06_0.45_AS	SE139332.008	%	60 - 130%	77
	TP07_0.05_AS	SE139332.009	%	60 - 130%	77
	TP08_0.05_AS	SE139332.011	%	60 - 130%	89
	TP09_0.5_AS	SE139332.013	%	60 - 130%	82
	TP09_1.0_AS	SE139332.014	%	60 - 130%	70
	TP10_0.05_AS	SE139332.016	%	60 - 130%	101
	TP11_0_AS	SE139332.018	%	60 - 130%	83
	TP12_0.05_AS	SE139332.019	%	60 - 130%	98
	TP12_0.5_AS	SE139332.020	%	60 - 130%	87
	TP13_0.05_AS	SE139332.022	%	60 - 130%	98
	TP14_0.5_AS	SE139332.024	%	60 - 130%	82
	TP15_0.5_AS	SE139332.027	%	60 - 130%	84
	TP15_1.0_AS	SE139332.028	%	60 - 130%	71
	Dup1_AS	SE139332.033	%	60 - 130%	70
	TS_AS	SE139332.035	%	60 - 130%	80
	TB_AS	SE139332.036	%	60 - 130%	92

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	91
	FB140515	SE139332.032	%	40 - 130%	89
d4-1,2-dichloroethane (Surrogate)	FB130515	SE139332.031	%	40 - 130%	101
	FB140515	SE139332.032	%	40 - 130%	99
d8-toluene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	102
	FB140515	SE139332.032	%	40 - 130%	98
Dibromofluoromethane (Surrogate)	FB130515	SE139332.031	%	40 - 130%	99
	FB140515	SE139332.032	%	40 - 130%	96

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	100
	TP02_0.5_AS	SE139332.004	%	60 - 130%	106
	TP03_0_AS	SE139332.005	%	60 - 130%	97
	TP04_0.05_AS	SE139332.006	%	60 - 130%	101
	TP05_0_AS	SE139332.007	%	60 - 130%	98
	TP06_0.45_AS	SE139332.008	%	60 - 130%	90
	TP07_0.05_AS	SE139332.009	%	60 - 130%	92
	TP08_0.05_AS	SE139332.011	%	60 - 130%	75
	TP09_0.5_AS	SE139332.013	%	60 - 130%	77
	TP09_1.0_AS	SE139332.014	%	60 - 130%	79
	TP10_0.05_AS	SE139332.016	%	60 - 130%	114
	TP11_0_AS	SE139332.018	%	60 - 130%	102
	TP12_0.05_AS	SE139332.019	%	60 - 130%	125
	TP12_0.5_AS	SE139332.020	%	60 - 130%	107
	TP13_0.05_AS	SE139332.022	%	60 - 130%	122
	TP14_0.5_AS	SE139332.024	%	60 - 130%	97
	TP15_0.5_AS	SE139332.027	%	60 - 130%	108
	TP15_1.0_AS	SE139332.028	%	60 - 130%	80
	Dup1_AS	SE139332.033	%	60 - 130%	90
	TB_AS	SE139332.036	%	60 - 130%	121
d4-1,2-dichloroethane (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	107
	TP02_0.5_AS	SE139332.004	%	60 - 130%	112
	TP03_0_AS	SE139332.005	%	60 - 130%	117
	TP04_0.05_AS	SE139332.006	%	60 - 130%	102
	TP05_0_AS	SE139332.007	%	60 - 130%	108
	TP06_0.45_AS	SE139332.008	%	60 - 130%	94
	TP07_0.05_AS	SE139332.009	%	60 - 130%	97

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	TP08_0.05_AS	SE139332.011	%	60 - 130%	118
	TP09_0.5_AS	SE139332.013	%	60 - 130%	102
	TP09_1.0_AS	SE139332.014	%	60 - 130%	80
	TP10_0.05_AS	SE139332.016	%	60 - 130%	113
	TP11_0_AS	SE139332.018	%	60 - 130%	97
	TP12_0.05_AS	SE139332.019	%	60 - 130%	113
	TP12_0.5_AS	SE139332.020	%	60 - 130%	103
	TP13_0.05_AS	SE139332.022	%	60 - 130%	112
	TP14_0.5_AS	SE139332.024	%	60 - 130%	94
	TP15_0.5_AS	SE139332.027	%	60 - 130%	99
	TP15_1.0_AS	SE139332.028	%	60 - 130%	85
	Dup1_AS	SE139332.033	%	60 - 130%	80
	TB_AS	SE139332.036	%	60 - 130%	108
d8-toluene (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	92
	TP02_0.5_AS	SE139332.004	%	60 - 130%	82
	TP03_0_AS	SE139332.005	%	60 - 130%	99
	TP04_0.05_AS	SE139332.006	%	60 - 130%	84
	TP05_0_AS	SE139332.007	%	60 - 130%	92
	TP06_0.45_AS	SE139332.008	%	60 - 130%	87
	TP07_0.05_AS	SE139332.009	%	60 - 130%	87
	TP08_0.05_AS	SE139332.011	%	60 - 130%	94
	TP09_0.5_AS	SE139332.013	%	60 - 130%	87
	TP09_1.0_AS	SE139332.014	%	60 - 130%	82
	TP10_0.05_AS	SE139332.016	%	60 - 130%	128
	TP11_0_AS	SE139332.018	%	60 - 130%	109
	TP12_0.05_AS	SE139332.019	%	60 - 130%	121
	TP12_0.5_AS	SE139332.020	%	60 - 130%	114
	TP13_0.05_AS	SE139332.022	%	60 - 130%	120
	TP14_0.5_AS	SE139332.024	%	60 - 130%	106
	TP15_0.5_AS	SE139332.027	%	60 - 130%	110
	TP15_1.0_AS	SE139332.028	%	60 - 130%	90
	Dup1_AS	SE139332.033	%	60 - 130%	91
	TB_AS	SE139332.036	%	60 - 130%	124
Dibromofluoromethane (Surrogate)	TP01_0.05_AS	SE139332.001	%	60 - 130%	88
	TP02_0.5_AS	SE139332.004	%	60 - 130%	92
	TP03_0_AS	SE139332.005	%	60 - 130%	97
	TP04_0.05_AS	SE139332.006	%	60 - 130%	78
	TP05_0_AS	SE139332.007	%	60 - 130%	105
	TP06_0.45_AS	SE139332.008	%	60 - 130%	77
	TP07_0.05_AS	SE139332.009	%	60 - 130%	77
	TP08_0.05_AS	SE139332.011	%	60 - 130%	89
	TP09_0.5_AS	SE139332.013	%	60 - 130%	82
	TP09_1.0_AS	SE139332.014	%	60 - 130%	70
	TP10_0.05_AS	SE139332.016	%	60 - 130%	101
	TP11_0_AS	SE139332.018	%	60 - 130%	83
	TP12_0.05_AS	SE139332.019	%	60 - 130%	98
	TP12_0.5_AS	SE139332.020	%	60 - 130%	87
	TP13_0.05_AS	SE139332.022	%	60 - 130%	98
	TP14_0.5_AS	SE139332.024	%	60 - 130%	82
	TP15_0.5_AS	SE139332.027	%	60 - 130%	84
	TP15_1.0_AS	SE139332.028	%	60 - 130%	71
	Dup1_AS	SE139332.033	%	60 - 130%	70
	TB_AS	SE139332.036	%	60 - 130%	92

Volatile Petroleum Hydrocarbons in Water — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	91
	FB140515	SE139332.032	%	40 - 130%	89
d4-1,2-dichloroethane (Surrogate)	FB130515	SE139332.031	%	60 - 130%	101
	FB140515	SE139332.032	%	60 - 130%	99
d8-toluene (Surrogate)	FB130515	SE139332.031	%	40 - 130%	102

