Appendix D – Photographic Log

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
1	11-17/04/12

Description

Looking west from centre of site, adjacent to BH68.

Photo No.	**Date**
2	11-17/04/12

Description

Looking east from GBH19.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
3	11-17/04/12

Description

Looking south from BH119.
Tin sheds on far right.

Photo No.	**Date**
4	11-17/04/12

Description

Abandoned shed in vicinity of BH133.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
5	11-17/04/12

Description

Tin shed in vicinity of BH133. Contained old shower and toilet.

Photo No.	**Date**
6	11-17/04/12

Description

Rusted 200L drums adjacent to SS01. Empty. Labelled Methyl Chloride.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
7	11-17/04/12

Description

Rusted 200L drums adjacent to SS01. Empty. Labelled Methyl Chloride.

Photo No.	**Date**
8	11-17/04/12

Description

Tin shed adjacent to BH137. Contained car tyres.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
9	11-17/04/12

Description

Rusted car body adjacent to BH76.

Photo No.	**Date**
10	11-17/04/12

Description

Discarded plastic containers adjacent to BH101.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
11	11-17/04/12

Description

Empty plastic drum adjacent to BH131.

Photo No.	**Date**
12	11-17/04/12

Description

Scrap metal adjacent to BH134.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
13	11-17/04/12

Description

Concrete boulders in vicinity of BH140. Potentially former driveway.

Photo No.	**Date**
14	11-17/04/12

Description

Metal irrigation pipes on surface. 5cm diameter. In vicinity of BH147.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
15	11-17/04/12

Description

Scrap metal adjacent to BH160.

Photo No.	**Date**
16	11-17/04/12

Description

Discarded metal and tyre adjacent to BH174.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
17	11-17/04/12

Description

Discarded metal in vicinity of BH174.

Photo No.	**Date**
18	11-17/04/12

Description

Plastic irrigation pipes on surface adjacent to BH115. Approximately 5cm diameter.

WSP	PHOTOGRAPHIC LOG	
Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
19	11-17/04/12

Description

Suspected septic overflow in vicinity of GBH19. Sewage odour.

Photo No.	**Date**
20	16/05/12

Description

Suspected concrete dust. Located in cleared stockpile between existing dams.

WSP	PHOTOGRAPHIC LOG	
Client Name WSPT	**Site Location** Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	**Project No.** 00030337.01

Photo No.	**Date**
21	16/05/12

Description

Scrap metal adjacent to western most dam.

Photo No.	**Date**
22	16/05/12

Description

Scrap metal and rubbish pile located south east of dams (identified in aerial photographs).

WSP	**PHOTOGRAPHIC LOG**

Client Name	**Site Location**	**Project No.**
WSPT	Cnr of Horsley Drive and Cowpasture Road, Wetherill Park NSW	00030337.01

Photo No.	**Date**
23	16/05/12

Description

Building rubble to the east of dams.

Appendix E – Results Tables

Table 1 WSP 2012 Analytical Soil Results

Table 2 WSP 2012 Soil RPDs

WSP Environmental Pty Ltd

Table 1. Analytical Soil Results

			Metals								Organophosphorous Pesticides								VOC
		Hexachlorobenzene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Fenitrothion	Ronnel	Methylene chloride
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	4	0.5	1	1	1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10
NEPM 1999 HIL F			125	25		1250	375	18.75	750	8750									
Field_ID	**LocCode**	**Depth**																	
Comp 01	Comp 01	0.1	<0.1	7	<0.5	21	70	30	<0.1	11	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 01 - Trip	Comp 01 - Trip	0.1	-	6	<0.5	18	39	29	<0.1	11	63	-	-	-	-	-	-	-	-	-
Comp 02	Comp 02	0.1	<0.1	7	<0.5	21	46	31	<0.1	10	61	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 03	Comp 03	0.1	<0.1	7	<0.5	19	45	26	<0.1	10	79	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 04	Comp 04	0.1	<0.1	9	<0.5	21	38	27	<0.1	11	80	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 05	Comp 05	0.1	<0.1	8	<0.5	19	37	21	<0.1	10	49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 06	Comp 06	0.1	<0.1	9	<0.5	19	40	26	<0.1	12	57	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 07	Comp 07	0.1	<0.1	8	<0.5	21	29	21	<0.1	13	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 08	Comp 08	0.1	<0.1	7	<0.5	19	26	19	<0.1	11	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 09	Comp 09	0.1	<0.1	7	<0.5	22	27	21	<0.1	9	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 10	Comp 10	0.1	<0.1	6	<0.5	19	28	21	<0.1	10	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 11	Comp 11	0.1	<0.1	8	<0.5	20	30	23	<0.1	11	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 12	Comp 12	0.1	<0.1	8	<0.5	20	33	24	<0.1	12	49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 13	Comp 13	0.1	<0.1	9	<0.5	22	49	21	<0.1	15	71	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 14	Comp 14	0.1	<0.1	8	<0.5	22	34	19	<0.1	11	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 15	Comp 15	0.1	<0.1	10	<0.5	21	32	22	<0.1	9	87	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 16	Comp 16	0.1	<0.1	8	<0.5	22	44	29	0.1	12	70	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 17	Comp 17	0.1	<0.1	8	<0.5	21	41	18	<0.1	18	64	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 18	Comp 18	0.1	<0.1	6	<0.5	21	43	19	<0.1	12	53	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 19	Comp 19	0.1	<0.1	6	<0.5	19	39	20	<0.1	12	57	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 20	Comp 20	0.1	<0.1	11	<0.5	20	31	19	<0.1	11	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 21	Comp 21	0.1	<0.1	10	<0.5	21	32	17	<0.1	7	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 22	Comp 22	0.1	<0.1	10	<0.5	18	26	15	<0.1	7	35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 23	Comp 23	0.1	<0.1	12	<0.5	25	31	19	<0.1	7	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 24	Comp 24	0.1	<0.1	9	<0.5	22	29	21	0.1	7	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 25	Comp 25	0.1	<0.1	13	<0.5	22	25	20	<0.1	7	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 26	Comp 26	0.1	<0.1	11	<0.5	23	23	20	<0.1	9	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Intra Dup 1	Comp 26	0.1	<0.1	11	<0.5	23	20	16	<0.1	9	35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Inter Dup 1	Comp 26	0.1	<0.05	19	<1	24	22	21	<0.1	9	44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
Comp 27	Comp 27	0.1	<0.1	6	<0.5	21	29	16	<0.1	8	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 28	Comp 28	0.1	<0.1	13	<0.5	25	37	27	0.1	12	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 29	Comp 29	0.1	<0.1	11	<0.5	19	40	30	0.1	10	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 30	Comp 30	0.1	<0.1	10	<0.5	18	29	29	<0.1	11	75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 31	Comp 31	0.1	<0.1	8	<0.5	24	26	29	<0.1	8	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 31 - Trip	Comp 31 - Trip	0.1	-	8	<0.5	22	31	56	<0.1	8	71	-	-	-	-	-	-	-	-	-
Comp 32	Comp 32	0.1	<0.1	5	<0.5	16	40	38	<0.1	11	72	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 33	Comp 33	0.1	<0.1	5	<0.5	17	25	16	<0.1	8	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 34	Comp 34	0.1	<0.1	20	<0.5	21	41	61	<0.1	18	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 35	Comp 35	0.1	<0.1	7	<0.5	19	33	26	<0.1	8	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 36	Comp 36	0.1	<0.1	7	<0.5	23	27	21	<0.1	6	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 37	Comp 37	0.1	<0.1	7	<0.5	20	24	19	<0.1	6	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 38	Comp 38	0.1	<0.1	12	<0.5	24	36	20	<0.1	10	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 39	Comp 39	0.1	<0.1	7	<0.5	20	48	23	<0.1	12	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 40	Comp 40	0.1	<0.1	6	<0.5	20	35	31	<0.1	20	65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 41	Comp 41	0.1	<0.1	6	<0.5	19	35	19	<0.1	14	53	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 42	Comp 42	0.1	<0.1	6	<0.5	19	36	18	<0.1	9	45	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 43	Comp 43	0.1	<0.1	14	<0.5	23	58	22	<0.1	22	76	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 44	Comp 44	0.1	<0.1	4	<0.5	20	33	25	0.2	16	59	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 45	Comp 45	0.1	<0.1	5	<0.5	18	36	23	<0.1	12	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 46	Comp 46	0.1	<0.1	5	<0.5	19	35	18	<0.1	13	54	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 47	Comp 47	0.1	<0.1	7	<0.5	22	37	21	<0.1	12	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 48	Comp 48	0.1	<0.1	11	<0.5	20	36	21	<0.1	17	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 49	Comp 49	0.1	<0.1	6	<0.5	21	30	22	<0.1	11	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Intra Dup 2	Comp 49	0.1	<0.1	7	<0.5	23	54	20	<0.1	11	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Inter Dup 2	Comp 49	0.1	<0.1	10	<1	22	43	22	<0.1	10	59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
Comp 50	Comp 50	0.1	<0.1	5	<0.5	22	25	23	<0.1	10	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 51	Comp 51	0.1	<0.1	6	<0.5	22	44	96	<0.1	16	220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 52	Comp 52	0.1	<0.1	5	<0.5	20	33	66	0.1	12	130	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 53	Comp 53	0.1	-	8	<0.5	17	17	23	<0.1	10	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Intra Dup 3	Comp 53	0.1	-	7	<0.5	16	22	19	<0.1	6	31	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Inter Dup 3	Comp 53	0.1	<0.5	12	<1	23	37	32	<0.1	12	63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Comp 54	Comp 54	0.1	-	7	<0.5	16	26	21	<0.1	9	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Comp 55	Comp 55	0.1	-	10	<0.5	16	50	29	<0.1	8	110	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
SS01	SS01	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10
SS02	SS02	0.05	-	8	<0.5	17	21	22	<0.1	11	93	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Statistical Summary																				
Number of Results			65	65	65	65	65	65	65	65	63	63	63	63	63	63	63	63	1
Number of Detects		6	65	1	65	65	65	7	65	65	1	1	1	1	1	1	3	3	0
Minimum Concentration		<0.05	4	<0.5	16	17	15	<0.1	6	31	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<10
Minimum Detect		ND	4	ND	16	17	15	0.1	6	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration		<0.5	20	<1	25	70	96	0.2	22	220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10
Maximum Detect		ND	20	ND	25	70	96	0.2	22	220	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration		0.053	8.4	0.26	20	35	26	0.056	11	60	0.049	0.049	0.049	0.049	0.049	0.049	0.05	0.05	-
Median Concentration		0.05	8	0.25	21	33.5	21.5	0.05	11	53.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Standard Deviation		0.027	3	0.053	2.2	9.6	13	0.023	3.3	27	0.005	0.005	0.005	0.005	0.005	0.005	0.003	0.003	-
Number of Guideline Exceedances		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Guideline acceptance criteria has been quartered as four primary samples were combined per composite

WSP Environmental Pty Ltd

Table 1. Analytical Soil Results

			Organochlorine Pesticides																				
			4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 1999 HIL F						12.5							250								12.5		
Field_ID	**LocCode**	**Depth**																					
Comp 01	Comp 01	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 01 - Trip	Comp 01 - Trip	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Comp 02	Comp 02	0.1	0.5	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 03	Comp 03	0.1	0.3	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 04	Comp 04	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 05	Comp 05	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 06	Comp 06	0.1	0.3	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 07	Comp 07	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 08	Comp 08	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 09	Comp 09	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 10	Comp 10	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 11	Comp 11	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 12	Comp 12	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 13	Comp 13	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 14	Comp 14	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 15	Comp 15	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 16	Comp 16	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 17	Comp 17	0.1	0.2	<0.1	<0.1	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 18	Comp 18	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 19	Comp 19	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 20	Comp 20	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 21	Comp 21	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 22	Comp 22	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 23	Comp 23	0.1	0.4	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 24	Comp 24	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 25	Comp 25	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 26	Comp 26	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Intra Dup 1	Comp 26	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Inter Dup 1	Comp 26	0.1	0.1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.225	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Comp 27	Comp 27	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 28	Comp 28	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 29	Comp 29	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 30	Comp 30	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 31	Comp 31	0.1	0.4	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 31 - Trip	Comp 31 - Trip	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Comp 32	Comp 32	0.1	0.9	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	1.35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 33	Comp 33	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 34	Comp 34	0.1	<0.1	<0.1	<0.1	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 35	Comp 35	0.1	0.3	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 36	Comp 36	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 37	Comp 37	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 38	Comp 38	0.1	0.3	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 39	Comp 39	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 40	Comp 40	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 41	Comp 41	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 42	Comp 42	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 43	Comp 43	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 44	Comp 44	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 45	Comp 45	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 46	Comp 46	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 47	Comp 47	0.1	0.6	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 48	Comp 48	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 49	Comp 49	0.1	0.5	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Intra Dup 2	Comp 49	0.1	1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Inter Dup 2	Comp 49	0.1	0.86	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.985	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Comp 50	Comp 50	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 51	Comp 51	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 52	Comp 52	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 53	Comp 53	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Intra Dup 3	Comp 53	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Inter Dup 3	Comp 53	0.1	0.53	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Comp 54	Comp 54	0.1	0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Comp 55	Comp 55	0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS01	SS01	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02	SS02	0.05	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Statistical Summary

Number of Results	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
Number of Detects	33	1	1	3	1	1	1	1	1	3	30	3	1	1	1	1	1	1	1	1	1	1
Minimum Concentration	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1
Minimum Detect	0.1	ND	ND	0.25	ND	ND	ND	ND	ND	0.2	0.2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	1	<0.1	<0.1	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	1.35	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2
Maximum Detect	1	ND	ND	0.25	ND	ND	ND	ND	ND	0.4	1.35	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.18	0.049	0.049	0.1	0.049	0.049	0.049	0.049	0.049	0.06	0.28	0.054	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.052
Median Concentration	0.1	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.15	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation	0.22	0.005	0.005	0.03	0.005	0.005	0.005	0.005	0.005	0.049	0.24	0.027	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.011
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Guideline acceptance criteria has been quartered as four primary samples were combined per composite

WSP Environmental Pty Ltd

Table 1. Analytical Soil Results

	BTEX				TPH				
	Benzene	Ethylbenzene	Toluene	Xylene (Total)	TPH (C6-C9)	TPH (C10-C14)	TPH (C15-C28)	TPH (C19-C36)	TPH = SUM C10-C36
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	1	0.1	3	25	50	100	100	250
NEPM 1999 HIL F									

Field_ID	LocCode	Depth									
Comp 01	Comp 01	0.1	-	-	-	-	-	-	-	-	-
Comp 01 - Trip	Comp 01 - Trip	0.1	-	-	-	-	-	-	-	-	-
Comp 02	Comp 02	0.1	-	-	-	-	-	-	-	-	-
Comp 03	Comp 03	0.1	-	-	-	-	-	-	-	-	-
Comp 04	Comp 04	0.1	-	-	-	-	-	-	-	-	-
Comp 05	Comp 05	0.1	-	-	-	-	-	-	-	-	-
Comp 06	Comp 06	0.1	-	-	-	-	-	-	-	-	-
Comp 07	Comp 07	0.1	-	-	-	-	-	-	-	-	-
Comp 08	Comp 08	0.1	-	-	-	-	-	-	-	-	-
Comp 09	Comp 09	0.1	-	-	-	-	-	-	-	-	-
Comp 10	Comp 10	0.1	-	-	-	-	-	-	-	-	-
Comp 11	Comp 11	0.1	-	-	-	-	-	-	-	-	-
Comp 12	Comp 12	0.1	-	-	-	-	-	-	-	-	-
Comp 13	Comp 13	0.1	-	-	-	-	-	-	-	-	-
Comp 14	Comp 14	0.1	-	-	-	-	-	-	-	-	-
Comp 15	Comp 15	0.1	-	-	-	-	-	-	-	-	-
Comp 16	Comp 16	0.1	-	-	-	-	-	-	-	-	-
Comp 17	Comp 17	0.1	-	-	-	-	-	-	-	-	-
Comp 18	Comp 18	0.1	-	-	-	-	-	-	-	-	-
Comp 19	Comp 19	0.1	-	-	-	-	-	-	-	-	-
Comp 20	Comp 20	0.1	-	-	-	-	-	-	-	-	-
Comp 21	Comp 21	0.1	-	-	-	-	-	-	-	-	-
Comp 22	Comp 22	0.1	-	-	-	-	-	-	-	-	-
Comp 23	Comp 23	0.1	-	-	-	-	-	-	-	-	-
Comp 24	Comp 24	0.1	-	-	-	-	-	-	-	-	-
Comp 25	Comp 25	0.1	-	-	-	-	-	-	-	-	-
Comp 26	Comp 26	0.1	-	-	-	-	-	-	-	-	-
Intra Dup 1	Comp 26	0.1	-	-	-	-	-	-	-	-	-
Inter Dup 1	Comp 26	0.1	-	-	-	-	-	-	-	-	-
Comp 27	Comp 27	0.1	-	-	-	-	-	-	-	-	-
Comp 28	Comp 28	0.1	-	-	-	-	-	-	-	-	-
Comp 29	Comp 29	0.1	-	-	-	-	-	-	-	-	-
Comp 30	Comp 30	0.1	-	-	-	-	-	-	-	-	-
Comp 31	Comp 31	0.1	-	-	-	-	-	-	-	-	-
Comp 31 - Trip	Comp 31 - Trip	0.1	-	-	-	-	-	-	-	-	-
Comp 32	Comp 32	0.1	-	-	-	-	-	-	-	-	-
Comp 33	Comp 33	0.1	-	-	-	-	-	-	-	-	-
Comp 34	Comp 34	0.1	-	-	-	-	-	-	-	-	-
Comp 35	Comp 35	0.1	-	-	-	-	-	-	-	-	-
Comp 36	Comp 36	0.1	-	-	-	-	-	-	-	-	-
Comp 37	Comp 37	0.1	-	-	-	-	-	-	-	-	-
Comp 38	Comp 38	0.1	-	-	-	-	-	-	-	-	-
Comp 39	Comp 39	0.1	-	-	-	-	-	-	-	-	-
Comp 40	Comp 40	0.1	-	-	-	-	-	-	-	-	-
Comp 41	Comp 41	0.1	-	-	-	-	-	-	-	-	-
Comp 42	Comp 42	0.1	-	-	-	-	-	-	-	-	-
Comp 43	Comp 43	0.1	-	-	-	-	-	-	-	-	-
Comp 44	Comp 44	0.1	-	-	-	-	-	-	-	-	-
Comp 45	Comp 45	0.1	-	-	-	-	-	-	-	-	-
Comp 46	Comp 46	0.1	-	-	-	-	-	-	-	-	-
Comp 47	Comp 47	0.1	-	-	-	-	-	-	-	-	-
Comp 48	Comp 48	0.1	-	-	-	-	-	-	-	-	-
Comp 49	Comp 49	0.1	-	-	-	-	-	-	-	-	-
Intra Dup 2	Comp 49	0.1	-	-	-	-	-	-	-	-	-
Inter Dup 2	Comp 49	0.1	-	-	-	-	-	-	-	-	-
Comp 50	Comp 50	0.1	-	-	-	-	-	-	-	-	-
Comp 51	Comp 51	0.1	-	-	-	-	-	-	-	-	-
Comp 52	Comp 52	0.1	-	-	-	-	-	-	-	-	-
Comp 53	Comp 53	0.1	-	-	-	-	-	-	-	-	-
Intra Dup 3	Comp 53	0.1	-	-	-	-	-	-	-	-	-
Inter Dup 3	Comp 53	0.1	-	-	-	-	-	-	-	-	-
Comp 54	Comp 54	0.1	-	-	-	-	-	-	-	-	-
Comp 55	Comp 55	0.1	-	-	-	-	-	-	-	-	-
SS01	SS01	0.05	-	-	-	-	-	-	-	-	-
SS02	SS02	0.05	<0.2	<1	<0.5	<3	<25	<50	<100	<100	<250

Statistical Summary

Number of Results	1	1	1	1	1	1	1	1	1
Number of Detects	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<1	<0.5	<3	<25	<50	<100	<100	<250
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.2	<1	<0.5	<3	<25	<50	<100	<100	<250
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	-	-	-	-	-	-	-	-	-
Median Concentration	0.1	0.5	0.25	1.5	12.5	25	50	50	125
Standard Deviation	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0

* Guideline acceptance criteria has been quartered as four primary samples were combined per composite

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Table 2. Soil RPD Results

Field Duplicates (soil) Filter: ALL			SDG	71994 & ES1209601					71994 & ES1209601					73412 & ES1212293				
			Field_ID	Comp 26	Intra Dup 1	RPD	INTER DUP 1	RPD	Comp 49	Intra Dup 2	RPD	INTER DUP 2	RPD	Comp 53	Intra Dup 3	RPD	INTER DUP3	RPD
Chem_Group	**ChemName**	**Units**	**EQL**															
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0		
																	<0.05	0
Inorganics	Moisture	%	0.1 (Primary): 1 (Interlab)	18.0	19.0	5	18.1	1	16.0	16.0	0	17.0	6	17.0	17.0	0		
																	17.3	2
Lead	Lead	mg/kg	1 (Primary): 5 (Interlab)	20.0	16.0	22	21.0	5	22.0	20.0	10	22.0	0	23.0	19.0	19	**32.0**	**33**
Metals	Arsenic	mg/kg	4 (Primary): 5 (Interlab)	11.0	11.0	0	19.0	53	6.0	7.0	15	10.0	50	8.0	7.0	13	12.0	40
	Cadmium	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<1.0	0	<0.5	<0.5	0	<1.0	0	<0.5	<0.5	0	<1.0	0
	Chromium (III+VI)	mg/kg	1 (Primary): 2 (Interlab)	23.0	23.0	0	24.0	4	21.0	23.0	9	22.0	5	17.0	16.0	6	23.0	30
	Copper	mg/kg	1 (Primary): 5 (Interlab)	23.0	20.0	14	22.0	4	**30.0**	**54.0**	**57**	**43.0**	**36**	27.0	22.0	20	**37.0**	**31**
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	0	<0.1	<0.1	0	<0.1	0	<0.1	<0.1	0	<0.1	0
	Nickel	mg/kg	1 (Primary): 2 (Interlab)	9.0	9.0	0	9.0	0	11.0	11.0	0	10.0	10	10.0	6.0	50	12.0	18
	Zinc	mg/kg	1 (Primary): 5 (Interlab)	**48.0**	**35.0**	**31**	44.0	9	**40.0**	**63.0**	**45**	**59.0**	**38**	**43.0**	**31.0**	**32**	**63.0**	**38**
Organochlorine Pesticides	4,4-DDE	mg/kg	0.1 (Primary): 0.05 (Interlab)	0.2	<0.1	67	0.1	67	0.5	1.0	67	**0.86**	**53**	<0.1	0.1	0	**0.53**	**137**
	a-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Aldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	b-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Chlordane (cis)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Chlordane (trans)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	d-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	DDD	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	DDT	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.2	0	<0.1	<0.1	0	<0.2	0	<0.1	<0.1	0	<0.2	0
	Dieldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Endosulfan I	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Endosulfan II	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Endosulfan sulphate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Endrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Endrin aldehyde	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	g-BHC (Lindane)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Heptachlor	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Heptachlor epoxide	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Methoxychlor	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.2	0	<0.1	<0.1	0	<0.2	0	<0.1	<0.1	0	<0.2	0
Organophosphorous Pesticides	Bromophos-ethyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Chlorpyrifos	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Diazinon	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Dimethoate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Ethion	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
	Fenitrothion	mg/kg	0.1	<0.1	<0.1	0			<0.1	<0.1	0			<0.1	<0.1	0		
	Ronnel	mg/kg	0.1	<0.1	<0.1	0			<0.1	<0.1	0			<0.1	<0.1	0		

*RPDs have only been considered where a concentration is greater than 0 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (0-5 x EQL); 75 (5-10 x EQL); 30 (> 10 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix F – Auswide Geotechnical Report

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7th June, 2012

WSP Environmental Pty Ltd
Level 1/41 McLaren Street
NORTH SYDNEY NSW 2059

Our Reference **AW26406**

Site Address

Crn of Horsley Drive & Cowpasture Road

Wetherill Park

Commission

Stage 2 Geotechnical Investigation

TABLE OF CONTENTS

Executive Summary

This site is typical of a large area of the South-Western suburbs of Sydney, much of which has been converted to residential communities with associated commercial and recreational infrastructure.

This report is a snapshot of the delineated area, and this like other similar sized areas (anywhere), from a Geotechnical point of view has dominating issues, which need to be addressed as the project moves forward.

The issues on this site are different from a lot of other projects as the proposal includes a significant site cut and deep filling which at present consists of a maximum cut of 12metres and a fill depth of almost 12metres.

The major issues on this site are;

- Protecting the existing infrastructure on the northern and western boundaries in both the short term and long term.
- The excavation of the rock, where the site cut exceeds 6metres in depth.
- Quantifying the long term performance of the deep fill proposed.

1. Introduction

1.1. Background

1.1.1. Auswide Geotechnical were commissioned by WSP Environmental Pty Ltd to provide a Stage 2 Geotechnical report in accordance with the Geotechnical Brief prepared by "Costin Roe Consulting" in a letter dated 23rd March 2012.

1.2. Objectives

1.2.1. To identify the geotechnical conditions (excluding environmental considerations, covered by WSP Environmental), which may be encountered during and after development, including but not limited to;

- Confirmation of soil profile and depth to rock.
- Provide relevant design parameters for pavements and retaining walls.
- Give guidance on the excavatability of the onsite strata and bedrock.

1.3. Scope of Works

1.3.1. Where access was available, the site was inspected at ground level and sampled as outlined below.

1.3.2. Where access was not available the site was viewed from as close as possible.

1.3.3. Supplied aerial photos were studied.

1.3.4. These images were supplemented with various Google Earth images.

1.3.5. Twenty-Seven (27) boreholes (nominally 100mm in diameter), were augered with our 4WD mounted drill rig in the approximate positions (accurate to 5m using hand-held GPS), shown on the attached site sketch in Section 11 of this report (GBH01-GBH27).

1.3.6. Two(2) boreholes (nominally 100mm in diameter), were diamond cored with a Hydrapower Scout in the approximate positions (accurate to 5m using hand-held GPS), shown on the attached site sketch in Section 11 of this report (GBH28-GBH29).

1.3.7. Numerous disturbed samples were collected and hand classified.

1.3.8. Five (5) tube samples were retrieved (nominally 50mm in diameter) and sent to a laboratory for testing for their Shrink/Swell (Iss) parameters.

1.3.9. Three (3) disturbed bulk samples were retrieved and sent to the NATA certified laboratory at SGS Australia Pty Ltd and tested for their 4-Day Soaked CBR Parameters.

1.3.10. Five (5) disturbed samples were retrieved and returned to the NATA certified laboratory at SGS Australia Pty Ltd and tested for their Emerson Class.

1.3.11. Fourteen (14) core samples were retrieved and returned to the NATA certified laboratory at SGS Australia Pty Ltd and tested for their Point Load Strength.

1.3.12. Two (2) core samples were retrieved and returned to the NATA certified laboratory at SGS Australia Pty Ltd and tested for their Uniaxial Compressive Strength (UCS).

1.3.13. Preparation of this geotechnical report

1.4. Report Limitations

1.4.1. This geotechnical report does not include any reference to the AGS 2007 Land Risk Management Guidelines.

1.4.2. The report is in general accordance with AS2870-2011.

1.4.3. The statements presented in this report are intended to advise our client on the realistic expectations of this report and to present our client with recommendations on how to minimise risk associated with ground works for this project.

1.4.4. These appendices and other cautioning sections are not intended to reduce our level of responsibility but rather to ensure that all parties, who may rely on this report are aware of their responsibilities each assumes in so doing.

1.4.5. As geotechnical consultants on this project, our responsibilities are restricted to determining the parameters of the strata encountered (within the limitations of our commission and budget), so that this project can proceed to the next phase.

1.4.6. This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work undertaken for the client. It is a report based on the observations of the site at the time of the testing however these conditions may change with time.

1.4.7. This report does not provide an absolute assessment of the geotechnical status of the site, and is limited to the specific scope of work. The extent of sampling of soil and subsequent analysis has been limited and may not identify all variations that occur in other areas and/or unexpected locations.

1.4.8. The absence of any identified hazards in the subject area should not be interpreted as a guarantee that such hazards do not exist on site.

1.4.9. All conclusions regarding the area investigated are the professional opinions of Auswide Geotechnical, subject to the qualifications made above. While normal assessments of data reliability have been made Auswide Geotechnical assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of Auswide Geotechnical, or developments resulting from situations outside the scope of this project.

2. Background

2.1. Site Location

2.1.1. Our test area covered an area bordered by Cowpasture Road to the east and Horsely Drive to the south. To the west the site is bordered by a Sydney water canal and to the north by an existing easement and the parcel of land is just over 22 hectares.

2.1.2. Section 10 of this report indicates borehole locations and the limits of the study area.

NOTE: Due to extensive areas of the northern and north-western sections of the study area being inaccessible for our 4WD, this area remains untested and further guidance is offered below.