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Water (continued) **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	FB140515	SE139332.032	%	40 - 130%	98
Dibromofluoromethane (Surrogate)	FB130515	SE139332.031	%	40 - 130%	99
	FB140515	SE139332.032	%	40 - 130%	96

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB077728.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB077666.001	Mercury	mg/kg	0.01	<0.01
LB077667.001	Mercury	mg/kg	0.01	<0.01
LB077668.001	Mercury	mg/kg	0.01	<0.01

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077544.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95
LB077546.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077546.001		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	75

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077619.001		Alpha BHC	µg/L	0.1	<0.1
		Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
		Beta BHC	µg/L	0.1	<0.1
		Lindane (gamma BHC)	µg/L	0.1	<0.1
		Delta BHC	µg/L	0.1	<0.1
		Heptachlor	µg/L	0.1	<0.1
		Aldrin	µg/L	0.1	<0.1
		Heptachlor epoxide	µg/L	0.1	<0.1
		Gamma Chlordane	µg/L	0.1	<0.1
		Alpha Chlordane	µg/L	0.1	<0.1
		Alpha Endosulfan	µg/L	0.1	<0.1
		p,p'-DDE	µg/L	0.1	<0.1
		Dieldrin	µg/L	0.1	<0.1
		Endrin	µg/L	0.1	<0.1
		Beta Endosulfan	µg/L	0.1	<0.1
		p,p'-DDD	µg/L	0.1	<0.1
		Endosulfan sulphate	µg/L	0.1	<0.1
		p,p'-DDT	µg/L	0.1	<0.1
		Endrin ketone	µg/L	0.1	<0.1
		Methoxychlor	µg/L	0.1	<0.1
		Endrin aldehyde	µg/L	0.1	<0.1
		Isodrin	µg/L	0.1	<0.1
		Mirex	µg/L	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	75

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077544.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	96
		d14-p-terphenyl (Surrogate)	%	-	114
LB077546.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	96
		d14-p-terphenyl (Surrogate)	%	-	114

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077619.001		Dichlorvos	µg/L	0.5	<0.5
		Dimethoate	µg/L	0.5	<0.5
		Diazinon (Dimpylate)	µg/L	0.5	<0.5
		Fenitrothion	µg/L	0.2	<0.2
		Malathion	µg/L	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
		Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
		Bromophos Ethyl	µg/L	0.2	<0.2
		Methidathion	µg/L	0.5	<0.5
		Ethion	µg/L	0.2	<0.2
		Azinphos-methyl	µg/L	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	108

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB077544.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	96
		2-fluorobiphenyl (Surrogate)	%	-	96
		d14-p-terphenyl (Surrogate)	%	-	114
LB077546.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	106
		2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	124

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB077619.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB077619.001		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	96
		2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	108

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077544.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95
LB077546.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	75

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB077619.001		Arochlor 1016	µg/L	1	<1
		Arochlor 1221	µg/L	1	<1
		Arochlor 1232	µg/L	1	<1
		Arochlor 1242	µg/L	1	<1
		Arochlor 1248	µg/L	1	<1
		Arochlor 1254	µg/L	1	<1
		Arochlor 1260	µg/L	1	<1
		Arochlor 1262	µg/L	1	<1
		Arochlor 1268	µg/L	1	<1

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB077689.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB077689.001	Zinc, Zn	mg/kg	0.5	<0.5
LB077691.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
LB077692.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB077648.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB077544.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB077546.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB077619.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB077627.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	73
		d4-1,2-dichloroethane (Surrogate)	%	-	91
		d8-toluene (Surrogate)	%	-	84
		Bromofluorobenzene (Surrogate)	%	-	95
	Totals	Total BTEX*	mg/kg	0.6	<0.6
LB077628.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB077628.001	Monocyclic Aromatic	o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	115
		d4-1,2-dichloroethane (Surrogate)	%	-	117
		d8-toluene (Surrogate)	%	-	123
		Bromofluorobenzene (Surrogate)	%	-	128
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB077578.001	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5
	Hydrocarbons	Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	96
		d4-1,2-dichloroethane (Surrogate)	%	-	96
		d8-toluene (Surrogate)	%	-	102
		Bromofluorobenzene (Surrogate)	%	-	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB077627.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	73
		d4-1,2-dichloroethane (Surrogate)	%	-	91
		d8-toluene (Surrogate)	%	-	84
LB077628.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	115
		d4-1,2-dichloroethane (Surrogate)	%	-	117
		d8-toluene (Surrogate)	%	-	123

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB077578.001		TRH C6-C9	µg/L	40	<40
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	96
		d4-1,2-dichloroethane (Surrogate)	%	-	96
		d8-toluene (Surrogate)	%	-	102
		Bromofluorobenzene (Surrogate)	%	-	91

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139330.034	LB077728.014	Mercury	µg/L	0.0001	-0.0392	-0.0372	146	0

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139331.004	LB077666.014	Mercury	mg/kg	0.01	0.27	0.27	49	1
SE139332.005	LB077666.024	Mercury	mg/kg	0.01	0.05	0.05	137	0
SE139332.016	LB077667.014	Mercury	mg/kg	0.01	<0.01	0.01	200	0
SE139332.027	LB077667.024	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE139333.008	LB077668.014	Mercury	mg/kg	0.01	0.01	0.01	200	0
SE139333.021	LB077668.023	Mercury	mg/kg	0.01	<0.01	<0.01	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139331.013	LB077709.011	% Moisture	%w/w	0.5	<0.5	<0.5	200	0
SE139332.011	LB077709.022	% Moisture	%	0.5	10	10	40	0
SE139332.022	LB077709.033	% Moisture	%	0.5	11	10	39	2
SE139332.038	LB077709.043	% Moisture	%	0.5	8.3	7.8	42	7

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.011	LB077544.013		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	30	2

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.013	LB077544.014	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.013	LB077544.014		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.013	LB077544.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	0.3	0.2	71	78 ③
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.9	0.5	45	61 ②
			Pyrene	mg/kg	0.1	0.9	0.5	45	50 ②
			Benzo(a)anthracene	mg/kg	0.1	0.5	0.3	53	48
			Chrysene	mg/kg	0.1	0.4	0.3	58	33
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.6	0.4	50	39
			Benzo(k)fluoranthene	mg/kg	0.1	0.2	0.2	77	14
			Benzo(a)pyrene	mg/kg	0.1	0.6	0.4	51	38
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.6	0.4	50	31
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.3	0.2	68	26
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	0.8	0.5	40	37
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.9	0.6	49	32
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.8	0.6	38	35
			Total PAH	mg/kg	0.8	5.3	3.5	48	42
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	8

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.011	LB077544.013		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.013	LB077736.012	pH	pH Units	-	8.8	8.8	31	0
SE139333.008	LB077736.023	pH	pH Units	-	5.3	5.3	32	0
SE139333.017	LB077736.031	pH	pH Units	-	6.1	6.1	32	1