2.2. Previous Investigations;

2.2.1. At the time of writing we had been made aware and had received various reports completed by various consultants which were;

- Preliminary Environmental Site Assessment (Ref No E25371kGrpt, dated December 2011), by Environmental Investigation Services (EIS). (Only borelogs received)
- Preliminary Geotechnical Investigation (Ref No 25371ZRrpt, dated December 2011), by Jeffery and Katauskas Pty Ltd.

2.3. Site Description

2.3.1. A comprehensive site description has been completed by others however the following site features exist and have been noted as part of this investigation;

- Existing residential dwellings and associated infrastructure exist (fences, sheds etc).
- Small Dams exist in the north-western corner of the study area.
- Vegetation consists of dense to very dense high grass, scattered trees and wild blackberry bushes within the un-habitated areas to sparse grass and trees/shrubs in the currently habitated residential areas.
- We are aware that a previously existing dam had been backfilled, which was located in the north-western corner of the study area.

2.4. Topography

2.4.1. The central area is generally high (RL 84.0m) and the northern and south-eastern areas being low (RL 62.0m). (Approximate only please refer survey).

2.5. Geology

2.5.1. The Penrith 1:100,000 geological sheet indicates that the site is within the Bringelly Shale formation which consists mainly of shales and fine grained sandstone.

3. Data Quality Objectives

3.1. Data Objectives

3.1.1. Geotechnical Risks

- Shrink/Swell Potential
- Dispersion & Erosion Potential
- Rock Strength Parameters
- Pavement and Subgrade strength
- Excavatibility of the rock

3.1.2. Assessment Issues

- Consider if potential soil performance is within reasonable acceptable limits.
- Consider if soil performances will adversely affect the long-term performance of the new development.
- Consider the use of onsite material for roadways, allotment fill etc.
- Consider the type and size of machinery needed to complete bulk earthworks

4. Field Work

4.1. Site Visits

4.1.1. The field work and drilling was carried out within the week starting 23rd April 2012.

4.2. Investigation Boreholes

4.2.1. Our auger boreholes were excavated to depths of between 1.8 metres and 5.0 metres across the site.

4.2.2. In general the boreholes were drilled to refusal in order to determine the natural/rock interface.

4.2.3. The borehole logs are in Section 13 of this report.

4.3. Diamond Coring

4.3.1. These were excavated at depths of between 8.0metres and 12.0metres at surface RL's of between RL 74.0 and RL 80.0 respectively.

4.4. Soil Sampling

4.4.1. These were a combination of virtually undisturbed tube samples, rock cores and bagged disturbed samples, (reflecting the proposed test method).

5. Findings

5.1. Profile

5.1.1. From our auger testing, we encountered the following strata;

Topsoil – Clayey Silt/Silty Clay ranging from 0.1m to 0.4m thick.

Natural Clays – Silty Clay with Medium to High Shrink/Swell potential ranging in depth from 0.2m to 4.0m. The Silty Clays were assessed to be stiff to very stiff with undrained shear strengths' ranging from 100kPa to 200kPa.

Extremely Weathered Bedrock – XW-Siltstone with clay banding or XW-Shale was encountered at all test sites ranging in depth from 0.8m to 4.0m.

Distinctly Weathered Bedrock – Our Auger drilling refused on DW-Rock at depths ranging from 1.8m to 5.0m+.

5.1.2. From our Diamond Core testing, we encountered the following strata;

Topsoil – Clayey Silt/Silty Clay ranging from 0.1m to 0.4m thick.

Natural Clays – Silty Clay with Medium to High Shrink/Swell potential ranging in depth from 0.2m to 1.8m. The Silty Clays were assessed to be stiff to very stiff with undrained shear strengths' ranging from 100kPa to 200kPa.

Extremely Weathered Bedrock – XW-Siltstone with clay banding or XW-Sandstone was encountered at all test sites ranging in depth from 1.8m to 3.0m.

Distinctly Weathered Bedrock – DW-Sandstone ranging in depth from 3.0m to 7.9m.

Extremely/Distinctly Weathered Bedrock – DW-Siltstone ranging in depth from 4.9m to 12m.

5.2. Filled Ground

5.2.1. During the drilling, we did not encounter any filled ground.

5.2.2. We are aware that fill may exist in the north-western section of the site where the previous existing dam was backfilled. As access to this area was not possible, further testing (once access is made available), in this area may be required.

5.2.3. Topsoil was encountered across the site and ranged between 0.1m and 0.4m thick.

5.2.4. We do expect filled ground to exist locally, particularly where existing structures have been constructed on cut/fill pads and in the walls of retaining structures such as dam walls etc.

5.2.5. When the existing dwellings, outbuildings and associated infrastructure are removed there will be a disturbance and hence filled ground created.

5.2.6. We do not know how many or where the septic tanks or inground swimming pools are located. These will also create “filled” ground when removed.

5.2.7. Localised areas of filled ground may exist from previous farming, tree clearing etc may have occurred.

5.3. The Water Table

5.3.1. We did not encounter the water table during our testing programme, and this may have been a combination of the following factors;

- Our test sites were only open for a limited time period, and this time period may have been too short for a water table to manifest itself.
- The majority of our test sites were only 3000mm deep, and if the water table was at a deeper level, we would not have encountered it.

5.3.2. In our deeper diamond cored holes no water table was encountered, however this does not mean that a perched water table may form where a permeable layer overlies a less permeable layer particularly after heavy rains or wet periods. This may occur were the old gully/creek is located.

NOTE: It is our understanding that other consultants are installing monitoring wells, so if a water table does exist, it will be recorded and monitored by others.

5.4. The Allowable Bearing Pressure of the Soil

5.4.1. The following allowable bearing pressure are available in the natural undisturbed soil profile;

100kPa – At all levels into the natural undisturbed soil profile.

250kPa – 500mm and deeper into the natural clay based strata.

400kPa – 500mm into the natural XW-Rock with clay lenses.

750kPa – At a 500mm socket below our auger refusal.

NOTE: Higher bearing pressures are available in the DW-Rock and deeper, but they are not required for this part of the project. Pre-construction Geotechnical Investigations undertaken prior to the building of individual structures will identify and quantify these higher values if needed during the design and construct stage. This higher bearing rock may be at an excessive depth (see section 5.5.3).

5.5. The Underlying Bedrock

5.5.1. As stated above on the Penrith 1:100,000 geological sheet, the site plots within the Bringelly Shale formation which consists mainly of shales and fine grained sandstone.

5.5.2. Rock was encountered as follows during our auger testing;

TS No.	XW-Rock with clay lenses	XW-Rock	Refusal on Rock
1	1400-1900mm	1900-2200mm	2200mm
2	1800-2400mm	2400-2700mm	2700mm
3	1500-2100mm	2100-2400mm	2400mm
4	NE	1800-2300mm	2300mm
5	1700-2100mm	2100-2400mm	2400mm
6	1800-2200mm	2200-2600mm	2600mm
7	800-1600mm	1600-2300mm	2300mm
8	1500-1900mm	1900-2200mm	2200mm
9	NE	1300-1800mm	1800mm
10	NE	2200-2700mm	2700mm
11	1600-2000mm	2000-2400mm	2400mm
12	NE	2300-4000mm	4000mm
13	1900-2400mm	2400-2700mm	2700mm
14	1800-2200mm	2200-2600mm	2600mm
15	NE	1300-2000mm	2000mm
16	NE	2000-2600mm	2600mm
17	NE	1700-2400mm	2400mm
18	1500-1900mm	1900-2300mm	2300mm
19	NE	1700-2300mm	2300mm
20	1600-2000mm	2000-2700mm	2700mm
21	3300-3700mm	3700-4500mm	4500mm
22	1300-1800mm	1800-2300mm	2300mm
23	1400-1800mm	1800-2300mm	2300mm
24	1600-2000mm	2000-2500mm	2500mm
25	4000-4500mm	4500-5000mm	NE
26	900-1300mm	1300-1800mm	1800mm
27	NE	2200-2700mm	2700mm

5.5.3. Rock was encountered as follows during our Diamond Core testing;

TS No.	DW-Sandstone	XW-Siltstone	DW-Siltstone
28	3000-4900mm	4900-7900mm	7900-12,000mm
29	3000-5900mm	5900-8000mm	NE

5.6. Laboratory Results

5.6.1. Point Load Strength Index

TS No.	Depth	Strata	$Is_{(50)}$ Diametral	$Is_{(50)}$ Axial
28	3700-3900mm	Sandstone	1.69MPa	2.72MPa
28	4600-4750mm	Sandstone	0.20MPa	0.77MPa
28	5600-5750mm	Siltstone	0.23MPa	0.27MPa
28	6900-7000mm	Siltstone	0.03MPa	0.15MPa
28	7050-7150mm	Siltstone	0.07MPa	0.22MPa
28	8000-8150mm	Siltstone	0.36MPa	0.73MPa
28	9650-9750mm	Siltstone	0.47MPa	0.47MPa
28	10,800-10,950mm	Siltstone	0.29MPa	0.39MPa
28	11,000-11,200mm	Siltstone	0.27MPa	0.40MPa
29	3700-3900mm	Sandstone	1.26MPa	1.52MPa
29	4850-5000mm	Sandstone	0.55MPa	0.89MPa
29	5000-5100mm	Sandstone	1.01MPa	1.20MPa
29	6750-6900mm	Siltstone	0.22MPa	0.34MPa
29	7200-7350mm	Siltstone	0.40MPa	0.31MPa

5.6.2. Uniaxial Compressive Strength

TS No.	Depth	Strata	U.C.S	Dry Density	Moisture Content
28	9400-9600mm	Siltstone	7.2MPa	2.39t/m^3	4.6%
29	3450-3700mm	Sandstone	25.7MPa	2.37t/m^3	4.9%

5.6.3. Shrink/Swell (Iss) results;

TS No	Depth(mm)	Shrink %	Swell %	Initial Moisture %	Iss	Wet Density
3	500-800mm	5.1%	0.4%	21.1%	2.9%	2.03t/m^3
11	600-800mm	7.3%	0.4%	27.9%	4.2%	1.94t/m^3
15	700-900mm	5.0%	1.9%	23.9%	3.3%	2.05t/m^3
18	400-800mm	5.6%	0.6%	25.5%	3.3%	1.97t/m^3
19	700-1000mm	4.3%	0.5%	21.6%	2.5%	2.07t/m^3
				Average	**3.24%**	

5.6.4. Emerson Crumb Test

TS No.	Depth	Strata	Emerson Class
4	700-800mm	Silty Clay	5
8	500-600mm	Silty Clay	5
18	600-700mm	Silty Clay	6
21	1200-1300mm	Silty Clay	6
26	500-600mm	Silty Clay	5

5.6.5. 4-Day Soaked CBR Results

TS No.	Depth	Strata	CBR @ 2.5mm	CBR @ 5mm
2	500-800mm	Silty Clay	3.0%	2.5%
16	400-700mm	Silty Clay	1.0%	1.0%
25	300-700mm	Silty Clay	1.0%	1.0%

6. Comments and Recommendations

6.1. Excavation[1]

6.1.1. We have been provided with a Preliminary Bulk Earthworks Plan, prepared by Costin Roe Consulting (Drawing No Co11492.00-PC07), dated 25/10/11, which outlines the proposed Bulk Earthworks Level (BEL) for each lot.

6.1.2. The following table shows the approximate cut/fill depths for each lot;

Lot No	Final BEL	Max Cut	Max Fill
1	BEL 69m	5m	5m
2	BEL 72m	10m	2m
3	BEL 75m	9m	5m
4	BEL 80m	4m	2m
5	BEL 77m	-	7m
6	BEL 73m	3m	7m
7	BEL 69m	-	7m
8	BEL 72m	8m	4m
9	BEL 75m	9m	1m
10	BEL 73m	7m	11m
11	BEL 72m	12m	4m

6.1.3. With respect to the excavatability of the rock we offer the following broad guidelines;

Method	Strata	RQD%*
Easy Digging	Soil/XW-Rock	<10%
Ripping	XW-Rock/Dw-Rock	10% to 50%
Rock Hammer	DW-Rock	50% to 80%
Blasting**	DW-Rock	>80%

*Please refer to our rock core sections for BH 28 and 29.

**With a rock-hammer weighing more than 7tonnes, on at least a 30tonne excavator, blasting can be avoided however excavation progress will be very slow.

[1] *All Excavations should be completed in reference to the Code of Practice 'Excavation Work', Cat No 312 issued by WorkCover NSW (Dated March 2000).*

6.2. Earthworks & Compaction

6.2.1. These need to be written by the designer of the earthworks specifically for the purpose of the project, and should include the following critical points;

- The surface is to be scraped clear of any organic material and debris.
- Any surface where fill is to be placed which is steeper than 10%, must have a series of terraces created, so as the fill is placed on a horizontal surface, not a sloping surface.
- Prior to any fill being placed, the prepared surface must be proof rolled under geotechnical supervision to ensure that there are no soft spots.
- All topsoil and debris is to be discarded, while the clay base soil is to be stockpiled and then blended with the weathered rock at a ratio of 1 part clay to 3 parts rock.
- No blended material is to be placed within 2metres of finished ground level.
- No blended material is to be placed at a depth greater than 5metres below finished ground level.
- All fill is to be placed at ± 2% optimum moisture content.
- There is no need to carry out testing on the fill for Atterburg Limits or similar tests as only the actual density is important.
- The required minimum density is to be 98% Standard Compaction or equivalent and the maximum density ratio shall not exceed 100% Standard Compaction.
- Rocks up to 500mm in diameter can be included in the fill, providing they will break down to a size less than 200mm under the compaction equipment.
- Rocks must not have dimensions in any direction exceeding any other direction by more than 2. i.e. No elongated or platey rocks allowed, these must be broken down.
- Layer thicknesses must comply to the limits in AS3798-2007 for the compaction process.

- The onsite testing regime must be sufficient for the final outcome to be certified as Level 1 according to AS3798-2007.
- The earthworks contractor must be made aware of the importance of good site drainage, and given guidance as to how to establish it at the start of the project, how to maintain it during the onsite works and how to ensure that at virtual completion, the site drainage is adequate.
- On a project of this scale, we also recommend that up to 5% of all tests can be outside the test criteria, without actually being deemed a failure, providing that the values do not vary by more than 1%. i.e. If 95% of the compaction test are in the range of 98-100% Standard Compaction or equivalent, the providing the other 5% are in the range of 97-101%, the works shall be deemed to comply to the specification.

6.3. Erosion and Soil Management

6.3.1. From a geotechnical point of view, this is as simple as establishing good site drainage as part of the earthworks as outlined in 6.2 (above), and ensuring silt fences and silt settling ponds etc, are all in place so that silt cannot escape into nearby waterways. If the Environmental testing finds anything adverse, then the requirements take precedent, and must be incorporated into this project.

6.4. Footing Types

6.4.1. This is a function of both the type of structure being built, as well as the experience of the design engineer, and at the time of writing we do not know who the design engineer is or what type of structures are proposed.