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139331.007	LB077689.014	Arsenic, As	mg/kg	3	8	9	42	16
		Cadmium, Cd	mg/kg	0.3	3.5	3.7	38	4
		Chromium, Cr	mg/kg	0.3	61	65	31	6
		Copper, Cu	mg/kg	0.5	160	180	30	13
		Lead, Pb	mg/kg	1	14000	14000	30	0
		Nickel, Ni	mg/kg	0.5	8.0	9.1	36	14
		Zinc, Zn	mg/kg	0.5	3100	3000	30	2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.007	LB077689.024	Arsenic, As	mg/kg	3	3	4	58	8
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	144	0
		Chromium, Cr	mg/kg	0.3	13	10	34	21
		Copper, Cu	mg/kg	0.5	15	14	33	4
		Lead, Pb	mg/kg	1	51	46	32	10
		Nickel, Ni	mg/kg	0.5	18	17	33	8
		Zinc, Zn	mg/kg	0.5	67	70	33	5
SE139332.018	LB077691.014	Arsenic, As	mg/kg	3	6	4	50	31
		Cadmium, Cd	mg/kg	0.3	0.4	0.4	103	7
		Chromium, Cr	mg/kg	0.3	15	15	33	2
		Copper, Cu	mg/kg	0.5	48	44	31	7
		Lead, Pb	mg/kg	1	130	140	31	10
		Nickel, Ni	mg/kg	0.5	35	35	31	2
		Zinc, Zn	mg/kg	0.5	400	350	31	14
SE139332.029	LB077691.024	Arsenic, As	mg/kg	3	7	8	43	6
		Cadmium, Cd	mg/kg	0.3	0.3	0.4	118	18
		Chromium, Cr	mg/kg	0.3	15	17	33	13
		Copper, Cu	mg/kg	0.5	17	17	33	5
		Lead, Pb	mg/kg	1	110	110	31	4
		Nickel, Ni	mg/kg	0.5	11	12	34	9
		Zinc, Zn	mg/kg	0.5	180	190	31	6
SE139333.012	LB077692.014	Arsenic, As	mg/kg	3	9	16	38	53 ②
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	180	0
		Chromium, Cr	mg/kg	0.3	10	13	34	28
		Copper, Cu	mg/kg	0.5	19	19	33	0
		Lead, Pb	mg/kg	1	12	14	38	11
		Nickel, Ni	mg/kg	0.5	3.8	5.5	41	38
		Zinc, Zn	mg/kg	0.5	33	35	36	5
SE139362.003	LB077692.024	Cadmium, Cd	mg/kg	0.3	0.07326438950.1082872403		200	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139330.031	LB077648.014	Arsenic, As	µg/L	1	0.66	0.64	169	0
		Cadmium, Cd	µg/L	0.1	0	0	200	0
		Chromium, Cr	µg/L	1	0.65	0.65	169	0
		Copper, Cu	µg/L	1	1.32	1.3	91	2
		Lead, Pb	µg/L	1	0.58	0.59	186	0
		Nickel, Ni	µg/L	1	1.48	1.69	78	13
		Zinc, Zn	µg/L	5	20.22	18.03	41	11

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.013	LB077544.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE139362.002	LB077546.017		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH C10-C40 Total	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	0	0	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.009	LB077627.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.9	4.2	50	7
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	5.1	50	4
			d8-toluene (Surrogate)	mg/kg	-	4.3	4.3	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.6	5.3	50	15
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE139332.027	LB077627.025	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	3.5	50	19
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	4.2	50	16
			d8-toluene (Surrogate)	mg/kg	-	5.5	4.6	50	19
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.4	4.5	50	19
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE139333.012	LB077628.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.0	4.6	50	14
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	4.6	50	4
			d8-toluene (Surrogate)	mg/kg	-	5.2	4.7	50	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.4	5.5	50	2
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE139362.001	LB077628.023	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0	0	200	0
			Ethylbenzene	mg/kg	0.1	0	0	200	0
			m/p-xylene	mg/kg	0.2	0	0	200	0
			o-xylene	mg/kg	0.1	0	0	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0	0	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.82	5.09	50	5
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.79	5.2	50	8
			d8-toluene (Surrogate)	mg/kg	-	4.83	4.92	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.39	5.51	50	2
		Totals	Total Xylenes*	mg/kg	0.3	0	0	200	0
			Total BTEX*	mg/kg	0.6	0	0	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.009	LB077627.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.9	4.2	30	7
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	5.1	30	4
			d8-toluene (Surrogate)	mg/kg	-	4.3	4.3	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.6	5.3	30	15
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE139332.027	LB077627.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139332.027	LB077627.025	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	3.5	30	19
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	4.2	30	16
			d8-toluene (Surrogate)	mg/kg	-	5.5	4.6	30	19
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.4	4.5	30	19
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE139333.012	LB077628.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.0	4.6	30	14
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	4.6	30	4
			d8-toluene (Surrogate)	mg/kg	-	5.2	4.7	30	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.4	5.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE139362.001	LB077628.023		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.82	5.09	30	5
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.79	5.2	30	8
			d8-toluene (Surrogate)	mg/kg	-	4.83	4.92	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.39	5.51	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0	0	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077697.002	Exchangeable Sodium, Na	mg/kg	2	NA	160	80 - 120	113
	Exchangeable Potassium, K	mg/kg	2	NA	330	80 - 120	96
	Exchangeable Calcium, Ca	mg/kg	2	NA	4347	80 - 120	105
	Exchangeable Magnesium, Mg	mg/kg	2	NA	1578	80 - 120	96

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077666.002	Mercury	mg/kg	0.01	0.21	0.2	70 - 130	105
LB077667.002	Mercury	mg/kg	0.01	0.21	0.2	70 - 130	104
LB077668.002	Mercury	mg/kg	0.01	0.22	0.2	70 - 130	110

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077544.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	112
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	111
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	106
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	105
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	115
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	96
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	96
LB077546.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	97
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	97
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	92
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	95
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	100
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	98
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	83

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077619.002		Delta BHC	µg/L	0.1	0.2	0.2	60 - 140	83
		Heptachlor	µg/L	0.1	0.2	0.2	60 - 140	83
		Aldrin	µg/L	0.1	0.2	0.2	60 - 140	81
		Dieldrin	µg/L	0.1	0.2	0.2	60 - 140	86
		Endrin	µg/L	0.1	0.2	0.2	60 - 140	90
		p,p'-DDT	µg/L	0.1	0.2	0.2	60 - 140	87
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	µg/L	-	0.11	0.15	40 - 130	72

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077544.002		Dichlorvos	mg/kg	0.5	2.0	2	60 - 140	101
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	98
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	2	60 - 140	98
		Ethion	mg/kg	0.2	1.5	2	60 - 140	76
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	116
LB077546.002		Dichlorvos	mg/kg	0.5	2.0	2	60 - 140	101
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	98
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	2	60 - 140	98
		Ethion	mg/kg	0.2	1.5	2	60 - 140	76
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	116

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077619.002		Dichlorvos	µg/L	0.5	9.0	8	60 - 140	113
		Diazinon (Dimpylate)	µg/L	0.5	9.6	8	60 - 140	119
		Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	8.4	8	60 - 140	105
		Ethion	µg/L	0.2	9.6	8	60 - 140	120
	Surrogates	2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	78
		d14-p-terphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	98