6.4.2. As part of any building contract, a site specific geotechnical report will be required, however we can pre-empt some of these findings as follows.

6.4.3. Natural Strata;

- Allowable bearing pressures of between 100kPa (soil), and in excess of 1500kPa (DW-Rock), will exist across the site.
- According to AS2870-2011, the shrink/swell potential of the natural strata will be as follows for footings founded at surface level;

Strata	AS2870-2011 Class
Clay (0-1000mm)	M
Clay (1000mm+)	H1
XW-Rock	S to M
DW-Rock	A

6.4.4. Filled Ground;

Assuming that the fill is certified at Level 1 according to AS3798-2007, at between 98% and 100% Standard Compaction, the following guidelines are available for high level footings, which also assumes that the blended material is in a band between 3000mm and 5000mm below ground level.

- An allowable bearing pressure of 150kPa is available.
- The differential ground movement at the surface due to the changes in soil moisture will be less than 5mm.

  NOTE: Regardless to whether any proposed footing is in a natural or filled area, if the strata, at shallow depths, is insufficient to support the load, then deep piled footings will be required. Unfortunately our commission did not extend to determining the set depths of a deep piled system.
- Although difficult to quantify, the differential consolidations of the fill under its own weight after compaction is approximately equal to 1% of the maximum fill depth under any building footprint, which does not exceed 40metres in length. i.e. Where a 30metre long building is to be sited on 5000mm of fill, the differential ground movement will be 1% of 5000mm (50mm), plus the 5mm of the ys, which totals 55mm.

  NOTE: This differential movement figure is equivalent to a ys except that it will always be a settlement.

6.5. Temporary and Permanent Batters

6.5.1. For natural clay the following batters maybe used;

Temporary : 60°

Permanent : 45°

6.5.2. For the natural rock, the following batter angles apply;

Rock Type	Temporary	Permanent
XW-Rock	70-80°	60°
DW-Rock*	90°	80-90°

*The stability of a rock face is also a function of the lineations or lines of weakness in it. Although we have cored the rock at two(2) locations, these cores are only a small snapshot of the rock. Therefore, after each lift (and lifts should not exceed 2500mm in depth), if any potential adverse lineation is noted, work must cease until a geotechnical inspection can be arranged for further advise.

6.5.3. For filled ground;

The safe batter angles for filled ground placed and certified as outlined above, is 45° adopted for a temporary angle and 30° for a permanent angle.

NOTE: When dealing with batters in soil, whether filled or natural, if water is allowed to cascade over them, pond near the top or the toe, then they will fail, and they will fail at even shallower angles then recommended above, so good site drainage is essential for the stability of the batters.

6.6. Retaining Structures

6.6.1. These need to be engineer designed to suit the required purpose, which may be estate walls or site specific walls.

6.6.2. The allowable bearing pressure for high level footings can be found elsewhere in this report.

6.6.3. The actual design of the wall will be a function of what strata it is retaining, and in summary, the following parameters are applicable;

Strata	∅	Ko	Ka	Kp
Natural Clay	18°	0.69	0.53	1.89
Natural XW-Rock	40°	0.36	0.22	4.60
Natural DW-Rock	60°	0.13	0.07	13.93
Blended Fill	20°	0.66	0.49	2.04
Rocky Fill	35°	0.43	0.27	3.69

6.6.4. Just like batters, retaining walls will fail if the nearby surrounds are poorly drained, and if behind wall drainage is inadequate or fails, wall failure will follow.

6.6.5. Whilst we favour gravity retaining walls, mainly because of their in built flexibility, and free draining characteristics, we are aware that many peers prefer masonry walls. If masonry walls are built, then the relevant guidelines by the Cement, Concrete and Aggregate Associations must be consulted to ensure that the masonry walls are appropriately articulated.

6.7. Adjacent Infrastructure

6.7.1. The adjacent infrastructure and in particular the water canal and the power lines must be protected in both the long term and the short term.

6.7.2. From the drawings we have seen, we believe that this construction proposal will not adversely impact on this nearby infrastructure, however to make 100% certain of this, we must see or do the following;

- See typical cross sections showing the levels of the proposed finished earthworks to this infrastructure.
- Carry out the further testing in the northern section (after the vegetation is cleared and safe access is available).

6.8. Further Geotechnical Investigation

6.8.1. We need to complete the drilling in the northern section, once access becomes available and this may incur an additional fee.

6.8.2. Because of the broad brush nature of this report, prior to any structure being built on any site, a site specific Geotechnical Investigation must be carried out, and this report must be tailored to suit, the construction proposal proposed.

6.9. Road Construction

6.9.1. The 4-Day Soaked CBR values range from 1% to 3%, which is not only too wide of spread for a “one size fits all” pavement design, but is at the lower end of the CBR scale, which will translate into “expensive” pavements.

6.9.2. Because of the range of CBR values to ensure that the appropriate pavement is placed on the appropriate soil, and to contain costs, as this project proceeds we strongly advise that further CBR testing be commissioned in specific areas as required as part of the roadway will be founded on bedrock (east/west linkage), where as other parts of the roadway (north/south linkage), will be constructed on fill or natural clay based strata, this testing cannot be carried out until after the cut/fill estate works are completed, and the spacing should not exceed 20metres from location to location.

6.10. Removal of Existing Structures

6.10.1. The removal of the existing structures needs to be planned and although not in our area of expertise an inventory of which structures contain asbestos and other building materials now known as hazardous and those which don't.

6.10.2. Where the removal of existing dwellings only disturbs the strata to depths shallower than 500mm, providing all rubble etc, is removed, these areas will only require proof rolling under engineer supervision to restore them as "fit for purpose" but there will be special cases. (Proof rolling guidelines can be found in AS3798-2007), as outlined in Section 6.2 of this report.

6.10.3. Where existing developments have;

- Existing cuts deeper than 500mm
- Existing fill deeper than 500mm
- Existing cellars more than 500mm below existing ground level
- Existing inground tanks of any description (including petrochemical storage).
- Existing in-ground swimming pools

Each case will need to be recorded, and site-specific advice sought. Each situation will need to be remediated in accordance with appropriate acceptable protocols, and the end product will need to be a compacted and certified backfill, contoured to suit adjoining ground level.

NOTE: The already backfilled dam on this site is of concern to us. If documentation certifying the adequacy of the earthworks cannot be sourced, then the backfill will have to be removed and recompacted as outlined in section 6.2 of this report.

Auswide Geotechnical

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7. References

7.1. The following papers, reports or books have been consulted in preparing this report:

- AS 2870-2011 "Residential Slabs & Footings" by Standards Australia
- AS2870-1996 Supplement 1-1996 “Residential Slabs and Footings-Construction-Commentary, (Supplement to AS2870-1996).
- AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments" by Standards Australia.
- Paul Walsh & Don Cameron “The Design of Residential Slabs and Footings” Standards Australia 1997
- CSIRO BTF18
- “Landslide Risk Management Concepts and Guidelines” AGS 2000

We believe these are the most up to date publications available. Should other publications not listed are brought to our attention, then we reserve the right to modify this report if they contain information, which conflicts with this report.

8. Rock Classifications

7.3.2. ROCK WEATHERING CLASSIFICATION[1]

Term	Symbol	Definition
Residual soil	RS	Soil developed on extremely weathered rock; the mass structure and substance fabric are no longer evident; there is a large change in volume but the soil has not been significantly transported.
Extremely weathered rock	XW	Rock is weathered to such an extent that it has 'soil' properties, ie it either disintegrates or can be remoulded, in water.
Distinctly weathered rock	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Slightly weathered rock	SW	Rock is slightly discoloured but shows little or no change of strength from fresh rock.
Fresh rock	FR	Rock shows no sign of decomposition or staining.

1. From Table A9 of Australian Standard 1726-1993, by permission.

7.3.3. ROCK STRENGTH CLASSES[1]

Term	Letter symbol	Point load index (MPa) I_{s50}	Field guide to strength
Extremely low	EL	≤ 0.03	Easily remoulded by hand to a material with soil properties.
Very low	VL	> 0.03 ≤ 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 3 cm thick can be broken by finger pressure.
Low	L	>0.1 ≤ 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150 mm long by 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium	M	>0.3 ≤ 1.0	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.
High	H	>1 ≤ 3	A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very high	VH	>3 ≤ 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely high	EH	>10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Note that although relationships between Unconfined Compression Strength (UCS) and Point Load Index (PLI) exist, they do vary with rock types and the degree of weathering. A ratio of UCS/PLI of 24 has been used, but much lower ratios (as low as ten) can occur.

1. From Table A8 of Australian Standard 1726-1993, by permission.

9. Site Plan and Borehole Locations

10. Laboratory Testing

10.1. Shrink/Swell Testing

SHRINK/SWELL TEST RESULTS

Client:	AUSWIDE GEOTECHNICAL	**Lab. No:**	12119
Project:	AW26406	**Job No:**	AW26406
Location:	G.B.H. 3 @ 0.5m - 0.8m	**Date Sampled:**	24/04/2012
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	gy.mott.rd-br SILTY CLAY with minor gravels

Swell Test

Moisture Content - Initial %	21.1	Applied Load kPa	25
Moisture Content - Final %	25.4	Water Used:	Distilled

Shrink Test

Moisture Content %	21.9	Wet Density t/m3	2.03
Extent of Cracking of Specimen	Minor	Inert Inclusions %	+10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	5.1	**Swell %**	0.4	**Shrink/Swell Index %**	2.9

Prepared by: **Date:** 02/05/2012
Our Reference: 12119

SHRINK/SWELL TEST RESULTS

Client:	AUSWIDE GEOTECHNICAL	**Lab. No:**	12115
Project:	AW26406	**Job No:**	AW26406
Location:	G.B.H. 11 @ 0.6m - 0.8m	**Date Sampled:**	24/04/2012
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	or-br.mott.gy SILTY CLAY with trace small gravels

Swell Test

Moisture Content - Initial %	27.9	Applied Load kPa	25
Moisture Content - Final %	30.0	Water Used:	Distilled

Shrink Test

Moisture Content %	27.6	Wet Density t/m3	1.94
Extent of Cracking of Specimen	Minor	Inert Inclusions %	-10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	7.3	**Swell %**	0.4	**Shrink/Swell Index %**	4.2

Prepared by: **Date:** 02/05/2012
Our Reference: 12115

SHRINK/SWELL TEST RESULTS

Client:	AUSWIDE GEOTECHNICAL	**Lab. No:**	12121
Project:	AW26406	**Job No:**	AW26406
Location:	G.B.H. 15 @ 0.7m - 0.9m	**Date Sampled:**	24/04/2012
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	or-br.mott.gy SILTY CLAY with trace small gravels

Swell Test

Moisture Content - Initial %	23.9	Applied Load kPa	25
Moisture Content - Final %	26.4	Water Used:	Distilled

Shrink Test

Moisture Content %	22.4	Wet Density t/m3	2.05
Extent of Cracking of Specimen	Minor	Inert Inclusions %	-10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	5.0	**Swell %**	1.9	**Shrink/Swell Index %**	3.3

Prepared by: **Date:** 03/05/2012
Our Reference: 12121

SHRINK/SWELL TEST RESULTS

Client:	AUSWIDE GEOTECHNICAL	**Lab. No:**	12122
Project:	AW26406	**Job No:**	AW26406
Location:	G.B.H. 18 @ 0.4m - 0.8m	**Date Sampled:**	16/04/2012
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	gy.mott.rd-br SILTY CLAY with minor gravels

Swell Test

Moisture Content - Initial %	25.5	Applied Load kPa	25
Moisture Content - Final %	27.3	Water Used:	Distilled

Shrink Test

Moisture Content %	22.9	Wet Density t/m3	1.97
Extent of Cracking of Specimen	Moderate	Inert Inclusions %	-10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	5.6	**Swell %**	0.6	**Shrink/Swell Index %**	3.3

Prepared by: **Date:** 02/05/2012
Our Reference: 12122

SHRINK/SWELL TEST RESULTS

Client:	AUSWIDE GEOTECHNICAL	**Lab. No:**	12120
Project:	AW26406	**Job No:**	AW26406
Location:	G.B.H. 19 @ 0.7m - 1.0m	**Date Sampled:**	24/04/2012
Test Procedure:	AS1289 7.1.1/2.1.1	**Description:**	gy-br SILTY CLAY with gravels

Swell Test

Moisture Content - Initial %	21.6	Applied Load kPa	25
Moisture Content - Final %	23.3	Water Used:	Distilled

Shrink Test

Moisture Content %	20.0	Wet Density t/m3	2.07
Extent of Cracking of Specimen	Moderate	Inert Inclusions %	+10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	4.3	**Swell %**	0.5	**Shrink/Swell Index %**	2.5

Prepared by: 

Date: 02/05/2012

Our Reference: 12120

10.2. CBR Testing

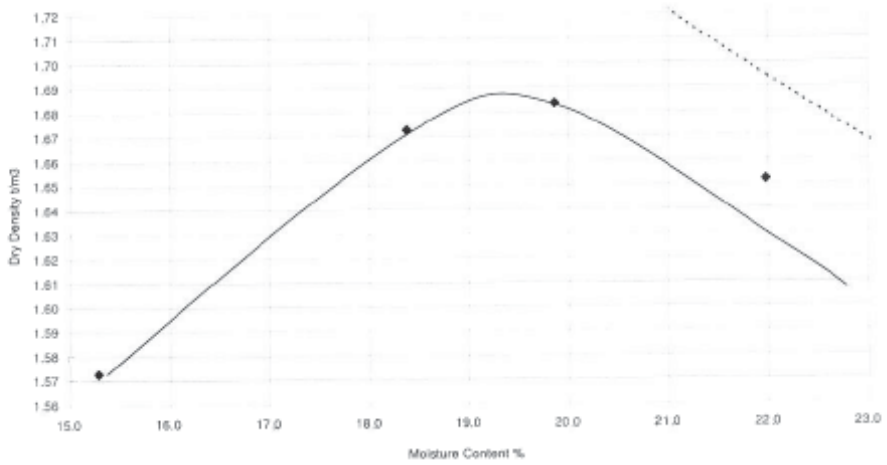
TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
PO Box 6432
Alexandria NSW 2015
Australia

DRY DENSITY/MOISTURE CONTENT RELATION

CLIENT: **Hart Geo**
11 Baldwin Street, Gordon NSW 2072
PROJECT: **AW26406**



Job Number:	198-019	
Laboratory Number:	71683	
Sample Source:	GBH2 0.5-0.8m	
Sample Description:	SILTY CLAY: orange-brown, medium plasticity, trace of fine to coarse sand.	
Maximum Dry Density:	1.69	t/m^3
Optimum Moisture Content:	19.5	%
Oversize Material:	19	mm
% Oversize:	0	%
Date Tested:	23.04.12	
Sampled By:	Client	
Compactive Effort:	Standard	
Test Method:	**AS 1289 5.1.1**	
Mould Type:	A	
Number of Layers:	3	
Blows per Layer:	25	
Mass of Rammer:	2.7	kg
Drop of Rammer:	300	mm
Zero Air Voids Line - Particle Density:	2.70	t/m^3
Comments:		