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077544.002		Naphthalene	mg/kg	0.1	4.7	4	60 - 140	118
		Acenaphthylene	mg/kg	0.1	4.8	4	60 - 140	120
		Acenaphthene	mg/kg	0.1	5.4	4	60 - 140	135
		Phenanthrene	mg/kg	0.1	4.9	4	60 - 140	122
		Anthracene	mg/kg	0.1	4.9	4	60 - 140	121
		Fluoranthene	mg/kg	0.1	4.7	4	60 - 140	118
		Pyrene	mg/kg	0.1	5.0	4	60 - 140	125
		Benzo(a)pyrene	mg/kg	0.1	3.9	4	60 - 140	97
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	116
LB077546.002		Naphthalene	mg/kg	0.1	4.4	4	60 - 140	109
		Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	111
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	117
		Phenanthrene	mg/kg	0.1	4.5	4	60 - 140	112
		Anthracene	mg/kg	0.1	4.4	4	60 - 140	110
		Fluoranthene	mg/kg	0.1	4.0	4	60 - 140	100
		Pyrene	mg/kg	0.1	4.4	4	60 - 140	111
		Benzo(a)pyrene	mg/kg	0.1	4.3	4	60 - 140	109
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077619.002		Naphthalene	µg/L	0.1	46	40	60 - 140	115
		Acenaphthylene	µg/L	0.1	45	40	60 - 140	113
		Acenaphthene	µg/L	0.1	48	40	60 - 140	120
		Phenanthrene	µg/L	0.1	48	40	60 - 140	121
		Anthracene	µg/L	0.1	48	40	60 - 140	119
		Fluoranthene	µg/L	0.1	44	40	60 - 140	111
		Pyrene	µg/L	0.1	48	40	60 - 140	121
		Benzo(a)pyrene	µg/L	0.1	51	40	60 - 140	127
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.5	0.5	40 - 130	92
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	µg/L	-	0.6	0.5	40 - 130	110

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077544.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	105
LB077546.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	108

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077619.002	Arochlor 1260	µg/L	1	<1	0.4	60 - 140	112

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077736.001	pH	pH Units	-	7.4	7.415	98 - 102	100

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077689.002	Arsenic, As	mg/kg	3	48	50	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	49	50	80 - 120	97
	Chromium, Cr	mg/kg	0.3	47	50	80 - 120	93
	Copper, Cu	mg/kg	0.5	47	50	80 - 120	93
	Lead, Pb	mg/kg	1	48	50	80 - 120	96
	Nickel, Ni	mg/kg	0.5	48	50	80 - 120	97

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077689.002		Zinc, Zn	mg/kg	0.5	53	50	80 - 120	107
LB077691.002		Arsenic, As	mg/kg	3	46	50	80 - 120	92
		Cadmium, Cd	mg/kg	0.3	46	50	80 - 120	93
		Chromium, Cr	mg/kg	0.3	45	50	80 - 120	89
		Copper, Cu	mg/kg	0.5	45	50	80 - 120	89
		Lead, Pb	mg/kg	1	46	50	80 - 120	93
		Nickel, Ni	mg/kg	0.5	47	50	80 - 120	93
		Zinc, Zn	mg/kg	0.5	49	50	80 - 120	98
LB077692.002		Arsenic, As	mg/kg	3	46	50	80 - 120	92
		Cadmium, Cd	mg/kg	0.3	47	50	80 - 120	94
		Chromium, Cr	mg/kg	0.3	45	50	80 - 120	90
		Copper, Cu	mg/kg	0.5	46	50	80 - 120	91
		Lead, Pb	mg/kg	1	47	50	80 - 120	93
		Nickel, Ni	mg/kg	0.5	47	50	80 - 120	94
		Zinc, Zn	mg/kg	0.5	48	50	80 - 120	95

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077648.002	Arsenic, As	µg/L	1	20	20	80 - 120	100
	Cadmium, Cd	µg/L	0.1	20	20	80 - 120	102
	Chromium, Cr	µg/L	1	20	20	80 - 120	101
	Copper, Cu	µg/L	1	21	20	80 - 120	103
	Lead, Pb	µg/L	1	20	20	80 - 120	101
	Nickel, Ni	µg/L	1	20	20	80 - 120	102
	Zinc, Zn	µg/L	5	21	20	80 - 120	105

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077544.002		TRH C10-C14	mg/kg	20	33	40	60 - 140	83
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	85
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	83
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	33	40	60 - 140	83
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	85
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85
LB077546.002		TRH C10-C14	mg/kg	20	39	40	60 - 140	98
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	95
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	80
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	38	40	60 - 140	95
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	90
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077619.002		TRH C10-C14	µg/L	50	920	1200	60 - 140	77
		TRH C15-C28	µg/L	200	1100	1200	60 - 140	94
		TRH C29-C36	µg/L	200	1100	1200	60 - 140	94
	TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	1000	1200	60 - 140	84
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	96
		TRH >C34-C40 (F4)	µg/L	500	590	600	60 - 140	99

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077627.002	Monocyclic	Benzene	mg/kg	0.1	2.8	2.9	60 - 140	96
	Aromatic	Toluene	mg/kg	0.1	2.5	2.9	60 - 140	87
		Ethylbenzene	mg/kg	0.1	2.3	2.9	60 - 140	78
		m/p-xylene	mg/kg	0.2	4.4	5.8	60 - 140	76
		o-xylene	mg/kg	0.1	2.0	2.9	60 - 140	68
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.5	5	60 - 140	70
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
		d8-toluene (Surrogate)	mg/kg	-	4.7	5	60 - 140	95
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	98
LB077628.002	Monocyclic	Benzene	mg/kg	0.1	2.8	2.9	60 - 140	97
	Aromatic	Toluene	mg/kg	0.1	2.5	2.9	60 - 140	84

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077628.002	Monocyclic	Ethylbenzene	mg/kg	0.1	2.1	2.9	60 - 140	72
	Aromatic	m/p-xylene	mg/kg	0.2	4.4	5.8	60 - 140	76
		o-xylene	mg/kg	0.1	2.1	2.9	60 - 140	73
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.2	5	60 - 140	105
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	108
		d8-toluene (Surrogate)	mg/kg	-	6.0	5	60 - 140	119
		Bromofluorobenzene (Surrogate)	mg/kg	-	6.2	5	60 - 140	123

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077578.002	Monocyclic	Benzene	µg/L	0.5	57	45.45	60 - 140	125
	Aromatic	Toluene	µg/L	0.5	56	45.45	60 - 140	123
		Ethylbenzene	µg/L	0.5	59	45.45	60 - 140	130
		m/p-xylene	µg/L	1	100	90.9	60 - 140	113
		o-xylene	µg/L	0.5	56	45.45	60 - 140	123
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	5.0	5	60 - 140	100
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d8-toluene (Surrogate)	µg/L	-	5.4	5	60 - 140	108
		Bromofluorobenzene (Surrogate)	µg/L	-	5.6	5	60 - 140	111

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077627.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	88
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	85
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.5	5	60 - 140	70
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
		d8-toluene (Surrogate)	mg/kg	-	4.7	5	60 - 140	95
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	107
LB077628.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	88
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	81
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.2	5	60 - 140	105
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	108
		d8-toluene (Surrogate)	mg/kg	-	6.0	5	60 - 140	119
		Bromofluorobenzene (Surrogate)	mg/kg	-	6.2	5	60 - 140	123
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	107

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB077578.002		TRH C6-C10	µg/L	50	940	946.63	60 - 140	100
		TRH C6-C9	µg/L	40	720	818.71	60 - 140	88
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	5.0	5	60 - 140	100
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d8-toluene (Surrogate)	µg/L	-	5.4	5	60 - 140	108
		Bromofluorobenzene (Surrogate)	µg/L	-	5.6	5	60 - 140	111
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	610	639.67	60 - 140	96

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139161.017	LB077728.004	Mercury	mg/L	0.0001	0.0082	<0.0001	0.008	103

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139330.024	LB077666.004	Mercury	mg/kg	0.01	0.20	0.01174385506	0.2	93
SE139332.006	LB077667.004	Mercury	mg/kg	0.01	0.20	0.02	0.2	93
SE139332.028	LB077668.004	Mercury	mg/kg	0.01	0.28	0.05	0.2	113

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139332.028	LB077546.007		Naphthalene	mg/kg	0.1	4.6	<0.1	4	115
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	5.0	0.1	4	122
			Acenaphthene	mg/kg	0.1	4.7	<0.1	4	118
			Fluorene	mg/kg	0.1	0.5	<0.1	-	-
			Phenanthrene	mg/kg	0.1	6.9	0.3	4	164 ①
			Anthracene	mg/kg	0.1	5.1	<0.1	4	127
			Fluoranthene	mg/kg	0.1	7.2	1.0	4	156 ①
			Pyrene	mg/kg	0.1	8.7	1.1	4	190 ①
			Benzo(a)anthracene	mg/kg	0.1	4.6	0.6	-	-
			Chrysene	mg/kg	0.1	3.8	0.5	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	4.2	0.7	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	3.2	0.3	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.8	0.7	4	126
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.3	0.5	-	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.8	0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	6.7	1.0	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	6.8	1.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	6.8	1.0	-	-
			Total PAH	mg/kg	0.8	66	6.2	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	94
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139330.026	LB077689.004	Arsenic, As	mg/kg	3	49	2.90543691229	50	93
		Cadmium, Cd	mg/kg	0.3	46	0.11255750112	50	92
		Chromium, Cr	mg/kg	0.3	54	8.79308093458	50	91
		Copper, Cu	mg/kg	0.5	49	4.36727251262	50	89
		Lead, Pb	mg/kg	1	54	12.07151500841	50	84
		Nickel, Ni	mg/kg	0.5	48	2.98849795713	50	91
		Zinc, Zn	mg/kg	0.5	62	24.56265490904	50	75
SE139332.008	LB077691.004	Arsenic, As	mg/kg	3	44	4	50	79
		Cadmium, Cd	mg/kg	0.3	39	<0.3	50	78
		Chromium, Cr	mg/kg	0.3	70	38	50	65 ①
		Copper, Cu	mg/kg	0.5	56	15	50	83
		Lead, Pb	mg/kg	1	55	17	50	76
		Nickel, Ni	mg/kg	0.5	73	36	50	73
		Zinc, Zn	mg/kg	0.5	86	44	50	84
SE139332.030	LB077692.004	Arsenic, As	mg/kg	3	67	28	50	78
		Cadmium, Cd	mg/kg	0.3	42	0.4	50	84
		Chromium, Cr	mg/kg	0.3	56	15	50	84
		Copper, Cu	mg/kg	0.5	71	30	50	83
		Lead, Pb	mg/kg	1	54	10	50	88
		Nickel, Ni	mg/kg	0.5	43	0.9	50	84
		Zinc, Zn	mg/kg	0.5	53	9.7	50	86

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139161.017	LB077648.004	Arsenic, As	µg/L	1	20	<1	20	99
		Cadmium, Cd	µg/L	0.1	21	<0.1	20	103
		Chromium, Cr	µg/L	1	20	<1	20	98
		Copper, Cu	µg/L	1	20	<1	20	102
		Lead, Pb	µg/L	1	20	<1	20	98
		Nickel, Ni	µg/L	1	21	<1	20	104
		Zinc, Zn	µg/L	5	22	<5	20	108

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139332.027	LB077546.006		TRH C10-C14	mg/kg	20	44	<20	40	110
			TRH C15-C28	mg/kg	45	53	<45	40	133
			TRH C29-C36	mg/kg	45	<45	<45	40	85
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	130	<110	-	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	47	<25	40	118
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	47	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	118
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139331.011	LB077627.004	Monocyclic	Benzene	mg/kg	0.1	2.7	<0.1	2.9	94
		Aromatic	Toluene	mg/kg	0.1	2.4	<0.1	2.9	84
			Ethylbenzene	mg/kg	0.1	2.1	<0.1	2.9	72
			m/p-xylene	mg/kg	0.2	4.4	<0.2	5.8	75
			o-xylene	mg/kg	0.1	2.1	<0.1	2.9	73
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.3	4.4	5	85
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	5.1	5	101
			d8-toluene (Surrogate)	mg/kg	-	5.8	5.7	5	116
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.3	5.6	5	126
		Totals	Total Xylenes*	mg/kg	0.3	6.5	<0.3	-	-
			Total BTEX*	mg/kg	0.6	14	<0.6	-	-
SE139332.028	LB077628.004	Monocyclic	Benzene	mg/kg	0.1	3.0	<0.1	2.9	102
		Aromatic	Toluene	mg/kg	0.1	2.7	<0.1	2.9	92
			Ethylbenzene	mg/kg	0.1	2.0	<0.1	2.9	70
			m/p-xylene	mg/kg	0.2	4.4	<0.2	5.8	75
			o-xylene	mg/kg	0.1	2.1	<0.1	2.9	73
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.6	3.5	5	71
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.4	4.2	5	87
			d8-toluene (Surrogate)	mg/kg	-	4.7	4.5	5	93
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.2	4.0	5	104
		Totals	Total Xylenes*	mg/kg	0.3	6.5	<0.3	-	-
			Total BTEX*	mg/kg	0.6	14	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139331.011	LB077627.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	84
			TRH C6-C9	mg/kg	20	<20	<20	23.2	78
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.3	4.4	5	85
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	5.1	5	101
			d8-toluene (Surrogate)	mg/kg	-	5.8	5.7	5	116
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.3	5.6	5	126
		VPH F	Benzene (F0)	mg/kg	0.1	2.7	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	98
SE139332.028	LB077628.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	85
			TRH C6-C9	mg/kg	20	<20	<20	23.2	78
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.6	3.5	5	71
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.4	4.2	5	87

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139332.028	LB077628.004	Surrogates	d8-toluene (Surrogate)	mg/kg	-	4.7	4.5	5	93
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.2	4.0	5	104
		VPH F	Benzene (F0)	mg/kg	0.1	3.0	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	93

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC 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

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
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Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	38
Date Received	15/5/2015

LABORATORY DETAILS

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SGS Reference	**SE139332A R0**
Report Number	0000111384
Date Reported	28/5/2015
Date Started	28/5/2015

COMMENTS

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

SIGNATORIES

Huong Crawford
Production Manager

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC [AN006] Tested: 26/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332A.001	TP09_1.0_AS SOIL - 13/5/2015 SE139332A.014	TP14_0.5_AS SOIL - 14/5/2015 SE139332A.024
pH 1:20	pH Units	-	8.4	7.9	7.9
pH 1:20 plus HCL	pH Units	-	1.8	1.8	1.8
Extraction Solution Used	No unit	-	1	1	1
Mass of Sample Used*	g	-	25	25	25
Volume of ExtractionSolution Used*	mL	-	500	500	500
pH TCLP after 18 hours	pH Units	-	4.8	4.9	5.0

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract [AN420] Tested: 26/5/2015

PARAMETER	UOM	LOR	TP01_0.05_AS SOIL - 13/5/2015 SE139332A.001	TP09_1.0_AS SOIL - 13/5/2015 SE139332A.014	TP14_0.5_AS SOIL - 14/5/2015 SE139332A.024
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1

TCLP (Toxicity Characteristic Leaching Procedure) for Metals [AN006] Tested: 26/5/2015