Approved Signatory: Chris Lloyd **Date:** 30.4.12

ilac-MRA Accreditation No. 2418

NATA

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PF-[AU]-[IND(MTE)]-(GEN)-RPT-622.VER1.09.02.2011 – Page 1 of 1

TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

CALIFORNIA BEARING RATIO

CLIENT: **Hart Geo**
11 Baldwin Street, Gordon NSW 2072
PROJECT: **AW26406**

Sample Source:	GBH2 0.5-0.8m	
Sample Description:	SILTY CLAY: orange-brown, medium plasticity, trace of fine to coarse sand.	
Job Number:	198-019	
Laboratory Number:	71683	
CBR Value @ 2.5mm	3.0	(%)
CBR Value @ 5.0mm	2.5	(%)
Sample Data		
Compaction Specification	95% of MDD at OMC	
Maximum Dry Density (MDD)	1.69	(t/m^3)
Optimum Moisture Content (OMC)	19.5	(%)
Mass of Surchages	4.5	(kg)
Number of Days Soaked	4	
Sample Preparation		
Dry Density - Before Soaking	1.61	(t/m^3)
Dry Density - After Soaking	1.57	(t/m^3)
Retained on 19mm Sieve	0% excluded	(%)
Moisture Content - Before Soaking	20.4	(%)
Laboratory Density Ratio	95.0	(%)
Laboratory Moisture Ratio	105.0	(%)
Moisture Content - After Soaking		
Top 30mm of Test Sample	30.0	(%)
Remainder of Test Sample	22.2	(%)
Swell After Soaking	2.4	(%)
Compactive Effort	Standard	
Number of Layers	3	
Blows per Layer	50	
Mass of Rammer	2.7	(kg)
Drop of Rammer	300	(mm)
Comments		
Date Tested:	30.4.12	

Tested in accordance with AS1289.6.1.1 Determination of the California Bearing Ratio of a soil Standard Laboratory Method for a remoulded specimen.

Approved Signatory: Chris Lloyd Date: 2.5.12

ilac-MRA NATA

This document is issued in accordance with NATA's accreditation requirements

Accreditation No. 2418

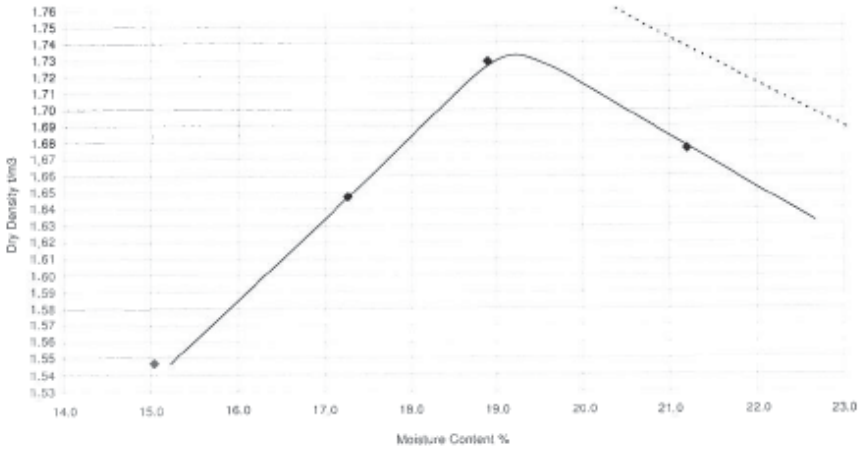
TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

DRY DENSITY/MOISTURE CONTENT RELATION

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406



Job Number:	198-019	
Laboratory Number:	71684	
Sample Source:	GBH16 0.4-0.7m	
Sample Description:	SILTY CLAY: orange-brown, medium plasticity, trace of fine to coarse sand.	
Maximum Dry Density:	1.73	t/m^3
Optimum Moisture Content:	19.0	%
Oversize Material:	19	mm
% Oversize:	0	%
Date Tested:	23.04.12	
Sampled By:	Client	
Compactive Effort:	Standard	
Test Method:	**AS 1289 5.1.1**	
Mould Type:	A	
Number of Layers:	3	
Blows per Layer:	25	
Mass of Rammer:	2.7	kg
Drop of Rammer:	300	mm
Zero Air Voids Line - Particle Density:	2.75	t/m^3
Comments:		

Approved Signatory: Chris Lloyd Date: 30.4.12

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TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
PO Box 8432
Alexandria NSW 2015
Australia

CALIFORNIA BEARING RATIO

CLIENT: **Hart Geo**
11 Baldwin Street, Gordon NSW 2072
PROJECT: **AW26406**

Sample Source:	GBH16 0.4-0.7m	
Sample Description:	SILTY CLAY: orange-brown, medium plasticity, trace of fine to coarse sand.	
Job Number:	198-019	
Laboratory Number:	71684	
CBR Value @ 2.5mm	1.0	(%)
CBR Value @ 5.0mm	1.0	(%)
Sample Data		
Compaction Specification	95% of MDD at OMC	
Maximum Dry Density (MDD)	1.73	(t/m^3)
Optimum Moisture Content (OMC)	19.0	(%)
Mass of Surchages	4.5	(kg)
Number of Days Soaked	4	
Sample Preparation		
Dry Density - Before Soaking	1.65	(t/m^3)
Dry Density - After Soaking	1.59	(t/m^3)
Retained on 19mm Sieve	0% excluded	(%)
Moisture Content - Before Soaking	18.1	(%)
Laboratory Density Ratio	96.0	(%)
Laboratory Moisture Ratio	95.0	(%)
Moisture Content - After Soaking		
Top 30mm of Test Sample	30.0	(%)
Remainder of Test Sample	20.9	(%)
Swell After Soaking	4.1	(%)
Compactive Effort	Standard	
Number of Layers	3	
Blows per Layer	50	
Mass of Rammer	2.7	(kg)
Drop of Rammer	300	(mm)
Comments		
Date Tested:	30.4.12	

Tested in accordance with AS1289.6.1.1 Determination of the California Bearing Ratio of a soil Standard Laboratory Method for a remoulded specimen.

Approved Signatory: Chris Lloyd **Date:** 2.5.12

ilac-MRA
Accreditation No. 2418

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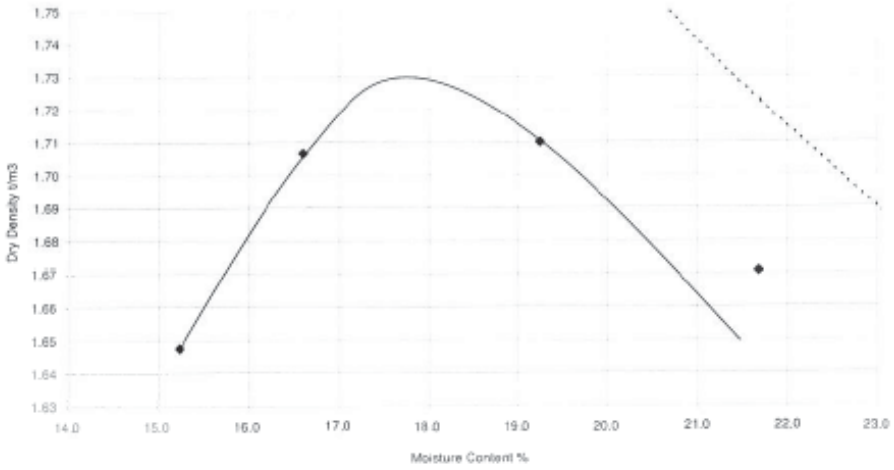
TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

DRY DENSITY/MOISTURE CONTENT RELATION

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406



Job Number:	198-019	
Laboratory Number:	71685	
Sample Source:	GBH25 0.3-0.7m	
Sample Description:	SILTY CLAY: red-brown with grey mottling, medium plasticity, trace of fine to coarse sand.	
Maximum Dry Density:	1.73	t/m^3
Optimum Moisture Content:	18.0	%
Oversize Material:	19	mm
% Oversize:	0	%
Date Tested:	23.04.12	
Sampled By:	Client	
Compactive Effort:	Standard	
Test Method:	**AS 1289 5.1.1**	
Mould Type:	A	
Number of Layers:	3	
Blows per Layer:	25	
Mass of Rammer:	2.7	kg
Drop of Rammer:	300	mm
Zero Air Voids Line - Particle Density:	2.75	t/m^3
Comments:		

Approved Signatory: Chris Lloyd **Date:** 30.4.12

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TEST CERTIFICATE

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Unit 15, 33 Maddox Street
PO Box 6432
Alexandria NSW 2015
Australia

CALIFORNIA BEARING RATIO

CLIENT: **Hart Geo**
11 Baldwin Street, Gordon NSW 2072

PROJECT: **AW26406**

Sample Source:	GBH25 0.3-0.7m	
Sample Description:	SILTY CLAY: red-brown with grey mottling, medium plasticity, trace of fine to coarse sand.	
Job Number:	198-019	
Laboratory Number:	71685	
CBR Value @ 2.5mm	1.0	(%)
CBR Value @ 5.0mm	1.0	(%)
Sample Data		
Compaction Specification	95% of MDD at OMC	
Maximum Dry Density (MDD)	1.73	(t/m^3)
Optimum Moisture Content (OMC)	18.0	(%)
Mass of Surchages	4.5	(kg)
Number of Days Soaked	4	
Sample Preparation		
Dry Density - Before Soaking	1.67	(t/m^3)
Dry Density - After Soaking	1.59	(t/m^3)
Retained on 19mm Sieve	0% excluded	(%)
Moisture Content - Before Soaking	17.2	(%)
Laboratory Density Ratio	96.0	(%)
Laboratory Moisture Ratio	96.0	(%)
Moisture Content - After Soaking		
Top 30mm of Test Sample	31.0	(%)
Remainder of Test Sample	19.9	(%)
Swell After Soaking	5.0	(%)
Compactive Effort	Standard	
Number of Layers	3	
Blows per Layer	50	
Mass of Rammer	2.7	(kg)
Drop of Rammer	300	(mm)
Comments		
Date Tested:	30.4.12	

Tested in accordance with AS1289.6.1.1 Determination of the California Bearing Ratio of a soil Standard Laboratory Method for a remoulded specimen.

Approved Signatory: Chris Lloyd **Date:** 2.5.12

ilac-MRA Accreditation No. 2418

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10.3. Emerson Class

TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

EMERSON CRUMB TEST

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406

Laboratory Number:	71686
Sample Source:	GBH4 (0.7-0.8m)
Sample Description:	SILTY CLAY: brown/ grey, high plasticity, trace of fine to coarse sand.

1. IMMERSION

Does not slake	→	Class 7 swells (Organic Soils)	
Slakes	X	Class 8 does not swell (Laterised)	

2. COMPLETE DISPERSION

Class 1 complete	
Class 2 partial	
No Dispersion	X

3. REMOULDING

Class 3 disperses	
Does not disperse	X

4. CARBONATE & GYPSUM (Acid Indicator)

Class 4 present	
Absent	X

5. VIGOROUS SHAKING

Class 5 disperses	X
Class 6 no dispersion	

EMERSION CLASS NO.: 5

Water used:	Distilled water at 20°C	Date Tested:	23.4.12
Tested By:	ME	Sampled By:	Client
Test Procedure: AS 1289 3.8.1		Job Number:	198-019

Approved Signatory: Chris Lloyd **Date:** 2.5.12

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TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 8432)
Alexandria NSW 2015
Australia

EMERSON CRUMB TEST

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406

Laboratory Number: 71687

Sample Source: GBH8 (0.5-0.6m)

Sample Description: SILTY CLAY: orange-brown, high plasticity, trace of fine to coarse sand.

1. IMMERSION

Does not slake →		Class 7 swells (Organic Soils)	
Slakes	X	Class 8 does not swell (Laterised)	

2. COMPLETE DISPERSION

Class 1 complete	
Class 2 partial	
No Dispersion	X

3. REMOULDING

Class 3 disperses	
Does not disperse	X

4. CARBONATE & GYPSUM (Acid Indicator)

Class 4 present	
Absent	X

5. VIGOROUS SHAKING

Class 5 disperses	X
Class 6 no dispersion	

EMERSION CLASS NO.: 5

Water used:	Distilled water at 20°C	Date Tested:	23.4.12
Tested By:	ME	Sampled By:	Client
Test Procedure:	AS 1289 3.8.1	Job Number:	198-019

Approved Signatory: Chris Lloyd **Date:** 2.5.12

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TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
PO Box 6432
Alexandria NSW 2015
Australia

EMERSON CRUMB TEST

CLIENT: **Hart Geo**
11 Baldwin Street, Gordon NSW 2072
PROJECT: **AW26406**

Laboratory Number:	71688
Sample Source:	GBH18 (0.6-0.7m)
Sample Description:	SILTY CLAY: orange-brown/ grey, high plasticity, trace of fine to coarse sand.

1. IMMERSION

Does not slake	→	Class 7 swells (Organic Soils)	
Slakes	X	Class 8 does not swell (Laterised)	

2. COMPLETE DISPERSION

Class 1 complete	
Class 2 partial	
No Dispersion	X

3. REMOULDING

Class 3 disperses	
Does not disperse	X

4. CARBONATE & GYPSUM (Acid Indicator)

Class 4 present	
Absent	X

5. VIGOROUS SHAKING

Class 5 disperses	
Class 6 no dispersion	X

EMERSION CLASS NO.: **6**

Water used:	Distilled water at 20°C	Date Tested:	23.4.12
Tested By:	ME	Sampled By:	Client
Test Procedure:	AS 1289 3.8.1	Job Number:	198-019

Approved Signatory: Chris Lloyd **Date:** 2.5.12

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TEST CERTIFICATE

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SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

EMERSON CRUMB TEST

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406

Laboratory Number: 71689

Sample Source: GBH21 (1.2-1.3m)

Sample Description: SILTY CLAY: grey/ red-brown, high plasticity, trace of fine to coarse sand.