PARAMETER	UOM	LOR	TP09_0.5_AS SOIL - 13/5/2015 SE139332A.013	TP10_0.05_AS SOIL - 13/5/2015 SE139332A.016	TP12_0.5_AS SOIL - 13/5/2015 SE139332A.020	TP15_0.5_AS SOIL - 13/5/2015 SE139332A.027	TP15_2.0_AS SOIL - 13/5/2015 SE139332A.029
pH 1:20	pH Units	-	9.2	8.9	8.1	8.0	8.0
pH 1:20 plus HCL	pH Units	-	1.9	1.8	1.8	1.8	1.8
Extraction Solution Used	No unit	-	1	1	1	1	1
Mass of Sample Used*	g	-	13	13	13	13	13
Volume of ExtractionSolution Used*	mL	-	250	250	250	250	250
pH TCLP after 18 hours	pH Units	-	5.3	4.9	4.8	4.9	4.9

Metals in Soil (TCLP) by ICPOES [AN320/AN321] Tested: 28/5/2015

PARAMETER	UOM	LOR	TP09_0.5_AS SOIL - 13/5/2015 SE139332A.013	TP10_0.05_AS SOIL - 13/5/2015 SE139332A.016	TP12_0.5_AS SOIL - 13/5/2015 SE139332A.020	TP15_0.5_AS SOIL - 13/5/2015 SE139332A.027	TP15_2.0_AS SOIL - 13/5/2015 SE139332A.029
Lead, Pb	mg/L	0.02	-	-	**0.55**	-	<0.02
Nickel, Ni	mg/L	0.005	**0.037**	**0.055**	-	**0.084**	-

METHOD	METHODOLOGY SUMMARY
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

*	Analysis not covered by the scope of accreditation.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
^	Performed by outside laboratory.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

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

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

STATEMENT OF QA/QC PERFORMANCE

SE139332A R0

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	38

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	SE139332A R0
Report Number	0000111407
Date Reported	28 May 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	8 Soils	Type of documentation received	Email
Date documentation received	25/05/2015@11:15a	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.2°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE139332A R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Metals in Soil (TCLP) by ICPOES

Method: ME-(AU)-[ENV]AN320/AN321

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP09_0.5_AS	SE139332A.013	LB078134	13 May 2015	15 May 2015	09 Nov 2015	28 May 2015	24 Nov 2015	28 May 2015
TP10_0.05_AS	SE139332A.016	LB078134	13 May 2015	15 May 2015	09 Nov 2015	28 May 2015	24 Nov 2015	28 May 2015
TP12_0.5_AS	SE139332A.020	LB078134	13 May 2015	15 May 2015	09 Nov 2015	28 May 2015	24 Nov 2015	28 May 2015
TP15_0.5_AS	SE139332A.027	LB078134	13 May 2015	15 May 2015	09 Nov 2015	28 May 2015	24 Nov 2015	28 May 2015
TP15_2.0_AS	SE139332A.029	LB078134	13 May 2015	15 May 2015	09 Nov 2015	28 May 2015	24 Nov 2015	28 May 2015

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332A.001	LB078020	13 May 2015	15 May 2015	03 Jun 2015	26 May 2015	05 Jul 2015	28 May 2015
TP09_1.0_AS	SE139332A.014	LB078020	13 May 2015	15 May 2015	03 Jun 2015	26 May 2015	05 Jul 2015	28 May 2015
TP14_0.5_AS	SE139332A.024	LB078020	14 May 2015	15 May 2015	04 Jun 2015	26 May 2015	05 Jul 2015	28 May 2015

TCLP (Toxicity Characteristic Leaching Procedure) for Metals

Method: ME-(AU)-[ENV]AN006

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP09_0.5_AS	SE139332A.013	LB078037	13 May 2015	15 May 2015	09 Nov 2015	26 May 2015	09 Nov 2015	28 May 2015
TP10_0.05_AS	SE139332A.016	LB078037	13 May 2015	15 May 2015	09 Nov 2015	26 May 2015	09 Nov 2015	28 May 2015
TP12_0.5_AS	SE139332A.020	LB078037	13 May 2015	15 May 2015	09 Nov 2015	26 May 2015	09 Nov 2015	28 May 2015
TP15_0.5_AS	SE139332A.027	LB078037	13 May 2015	15 May 2015	09 Nov 2015	26 May 2015	09 Nov 2015	28 May 2015
TP15_2.0_AS	SE139332A.029	LB078037	13 May 2015	15 May 2015	09 Nov 2015	26 May 2015	09 Nov 2015	28 May 2015

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC

Method: ME-(AU)-[ENV]AN006

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP01_0.05_AS	SE139332A.001	LB078038	13 May 2015	15 May 2015	27 May 2015	26 May 2015	09 Jun 2015	28 May 2015
TP09_1.0_AS	SE139332A.014	LB078038	13 May 2015	15 May 2015	27 May 2015	26 May 2015	09 Jun 2015	28 May 2015
TP14_0.5_AS	SE139332A.024	LB078038	14 May 2015	15 May 2015	28 May 2015	26 May 2015	09 Jun 2015	28 May 2015

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP01_0.05_AS	SE139332A.001	%	40 - 130%	46
	TP09_1.0_AS	SE139332A.014	%	40 - 130%	58
	TP14_0.5_AS	SE139332A.024	%	40 - 130%	50
d14-p-terphenyl (Surrogate)	TP01_0.05_AS	SE139332A.001	%	40 - 130%	50
	TP09_1.0_AS	SE139332A.014	%	40 - 130%	70
	TP14_0.5_AS	SE139332A.024	%	40 - 130%	66
d5-nitrobenzene (Surrogate)	TP01_0.05_AS	SE139332A.001	%	40 - 130%	42
	TP09_1.0_AS	SE139332A.014	%	40 - 130%	56
	TP14_0.5_AS	SE139332A.024	%	40 - 130%	42

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Metals in Soil (TCLP) by ICPOES

Method: ME-(AU)-[ENV]AN320/AN321

Sample Number	Parameter	Units	LOR	Result
LB078134.001	Lead, Pb	mg/L	0.02	<0.02
	Nickel, Ni	mg/L	0.005	<0.005

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB078020.001		Benzo(a)pyrene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	106
		2-fluorobiphenyl (Surrogate)	%	-	108
		d14-p-terphenyl (Surrogate)	%	-	118

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No duplicates were required for this job.

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Metals in Soil (TCLP) by ICPOES

Method: ME-(AU)-[ENV]AN320/AN321

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB078134.002	Lead, Pb	mg/L	0.02	2.0	2	80 - 120	98
	Nickel, Ni	mg/L	0.005	2.0	2	80 - 120	98

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB078020.002		Benzo(a)pyrene	µg/L	0.1	44	40	60 - 140	109
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.5	0.5	40 - 130	102
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	104
		d14-p-terphenyl (Surrogate)	µg/L	-	0.6	0.5	40 - 130	112

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

MATRIX SPIKE DUPLICATES

SE139332A R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC 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

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

AU.SampleReceipt.Sydney (Sydney)

From: Powell, Imogen [IPowell@pb.com.au]
Sent: Friday, 29 May 2015 10:07 AM
To: AU.Environmental.Sydney (Sydney); AU.SampleReceipt.Sydney (Sydney)
Cc: Hutson, Philip
Subject: FW: SGS Sample Receipt Advice (Ref: 2201679B - Syd Water ESA'S-Ashfield, Lab Ref: SE139332)
Attachments: SE139332_Receipt.PDF; SE139332_COC.PDF

Hi Huong

Please could you schedule lead analysis on sample TP12_1.0_AS? (+39)

On 3 day TAT

Thanks

Imogen

WSP | Parsons Brinckerhoff
Imogen Powell
Senior Environmental Scientist

D: +61 2 92721478

IPowell@pb.com.au

SGS Alexandria Environmental
SE139332B COC
Received: 15 – May – 2015

Due 03/06/2015
3 DAYS TAT.