1. IMMERSION

Does not slake	→	Class 7 swells (Organic Soils)	
Slakes	X	Class 8 does not swell (Laterised)	

2. COMPLETE DISPERSION

Class 1 complete	
Class 2 partial	
No Dispersion	X

3. REMOULDING

Class 3 disperses	
Does not disperse	X

4. CARBONATE & GYPSUM (Acid Indicator)

Class 4 present	
Absent	X

5. VIGOROUS SHAKING

Class 5 disperses	
Class 6 no dispersion	X

EMERSION CLASS NO.: 6

Water used:	Distilled water at 20°C	Date Tested:	23.4.12
Tested By:	ME	Sampled By:	Client
Test Procedure:	AS 1289 3.8.1	Job Number:	198-019

Approved Signatory: Chris Lloyd **Date:** 25.12

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TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

EMERSON CRUMB TEST

CLIENT: Hart Geo
11 Baldwin Street, Gordon NSW 2072
PROJECT: AW26406

Laboratory Number: 71690

Sample Source: GBH26 (0.5-0.6m)

Sample Description: SILTY CLAY: red-brown, high plasticity, trace of fine to coarse sand.

1. IMMERSION

Does not slake	→	Class 7 swells (Organic Soils)	
Slakes	X	Class 8 does not swell (Laterised)	

2. COMPLETE DISPERSION

Class 1 complete	
Class 2 partial	
No Dispersion	X

3. REMOULDING

Class 3 disperses	
Does not disperse	X

4. CARBONATE & GYPSUM (Acid Indicator)

Class 4 present	
Absent	X

5. VIGOROUS SHAKING

Class 5 disperses	X
Class 6 no dispersion	

EMERSION CLASS NO.: 5

Water used:	Distilled water at 20°C	Date Tested:	23.4.12
Tested By:	ME	Sampled By:	Client
Test Procedure: AS 1289 3.8.1		Job Number:	198-019

Approved Signatory: Chris Lloyd **Date:** 2.5.12

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10.4. Point Load Index

TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

POINT LOAD STRENGTH INDEX

CLIENT: **Hart Geo Pty Ltd**
11 Baldwin Street, Gordon NSW 2072
PROJECT: **AW26406**

LAB. NO.	SAMPLE SOURCE	LITHOLOGY	PLATEN SEPARATION DIAM (mm)	PLATEN SEPARATION HEIGHT (mm)	TEST ORIENTATION	POINT LOAD STRENGTH Is (MPa)	POINT LOAD STRENGTH $Is_{(50)}$ (MPa)	Type OF FAILURE
71857	BH28 3.70-3.90m	Sandstone	52.0		Diametral	1.66	1.69	FOB
				42.5	Axial	2.64	2.72	FOB
71858	BH28 4.60-4.75m	Sandstone	51.6		Diametral	0.20	0.20	FOB
				37.6	Axial	0.77	0.77	FOB
71859	BH28 5.60-5.75m	Siltstone	50.9		Diametral	0.22	0.23	FOB
				40.7	Axial	0.27	0.27	FOB
71860	BH28 6.90-7.00m	Siltstone	50.3		Diametral	0.03	0.03	FOB
				39.4	Axial	0.15	0.15	FOB
71861	BH28 7.05-7.15m	Siltstone	50.7		Diametral	0.07	0.07	FOB
				37.1	Axial	0.23	0.22	FOB
71862	BH28 8.00-8.15m	Siltstone	51.1		Diametral	0.35	0.36	FOB
				43.6	Axial	0.71	0.73	FOB
71863	BH28 9.65-9.75m	Siltstone	51.6		Diametral	0.47	0.47	FOB
				41.1	Axial	0.47	0.47	FOB
71864	BH28 10.80-10.95m	Siltstone	51.4		Diametral	0.29	0.29	FOB
				44.5	Axial	0.38	0.39	FOB

NOTES TO TESTING

Testing Device	ELE Point Load Tester
Sample History	Unsoaked
Sampled By:	Client
Job Number:	198-020
Date Tested:	26.04.12
Test Method:	AS 4133.4.1 2007

Failure Type
FOB Fracture through fabric of specimen oblique to bedding not influenced by weak planes
FB Fracture along bedding
FIP Fracture influenced by pre-existing plane, microfracture, vein, chemical alteration
CPF Chip or partial fracture

Page 1 of 2

Approved Signatory: Chris Lloyd **Date:** 27.04.12

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Accreditation No. 2418

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TEST CERTIFICATE

SGS

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

POINT LOAD STRENGTH INDEX

CLIENT: **Hart Geo Pty Ltd**
11 Baldwin Street, Gordon NSW 2072

PROJECT: **AW26406**

LAB. NO.	SAMPLE SOURCE	LITHOLOGY	PLATEN SEPARATION DIAM (mm)	PLATEN SEPARATION HEIGHT (mm)	TEST ORIENTATION	POINT LOAD STRENGTH Is (MPa)	POINT LOAD STRENGTH $Is_{(50)}$ (MPa)	Type OF FAILURE
71865	BH28 11.00-11.20m	Siltstone	51.5		Diametral	0.26	0.27	FOB
				47.5	Axial	0.39	0.40	FOB
71852	BH29 3.70-3.90m	Sandstone	51.8		Diametral	1.24	1.26	FOB
				45.7	Axial	1.45	1.52	FOB
71853	BH29 4.85-5.00m	Sandstone	51.8		Diametral	0.54	0.55	FOB
				39.5	Axial	0.88	0.89	FOB
71854	BH29 5.00-5.10m	Sandstone	51.8		Diametral	0.99	1.01	FOB
				41.4	Axial	1.18	1.20	FOB
71855	BH29 6.75-6.90m	Siltstone	51.7		Diametral	0.22	0.22	FOB
				40.4	Axial	0.33	0.34	FOB
71856	BH29 7.20-7.35m	Siltstone	51.6		Diametral	0.40	0.40	FOB
				32.7	Axial	0.33	0.31	FOB

NOTES TO TESTING

Testing Device	ELE Point Load Tester
Sample History	Unsoaked
Sampled By:	Client
Job Number:	198-020
Date Tested:	26.04.12
Test Method:	AS 4133.4.1 2007

Failure Type

FOB	Fracture through fabric of specimen oblique to bedding not influenced by weak planes
FB	Fracture along bedding
FIP	Fracture influenced by pre-existing plane, microfracture, vein, chemical alteration
CPF	Chip or partial fracture

Page 2 of 2

Approved Signatory: Chris Lloyd **Date:** 27.04.12

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10.5. UCS Classification

SGS

TEST CERTIFICATE

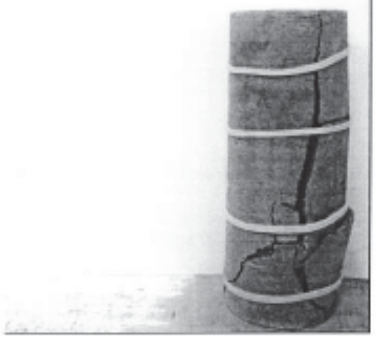
SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
(PO Box 6432)
Alexandria NSW 2015
Australia

UNIAXIAL COMPRESSIVE STRENGTH

CLIENT:	**Hart Geo Pty Ltd**	**JOB NO.:**	198-020
PROJECT:	**AW26406**	**LAB NO.:**	71867
		Date Tested:	26.04.12
Sample ID:	**BH28**	**Test Type:**	Compressive Strength
		Sample Type:	Single Individual Rock Core Specimen
Sample Length (mm):	142.1 Sample Diameter (mm): 51.4		
Length/Diameter Ratio:	2.8	**Rock Type:**	Siltstone
Dry Density (t/m^3):	2.39	**Depth (m):**	9.40-9.60m
Moisture Content (%):	4.6		

Hart Geo
AW26406
Unconfined Compressive Strength
TEST SAMPLE

Hart Geo
AW26406
Unconfined Compressive Strength
AFTER TEST SAMPLE



UNIAXIAL COMPRESSIVE STRENGTH:
U.C.S. (MPa) = 7.2

Notes on Testing: Specimen tested at the moisture condition as received.

Specimen supplied by client.

Bulk density value was determined by vernier calliper method.

Testing Equipment: CL 10305 2000kn Hydraulic Compression Machine

Mode of Failure: Brittle

The time of the test falls outside the Standard Limits of 5-15 mins due to sample strength being lower than estimated strength.

Test Method: AS 4133.4.2.1

Approved Signatory: Chris Lloyd **Date:** 27.04.12

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Accreditation No. 2418

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SGS

TEST CERTIFICATE

SGS Australia Pty Ltd
Unit 15, 33 Maddox Street
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Alexandria NSW 2015
Australia

UNIAXIAL COMPRESSIVE STRENGTH

CLIENT:	Hart Geo Pty Ltd	**JOB NO.:**	198-020
PROJECT:	AW26406	**LAB NO.:**	71866
		Date Tested:	26.04.12
Sample ID:	BH29	**Test Type:**	Compressive Strength
		Sample Type:	Single Individual Rock Core Specimen
Sample Length (mm):	151.9 Sample Diameter (mm): 51.7		
Length/Diameter Ratio:	2.9	**Rock Type:**	Sandstone
Dry Density (t/m^3):	2.37	**Depth (m):**	3.45-3.70m
Moisture Content (%):	4.9		

UNIAXIAL COMPRESSIVE STRENGTH:
U.C.S. (MPa) = **25.7**

Notes on Testing: Specimen tested at the moisture condition as received.

Specimen supplied by client.

Bulk density value was determined by vernier calliper method.

Testing Equipment: CL 10305 2000kn Hydraulic Compression Machine

Mode of Failure: Brittle

Test Method: AS 4133.4.2.1

Approved Signatory: Chris Lloyd **Date:** 27.04.12

ilac-MRA
Accreditation No. 2418

NATA

This document is issued in accordance with NATA's accreditation requirements

PF-(AU)-(IND(MTE))-(GEN)-RPT-645.VER1.09.02.2011 – Page 1 of 1

11. Borelogs

11.1. Auger

TEST SITE 1					TEST SITE 2				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT		2		100	CLAYEY SILT		1	
200	(br/gy-gy)		1		200	(br/gy-gy)		2	
300	moist & med dense		3		300	moist & med dense		2	
400	SILTY CLAY		2		400			2	
500	(red/or-gy/lt rd)			250	500	SILTY CLAY			300
600	moist & very stiff				600	(red/or-gy/lt rd)			
700					700	moist & very stiff			
800					800				
900					900				
1000				550	1000				500
1100					1100				
1200					1200				
1300					1300				
1400				450	1400				
1500	XW SILTSTONE				1500				600
1600	-minor clay lenses throughout				1600				
1700	(or/gy-gy)				1700				
1800	dry & Very Low Strength				1800				
1900					1900	XW SILTSTONE			
2000	XW SILTSTONE				2000	-minor clay lenses throughout			
2100	(gy/or)				2100	(or/gy-gy)			
2200	dry & Low/Medium Strength				2200	dry & Very Low Strength			
2300	UTP P/A – dw rock				2300				
2400					2400				
2500					2500	XW SILTSTONE			
2600					2600	(gy/or)			
2700					2700	dry & Low/Medium Strength			
2800					2800	UTP P/A – dw rock			
2900					2900				
3000					3000				

TEST SITE 3

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400				
500	SILTY CLAY			320
600	(red/or-gy/lt rd)			
700	moist & very stiff			
800				
900				400
1000				
1100				
1200				
1300				550
1400				
1500				
1600	XW SILTSTONE			
1700	-minor clay lenses throughout			
1800	(or/gy-gy)			
1900	dry & Very Low Strength			
2000				
2100				
2200	XW SILTSTONE			
2300	(gy/or)			
2400	dry & Low/Medium Strength			
2500	UTP P/A – dw rock			
2600				
2700				
2800				
2900				
3000				

TEST SITE 4

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			350
500	(red/or-gy/lt rd)			
600	moist & very stiff			
700				
800				460
900				
1000				
1100				
1200				
1300				600
1400				
1500				
1600				
1700				
1800				600
1900	XW SILTSTONE			
2000	(gy/or)			
2100	dry & Low/Medium Strength			
2200				
2300				
2400	UTP P/A – dw rock			
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 5

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			300
600	moist & very stiff			
700				
800				
900				
1000				400
1100				
1200				
1300				
1400	dry & hard			
1500				600
1600				
1700				
1800	XW SILTSTONE			
1900	-minor clay lenses throughout			
2000	(or/gy-gy)			
2100	dry & Very Low Strength			
2200	XW SILTSTONE			
2300	(gy/or)			
2400	dry & Low/Medium Strength			
2500	UTP P/A – dw rock			
2600				
2700				
2800				
2900				
3000				

TEST SITE 6

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			250
600	moist & very stiff			
700				
800				320
900				
1000				
1100				470
1200				
1300				
1400				
1500				
1600	dry & hard			600
1700				
1800				
1900	XW SILTSTONE			
2000	-minor clay lenses throughout			
2100	(or/gy-gy)			
2200	dry & Very Low Strength			
2300	XW SILTSTONE			
2400	(gy/or)			
2500	dry & Low/Medium Strength			
2600				
2700	UTP P/A – dw rock			
2800				
2900				
3000				

TEST SITE 7

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			450
600	moist & very stiff			
700				
800				
900	XW SILTSTONE			
1000	-minor clay lenses throughout			
1100	(or/gy-gy)			
1200	dry & Very Low Strength			
1300				
1400				
1500				
1600				
1700	XW SILTSTONE			
1800	(gy/or)			
1900	dry & Low/Medium Strength			
2000				
2100				
2200				
2300				
2400	UTP P/A – dw rock			
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 8

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400				
500	SILTY CLAY			320
600	(red/or-gy/lt rd)			
700	moist & very stiff			
800				
900				500
1000				
1100				
1200				
1300				
1400				600
1500				
1600	XW SILTSTONE			
1700	-minor clay lenses throughout			
1800	(or/gy-gy)			
1900	dry & Very Low Strength			
2000	XW SILTSTONE			
2100	(gy/or)			
2200	dry & Low/Medium Strength			
2300	UTP P/A – dw rock			
2400				
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 9

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy) moist & med dense			
300	SILTY CLAY			
400	(red/or-gy/lt rd)			
500	moist & very stiff			350
600				
700				
800				440
900				
1000				
1100				
1200				600
1300				
1400	XW SILTSTONE			
1500	(gy/or)			
1600	dry & Low/Medium Strength			
1700				
1800				
1900	UTP P/A – dw rock			
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 10

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy) moist & med dense			
300	SILTY CLAY			
400	(red/or-gy/lt rd)			
500	moist & very stiff			280
600				
700				
800				500
900				
1000				
1100				450
1200				
1300				
1400				500
1500				
1600				
1700				550
1800				
1900				
2000				600
2100				
2200				
2300	XW SILTSTONE			
2400	(gy/or)			
2500	dry & Low/Medium Strength			
2600				
2700				
2800	UTP P/A – dw rock			
2900				
3000				

TEST SITE 11

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			350
600	moist & very stiff			
700				
800				
900				500
1000				
1100				
1200				
1300				600
1400				
1500				
1600				
1700	XW SILTSTONE			
1800	-minor clay lenses throughout			
1900	(or/gy-gy)			
2000	dry & Very Low Strength			
2100	XW SILTSTONE			
2200	(gy/or)			
2300	dry & Low/Medium Strength			
2400				
2500	UTP P/A – dw rock			
2600				
2700				
2800				
2900				
3000				