-----Original Message-----
From: AU.Samplereceipt.Sydney@SGS.com [mailto:AU.Samplereceipt.Sydney@SGS.com]
Sent: Tuesday, 19 May 2015 4:51 PM
To: Powell, Imogen; Robinson, Daniel
Subject: SGS Sample Receipt Advice (Ref: 2201679B - Syd Water ESA'S-Ashfield, Lab Ref: SE139332)

Dear Imogen Powell,

Please be advised we have received samples for analysis as detailed in the attached documentation.

Best regards,
SGS Alexandria Sample Administration Team

SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499

SAMPLE RECEIPT ADVICE

SE139332B

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	39

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	Fri 15/5/2015
Report Due	Wed 3/6/2015
SGS Reference	**SE139332B**

SUBMISSION DETAILS

This is to confirm that 39 samples were received on Friday 15/5/2015. Results are expected to be ready by Wednesday 3/6/2015. Please quote SGS reference SE139332B when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Soil	Type of documentation received	Email
Date documentation received	29/05/2015@10:07am	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.2°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

SAMPLE RECEIPT ADVICE

SE139332B

CLIENT DETAILS

Client Parsons Brinckerhoff Australia Pty Ltd

Project 2201679B - Syd Water ESA'S-Ashfield

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content	Total Recoverable Metals in Soil by ICPOES from
039	TP12_1.0_AS	1	1

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 .

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	39
Date Received	15/5/2015

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	**SE139332B R0**
Report Number	0000111880
Date Reported	3/6/2015
Date Started	29/5/2015

COMMENTS

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

SIGNATORIES

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest [AN040/AN320] Tested: 2/6/2015

PARAMETER	UOM	LOR	TP12_1.0_AS SOIL - 13/5/2015 SE139332B.039
Lead, Pb	mg/kg	1	**14**

Moisture Content [AN002] Tested: 29/5/2015

PARAMETER	UOM	LOR	TP12_1.0_AS SOIL - 13/5/2015 SE139332B.039
% Moisture	%	0.5	**24.0**

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.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.

FOOTNOTES

*	Analysis not covered by the scope of accreditation.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
^	Performed by outside laboratory.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

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

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

STATEMENT OF QA/QC PERFORMANCE

SE139332B R0

CLIENT DETAILS

Contact	Imogen Powell
Client	Parsons Brinckerhoff Australia Pty Ltd
Address	Level 27, 680 George St NSW 2000
Telephone	02 9272 5100
Facsimile	02 9272 5101
Email	ipowell@pb.com.au
Project	**2201679B - Syd Water ESA'S-Ashfield**
Order Number	**76563--76567**
Samples	39

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	SE139332B R0
Report Number	0000111881
Date Reported	03 Jun 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Moisture Content	1 item

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	Email
Date documentation received	29/05/2015@10:07a	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.2°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE139332B R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP12_1.0_AS	SE139332B.039	LB078228	13 May 2015	15 May 2015	27 May 2015	29 May 2015†	03 Jun 2015	01 Jun 2015

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP12_1.0_AS	SE139332B.039	LB078340	13 May 2015	15 May 2015	09 Nov 2015	02 Jun 2015	09 Nov 2015	03 Jun 2015

SURROGATES

SE139332B R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest — **Method: ME-(AU)-[ENV]AN040/AN320**

Sample Number	Parameter	Units	LOR	Result
LB078340.001	Lead, Pb	mg/kg	1	<1

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139870.005	LB078228.010	% Moisture	%w/w	0.5	38.377723970	38.5390428211	31	0

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE139788.001	LB078340.014	Lead, Pb	mg/kg	1	58.8764213564	64.5933468013	32	9
SE139788.010	LB078340.024	Lead, Pb	mg/kg	1	31.2913894004	5.963388497	31	11

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest — **Method: ME-(AU)-[ENV]AN040/AN320**

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB078340.002	Lead, Pb	mg/kg	1	49	50	80 - 120	99

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest — **Method: ME-(AU)-[ENV]AN040/AN320**

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE139332B.03	LB078340.004	Lead, Pb	mg/kg	1	60	14	50	91

MATRIX SPIKE DUPLICATES

SE139332B R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC 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

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

Invoice to:
Comments:

Sample I.D.	Container Size	Sample Location	Medium*	Preservative	Filtered (X)	TPH	BTEX	PAH's	OC/OP/PC	Metals**							Initials	Comments/Addi and/or Analy
Dupla AS	Jar					1	1	1	1	1							DR	
Dup2a AS	Jar							1		1							DR	

Environmental Division
Sydney
Work Order Reference
ES1522077

Telephone . +61-2-8784 8555

	Relinquished by:	Relinquished by:	Medium*: S = Soil, W = Wate
	Date & Time:	Date & Time:	Legend**: (circle the following t
	Company:	Company:	Metals: Al As Be Co Li Mg Mn Ni
	Signature:	Signature:	
11-1 1530	Received in Good Order & Condition by (Name):	Received in Good Order & Condition by (Name):	Samples on Ice: Yes
	Date & Time:	Date & Time:	
	Company:	Company:	***Please fax back a sig samples are received***
	Signature:	Signature:	

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1522077**

Client	: **PARSONS BRINCKERHOFF AUST P/L**	Laboratory	: Environmental Division Sydney
Contact	: MR DAN ROBINSON	Contact	:
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: danrobinson@pb.com.au	E-mail	:
Telephone	: +61 02 92725100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 92725101	Facsimile	: +61-2-8784 8500
Project	: 2201679B_AS SYD WATER	Page	: 1 of 2
Order number	: ----	Quote number	: ES2014PARBRINSW0202 (EN/008/14)
C-O-C number	: 76568	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ASHFIELD		
Sampler	:		

Dates

Date Samples Received	: 15-May-2015	Issue Date	: 15-May-2015
Client Requested Due Date	: 22-May-2015	Scheduled Reporting Date	: **22-May-2015**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 11.1'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES1522077-001	[14-May-2015]	DUP1A AS	✓			✓
ES1522077-002	[14-May-2015]	DUP2A AS	✓	✓	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	accountspayable@pb.com.au