TEST SITE 12

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400				
500	SILTY CLAY			220
600	(red/or-gy/lt rd)			
700	moist & very stiff			
800				300
900				
1000				
1100				500
1200				
1300				
1400				
1500				
1600				600
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400	XW SILTSTONE			
2500	(gy/or)			
2600	dry & Low/Medium Strength			
2700				
2800				
2900				
3000				
	UTP P/A –DW ROCK @ 4000mm			

TEST SITE 13

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			320
600	moist & very stiff			
700				
800				420
900				
1000				
1100				550
1200				
1300				
1400				600
1500				
1600				
1700				
1800				
1900				
2000	XW SILTSTONE			
2100	-minor clay lenses throughout			
2200	(or/gy-gy)			
2300	dry & Very Low Strength			
2400				
2500	XW SILTSTONE			
2600	(gy/or)			
2700	dry & Low/Medium Strength			
2800	UTP P/A – dw rock			
2900				
3000				

TEST SITE 14

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			360
600	moist & very stiff			
700				
800				
900				420
1000				
1100				
1200				
1300				550
1400				
1500				
1600				
1700				600
1800				
1900	XW SILTSTONE			
2000	-minor clay lenses throughout			
2100	(or/gy-gy)			
2200	dry & Very Low Strength			
2300	XW SILTSTONE			
2400	(gy/or)			
2500	dry & Low/Medium Strength			
2600				
2700	UTP P/A – dw rock			
2800				
2900				
3000				

TEST SITE 15

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy) moist & med dense			
300	SILTY CLAY			
400	(red/or-gy/lt rd)			
500	moist & very stiff			360
600				
700				
800				450
900				
1000				
1100				600
1200				
1300				
1400	XW SILTSTONE			
1500	(gy/or)			
1600	dry & Low/Medium Strength			
1700				
1800				
1900				
2000				
2100	UTP P/A – dw rock			
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 16

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			350
600	moist & very stiff			
700				
800				320
900				
1000				
1100				460
1200				
1300				
1400				600
1500				
1600				
1700				600
1800				
1900				
2000				
2100	XW SILTSTONE			
2200	(gy/or)			
2300	dry & Low/Medium Strength			
2400				
2500				
2600				
2700	UTP P/A – dw rock			
2800				
2900				
3000				

TEST SITE 17

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			400
600	moist & very stiff			
700				
800				
900				480
1000				
1100				
1200				
1300				600
1400				
1500				
1600				
1700				
1800	XW SILTSTONE			
1900	(gy/or)			
2000	dry & Low/Medium Strength			
2100				
2200				
2300				
2400				
2500	UTP P/A – dw rock			
2600				
2700				
2800				
2900				
3000				

TEST SITE 18

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			300
600	moist & very stiff			
700				
800				350
900				
1000				
1100				
1200				600
1300				
1400				
1500				
1600	XW SILTSTONE			
1700	-minor clay lenses throughout			
1800	(or/gy-gy)			
1900	dry & Very Low Strength			
2000	XW SILTSTONE			
2100	(gy/or)			
2200	dry & Low/Medium Strength			
2300				
2400	UTP P/A – dw rock			
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 19

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400				
500	SILTY CLAY			340
600	(red/or-gy/lt rd)			
700	moist & very stiff			
800				
900				520
1000				
1100				
1200				
1300				
1400				600
1500				
1600				
1700				
1800	XW SILTSTONE			
1900	(gy/or)			
2000	dry & Low/Medium Strength			
2100				
2200				
2300				
2400	UTP P/A – dw rock			
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 20

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			300
600	moist & very stiff			
700				
800				
900				500
1000				
1100				
1200				
1300				600
1400				
1500				
1600				
1700	XW SILTSTONE			
1800	-minor clay lenses throughout			
1900	(or/gy-gy)			
2000	dry & Very Low Strength			
2100	XW SILTSTONE			
2200	(gy/or)			
2300	dry & Low/Medium Strength			
2400				
2500				
2600				
2700				
2800	UTP P/A – dw rock			
2900				
3000				

TEST SITE 21					TEST SITE 22				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT				100	CLAYEY SILT			
200	(br/gy-gy)				200	(br/gy-gy) moist & med dense			
300	moist & med dense				300	SILTY CLAY			
400					400	(red/or-gy/lt rd)			
500	SILTY CLAY			250	500	moist & very stiff			250
600	(red/or-gy/lt rd)				600				
700	moist & very stiff				700				
800				300	800				
900					900				320
1000					1000				
1100				500	1100				
1200					1200				
1300					1300				600
1400					1400	XW SILTSTONE			
1500					1500	-minor clay lenses throughout			
1600				600	1600	(or/gy-gy)			
1700					1700	dry & Very Low Strength			
1800					1800				
1900					1900	XW SILTSTONE			
2000					2000	(gy/or)			
2100					2100	dry & Low/Medium Strength			
2200				600	2200				
2300					2300				
2400					2400	UTP P/A – dw rock			
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				
3100					3100				
3200					3200				
3300					3300				
3400	XW SILTSTONE				3400				
3500	-minor clay lenses throughout				3500				
3600	(or/gy-gy)				3600				
3700	dry & Very Low Strength				3700				
3800	XW SILTSTONE				3800				
3900	(gy/or)				3900				
4000	dry & Low/Medium Strength				4000				
4100					4100				
4200					4200				
4300					4300				
4400					4400				
4500					4500				
4600	UTP P/A – dw rock				4600				
4700					4700				
4800					4800				
4900					4900				
5000					5000				

TEST SITE 23					TEST SITE 24				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT				100	CLAYEY SILT			
200	(br/gy-gy) moist & med dense				200	(br/gy-gy)			
300	SILTY CLAY				300	moist & med dense			
400	(red/or-gy/lt rd)				400				
500	moist & very stiff			300	500	SILTY CLAY			280
600					600	(red/or-gy/lt rd)			
700					700	moist & very stiff			
800				350	800				400
900					900				
1000					1000				
1100					1100				
1200				600	1200				600
1300					1300				
1400					1400				
1500	XW SILTSTONE				1500				
1600	-minor clay lenses throughout				1600				
1700	(or/gy-gy)				1700	XW SILTSTONE			
1800	dry & Very Low Strength				1800	-minor clay lenses throughout			
1900	XW SILTSTONE				1900	(or/gy-gy)			
2000	(gy/or)				2000	dry & Very Low Strength			
2100	dry & Low/Medium Strength				2100	XW SILTSTONE			
2200					2200	(gy/or)			
2300					2300	dry & Low/Medium Strength			
2400	UTP P/A – dw rock				2400				
2500					2500				
2600					2600	UTP P/A – dw rock			
2700					2700				
2800					2800				
2900					2900				
3000					3000				

TEST SITE 25					TEST SITE 26				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT				100	CLAYEY SILT			
200	(br/gy-gy)				200	(br/gy-gy) moist & med dense			
300	moist & med dense				300	SILTY CLAY			
400					400	(red/or-gy/lt rd)			
500	SILTY CLAY			250	500	moist & very stiff			250
600	(red/or-gy/lt rd)				600				
700	moist & very stiff				700				
800				300	800				
900					900				320
1000					1000	XW SILTSTONE			
1100				500	1100	-minor clay lenses throughout			
1200					1200	(or/gy-gy)			
1300					1300	dry & Very Low Strength			
1400					1400	XW SILTSTONE			
1500					1500	(gy/or)			
1600				600	1600	dry & Low/Medium Strength			
1700					1700				
1800					1800				
1900					1900	UTP P/A – dw rock			
2000					2000				
2100					2100				
2200				600	2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				
3100					3100				
3200					3200				
3300					3300				
3400					3400				
3500					3500				
3600					3600				
3700					3700				
3800					3800				
3900					3900				
4000					4000				
4100	XW SILTSTONE				4100				
4200	-minor clay lenses throughout				4200				
4300	(or/gy-gy)				4300				
4400	dry & Very Low Strength				4400				
4500					4500				
4600	XW SILTSTONE				4600				
4700	(gy/or)				4700				
4800	dry & Low/Medium Strength				4800				
4900					4900				
5000					5000				
	END P/A								

TEST SITE 27

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CLAYEY SILT			
200	(br/gy-gy)			
300	moist & med dense			
400	SILTY CLAY			
500	(red/or-gy/lt rd)			420
600	moist & very stiff			
700				
800				
900				500
1000				
1100				
1200				
1300				
1400				600
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300	XW SILTSTONE			
2400	(gy/or)			
2500	dry & Low/Medium Strength			
2600				
2700				
2800	UTP P/A – dw rock			
2900				
3000				

11.2. Diamond Core

Borehole Log

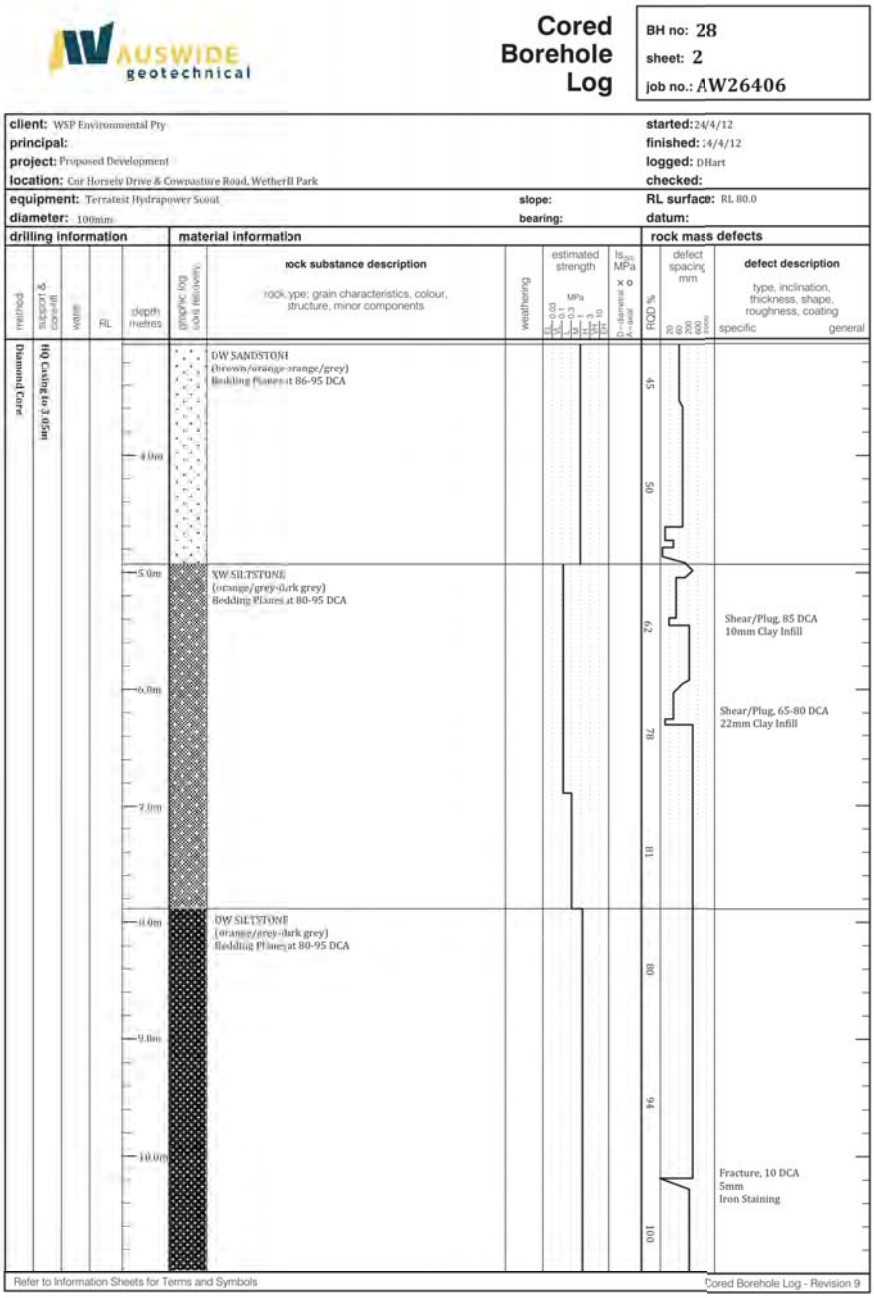
BH no: 28
sheet: 1
job no.: AW26406

client: WSP Environmental Pty
principal:
project: Proposed Development
location: Cnr Hornsely Drive & Cowpasture Road, Wetherill Park
equipment: Terratest Hydropower Scout
diameter: 100mm

started: 24/4/12
finished: 24/4/12
logged: DHart
checked:
slope:
bearing:
RL surface: RL 80m
datum:

drilling information						material information						
method	support	water	notes samples tests etc	RL	depth metres	graphic log	USCS symbol	material description soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	hand penetro-meter kPa 100 200 300 400	structure and additional observations
SPA								CLAYEY SILT (brown/grey)	M	M,D		
					1.0m			SILTY CLAY Moderate-High Plasticity (orange/grey-red/grey)	M	V.Stiff		MC<PL
									D	Hard		
					2.0m			XW SILTSTONE -minor clay layers (orange/grey-grey) Very Low strength	D			
					3.0m			End Auger – Start Core				
					4.0m							
					5.0m							
					6.0m							
					7.0m							
					8.0m							