DAN ROBINSON

- *AU Certificate of Analysis - NATA (COA)	Email	danrobinson@pb.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	danrobinson@pb.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	danrobinson@pb.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	danrobinson@pb.com.au
- A4 - AU Tax Invoice (INV)	Email	danrobinson@pb.com.au
- Chain of Custody (CoC) (COC)	Email	danrobinson@pb.com.au
- EDI Format - ENMRG (ENMRG)	Email	danrobinson@pb.com.au
- EDI Format - ESDAT (ESDAT)	Email	danrobinson@pb.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1522077**	Page	: 1 of 6
Client	: **PARSONS BRINCKERHOFF AUST P/L**	Laboratory	: Environmental Division Sydney
Contact	: MR DAN ROBINSON	Contact	:
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: danrobinson@pb.com.au	E-mail	:
Telephone	: +61 02 92725100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 92725101	Facsimile	: +61-2-8784 8500
Project	: 2201679B_AS SYD WATER	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 15-May-2015 15:30
C-O-C number	: 76568	Date Analysis Commenced	: 18-May-2015
Sampler	: ----	Issue Date	: 22-May-2015 16:29
Site	: ASHFIELD		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **EP071: Result of sample DUP1A AS has been confirmed by re-extraction and re-analysis.**
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP1A AS	DUP2A AS	----	----	----
			Client sampling date / time	[14-May-2015]	[14-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit	ES1522077-001	ES1522077-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1	%	6.9	7.9	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	40	7	----	----	----
Copper	7440-50-8	5	mg/kg	13	46	----	----	----
Lead	7439-92-1	5	mg/kg	14	37	----	----	----
Nickel	7440-02-0	2	mg/kg	34	11	----	----	----
Zinc	7440-66-6	5	mg/kg	34	44	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP1A AS	DUP2A AS	----	----	----
				Client sampling date / time	[14-May-2015]	[14-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit		ES1522077-001	ES1522077-002	--------	--------	--------
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP1A AS	DUP2A AS	----	----	----
				Client sampling date / time	[14-May-2015]	[14-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit		ES1522077-001	ES1522077-002	--------	--------	--------
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		**170**	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		**560**	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**730**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		**520**	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		**630**	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**1150**	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP1A AS	DUP2A AS	----	----	----
			Client sampling date / time	[14-May-2015]	[14-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit	ES1522077-001	ES1522077-002	--------	--------	--------
				Result	Result	Result	Result	Result
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	75.0	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	101	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	81.2	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	111	82.5	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	99.5	98.6	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	87.2	79.0	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	108	92.6	----	----	----
Anthracene-d10	1719-06-8	0.5	%	122	95.8	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	95.0	101	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	106	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	109	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	84.4	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: **ES1522077**	Page	: 1 of 11
Client	: **PARSONS BRINCKERHOFF AUST P/L**	Laboratory	: Environmental Division Sydney
Contact	: MR DAN ROBINSON	Contact	:
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: danrobinson@pb.com.au	E-mail	:
Telephone	: +61 02 92725100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 92725101	Facsimile	: +61-2-8784 8500
Project	: 2201679B_AS SYD WATER	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 15-May-2015
C-O-C number	: 76568	Date Analysis Commenced	: 18-May-2015
Sampler	: ----	Issue Date	: 22-May-2015
Site	: ASHFIELD	No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 103915)									
ES1522077-002	DUP2A AS	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	7.9	6.6	17.5	No Limit
ES1522110-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	16.7	15.7	6.09	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 104780)									
ES1522014-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	28	29	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	16.9	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	19	9.84	No Limit
ES1522077-001	DUP1A AS	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	40	30	28.1	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	34	31	8.39	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	17	26.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	14	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	34	33	3.58	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 104781)									
ES1522014-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1522077-001	DUP1A AS	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 101746)									
ES1522075-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 101747)									
ES1522075-001	Anonymous	EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 101747) - continued									
ES1522075-001	Anonymous	EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 101747)									
ES1522075-001	Anonymous	EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 101734)									
ES1522039-021	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 101734) - continued									
ES1522039-021	Anonymous	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1522055-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 101745)									
ES1522075-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 101745) - continued									
ES1522075-001	Anonymous	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 101728)									
ES1522055-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1522024-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 101744)									
ES1522075-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 101728)									
ES1522055-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1522024-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 101744)									
ES1522075-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 101728)									
ES1522055-005	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1522024-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 104780)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	104	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	95.0	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	91.9	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	114	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	92.3	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	103	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	96.0	81	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 104781)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	98.5	70	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 101746)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	101	57	117
EP068A: Organochlorine Pesticides (OC) (QCLot: 101747)								
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	76	120
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	69	117
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	96.0	67	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	118
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	110	71	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	69	119
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	100	69	119
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	76	120
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	67	121
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	65	113
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	66	118
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	60	124
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	67	123
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	57	115
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	65	123
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	71	115
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	116
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	68	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	66	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	95.9	65	129
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	68	120
EP068B: Organophosphorus Pesticides (OP) (QCLot: 101747)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 101747) - continued								
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	42	126
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	68	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	67	123
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	70	118
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	68	114
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	100	55	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	64	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	73	117
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	82.1	56	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	64	124
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	70	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	64	120
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	71	115
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	70	120
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	81.2	54	122
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	94.5	68	122
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	94.7	69	123
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69	115
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	68	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 101734)								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	88.6	79	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	87.9	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	88.2	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	88.3	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.6	76	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.6	70	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	92.6	72	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.6	77	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	100	81	123
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	89.6	72	113
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.3	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	89.8	77	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	89.3	71	113
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	99.0	80	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	88.4	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	89.3	79	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 101745)								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	79	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 101745) - continued								
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	86.4	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	97.3	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.2	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.4	76	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	101	70	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	91.6	72	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	92.2	77	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	99.9	81	123
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	91.5	72	113
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	91.5	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	93.6	77	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.2	71	113
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.0	80	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	99.6	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.5	79	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 101728)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	117	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 101744)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	106	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	250 mg/kg	116	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	106	64	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 101728)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	110	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 101744)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	108	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	116	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	200 mg/kg	90.3	63	131
EP080: BTEXN (QCLot: 101728)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	103	62	116
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.1	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	99.6	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	107	62	138
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	60	120
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	62	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 104780)							
ES1522014-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	97.1	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.4	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	96.4	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	93.5	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.8	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 104781)							
ES1522014-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	101	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 101746)							
ES1522075-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	91.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 101747)							
ES1522075-001	Anonymous	EP068: 4.4`-DDT	50-29-3	2 mg/kg	87.8	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	85.8	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	80.9	70	130
		EP068: Endrin	72-20-8	2 mg/kg	90.9	70	130
		EP068: gamma-BHC	58-89-9	0.5 mg/kg	82.4	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	84.0	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 101747)							
ES1522075-001	Anonymous	EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	86.9	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	78.7	70	130
		EP068: Diazinon	333-41-5	0.5 mg/kg	91.5	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	84.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	89.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 101734)							
ES1522039-021	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	84.7	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	86.3	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 101745)							
ES1522075-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.3	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 101728)							
ES1522024-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	115	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 101744)							
ES1522075-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	103	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	104	53	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 101744) - continued							
ES1522075-001	Anonymous	EP071: C29 - C36 Fraction	----	1714 mg/kg	125	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 101728)							
ES1522024-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	109	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 101744)							
ES1522075-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	98.3	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	122	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080: BTEXN (QCLot: 101728)							
ES1522024-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	101	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	100	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	98.0	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	90.8	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	101	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	96.8	70	130

QA/QC Compliance Assessment for DQO Reporting

Work Order	: **ES1522077**	Page	: 1 of 4
Client	: **PARSONS BRINCKERHOFF AUST P/L**	Laboratory	: Environmental Division Sydney
Contact	: MR DAN ROBINSON	Telephone	: +61-2-8784 8555
Project	: 2201679B_AS SYD WATER	Date Samples Received	: 15-May-2015
Site	: ASHFIELD	Issue Date	: 22-May-2015
Sampler	: ----	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
DUP1A AS, DUP2A AS	**14-May-2015**	**----**	----	----	**20-May-2015**	28-May-2015	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
DUP1A AS, DUP2A AS	**14-May-2015**	**21-May-2015**	10-Nov-2015	✓	**22-May-2015**	10-Nov-2015	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
DUP1A AS, DUP2A AS	**14-May-2015**	**21-May-2015**	11-Jun-2015	✓	**22-May-2015**	11-Jun-2015	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
DUP1A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**20-May-2015**	27-Jun-2015	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
DUP1A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**20-May-2015**	27-Jun-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
DUP1A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**20-May-2015**	27-Jun-2015	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
DUP2A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**19-May-2015**	27-Jun-2015	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
DUP1A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**20-May-2015**	27-Jun-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
DUP1A AS	**14-May-2015**	**18-May-2015**	28-May-2015	✓	**20-May-2015**	28-May-2015	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	**10.53**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.33**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.