Refer to Information Sheets for Terms and Symbols — Borehole Log - Revision 9



AUSWIDE geotechnical

Cored Borehole Log

BH no: 28
sheet: 2
job no.: AW26406

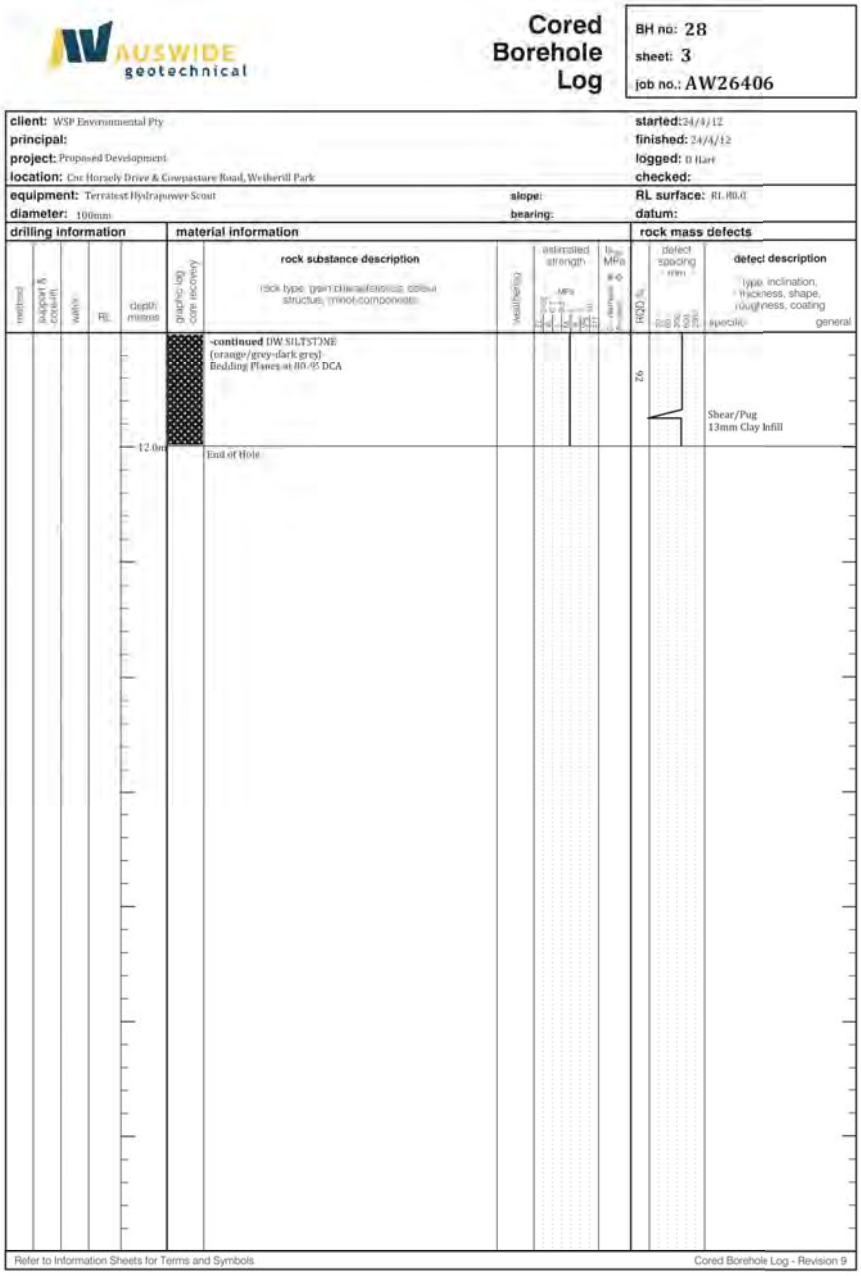
client: WSP Environmental Pty
principal:
project: Proposed Development
location: Cnr Horsely Drive & Cowpasture Road, Wetherill Park
equipment: Terratest Hydrapower Scout
diameter: 100mm

started: 24/4/12
finished: 24/4/12
logged: DHart
checked:
slope:
bearing:
RL surface: RL 80.0
datum:

drilling information | material information | rock mass defects

method	support & core-fill	water	RL	depth metres	graphic log (core recovery)	rock substance description (rock type; grain characteristics, colour, structure, minor components)	weathering	estimated strength (MPa)	$Is_{(50)}$ MPa (D—diametral, A—axial)	RQD %	defect spacing mm	defect description (type, inclination, thickness, shape, roughness, coating) specific	general
Diamond Core	HQ Casing to 3.05m			4.0m		DW SANDSTONE (brown/orange-orange/grey) Bedding Planes at 86-95 DCA				45			
				5.0m		XW SILTSTONE (orange/grey-dark grey) Bedding Planes at 80-95 DCA				62		Shear/Plug, 85 DCA 10mm Clay Infill	
				6.8m						78		Shear/Plug, 65-80 DCA 22mm Clay Infill	
				7.0m						18			
				11.0m		DW SILTSTONE (orange/grey-dark grey) Bedding Planes at 80-95 DCA				80			
				9.8m						94			
				10.0m						100		Fracture, 10 DCA 5mm Iron Staining	

Refer to Information Sheets for Terms and Symbols — Cored Borehole Log - Revision 9



AUSWIDE geotechnical

Cored Borehole Log

BH no: 28
sheet: 3
job no.: AW26406

client: WSP Environmental Pty
principal:
project: Proposed Development
location: Cnr Horsely Drive & Cowpasture Road, Wetherill Park
equipment: Terratest Hydropower Scout
diameter: 100mm

started: 24/4/12
finished: 24/4/12
logged: D Hart
checked:
RL surface: RL 80.0
datum:
slope:
bearing:

drilling information | material information | rock mass defects

method | support & coolant | water | RL | depth: metres | graphic log core recovery | rock substance description (rock type, grain characteristics, colour, structure, minor components) | weathering | estimated strength MPa | Is(50) MPa | defect spacing mm | defect description (type, inclination, thickness, shape, roughness, coating) specific general

-continued DW SILTSTONE
(orange/grey-dark grey)
Bedding Planes at 80/05 DCA

RQD % 92

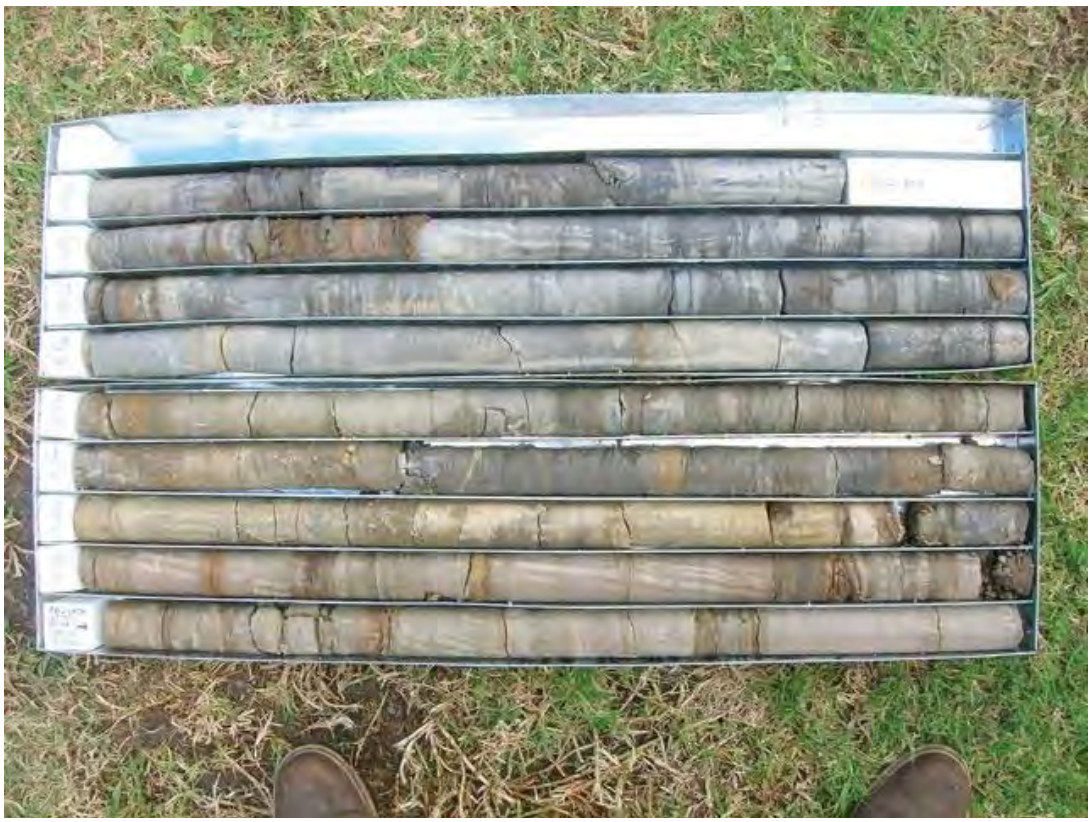
Shear/Pug
13mm Clay Infill

12.0m

End of Hole

Refer to Information Sheets for Terms and Symbols

Cored Borehole Log - Revision 9



AUSWIDE geotechnical

Borehole Log

BH no: 29
sheet: 1
job no.: AW26406

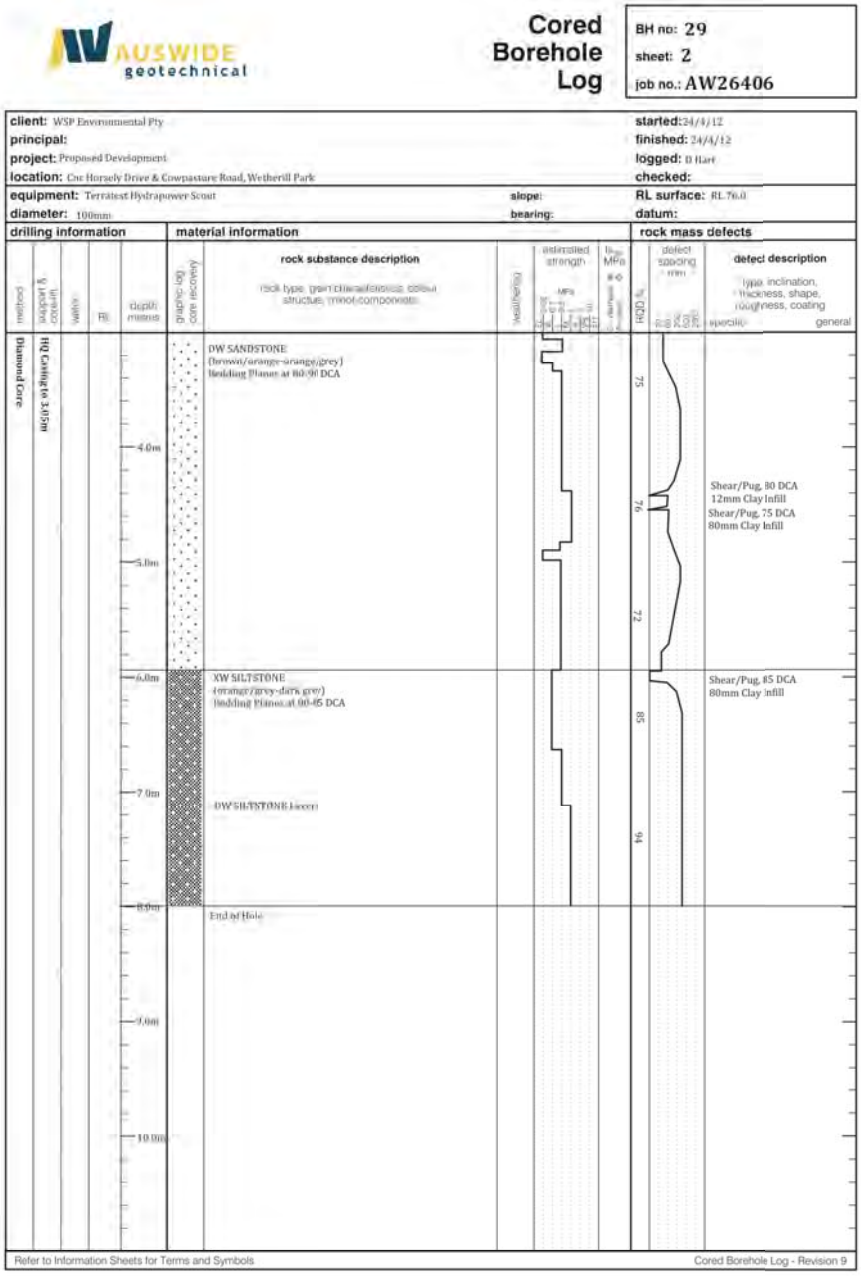
client: WSP Environmental Pty
principal:
project: Proposed Development
location: Cnr Hornsby Drive & Cowpasture Road, Wetherill Park
equipment: Terratest Hydrapower Scout
diameter: 100mm

started: 24/4/12
finished: 24/4/12
logged: DHart
checked:
slope:
bearing:
RL surface: RL 76m
datum:

drilling information | **material information**

method	support	water	notes samples tests etc	RL	depth metres	graphic log	USCS symbol	material description (soil type: plasticity or particle characteristics, colour, secondary and minor components.)	moisture condition	consistency/ density index	hand penetrometer kPa 100 200 300 400	structure and additional observations
SPA								CLAYEY SILT (brown/grey)	M	M,D		
					1.0m			SILTY CLAY Moderate-High Plasticity (orange/grey-red/grey)	M	V.Stiff		MC<PL
									D	Hard		
					2.0m			XW SILTSTONE -minor clay layers (orange/grey-grey) Very Low strength	D			
					3.0m			End Auger – Start Core				
					4.0m							
					5.0m							
					6.0m							
					7.0m							
					8.0m							

Refer to Information Sheets for Terms and Symbols — Borehole Log - Revision 9



AUSWIDE geotechnical

Cored Borehole Log

BH no: 29
sheet: 2
job no.: AW26406

client: WSP Environmental Pty
principal:
project: Proposed Development
location: Cnr Horsely Drive & Cowpasture Road, Wetherill Park
equipment: Terratest Hydrapower Scout
diameter: 100mm

started: 24/4/12
finished: 24/4/12
logged: D Hart
checked:
RL surface: RL 76.0
datum:
slope:
bearing:

drilling information | material information | rock mass defects

method	support & penetration	water	RL	depth metres	graphic log & core recovery	rock substance description (rock type, grain characteristics, colour, structure, minor components)	weathering	estimated strength MPa	defect spacing mm	defect description (type, inclination, thickness, shape, roughness, coating) specific	general
Diamond Core	HQ Casing to 3.05m			4.0m		DW SANDSTONE (brown/orange-orange/grey) Bedding Planes at 80-90 DCA			75		
				5.0m					76	Shear/Pug, 80 DCA 12mm Clay Infill	
										Shear/Pug, 75 DCA 80mm Clay Infill	
									72		
				6.0m		XW SILTSTONE (orange/grey-dark grey) Bedding Planes at 00-05 DCA				Shear/Pug, 85 DCA 80mm Clay Infill	
				7.0m		DW SILTSTONE (as per)			85		
				8.0m		End of Hole			94		
				9.0m							
				10.0m							

Refer to Information Sheets for Terms and Symbols — Cored Borehole Log - Revision 9


3m
4m
5m
6m
7m

Appendix G – Laboratory Certificates

WSP - CHAIN OF CUSTODY

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Client:	**WSPT**	**Client Project Name and Number:**	**00030337.01**
Project Mgr:	**Peter Moore**		
Sampler:	**JM & JB**	**PO No.:**	
Address:	**41 McLaren Street North Sydney, 2060**		
Email:	**josie.milner AND peter.moore@wspgroup**	**Date results required:**	**STANDARD**
		Or choose:	**standard / 1 day / 2 day / 3 day**
		Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone:	**(02) 8925 6700** **Fax:**		

Job No: 71994

Date Received: 19/4/12
Time Received: 17:00
Received by: PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Metals (8)	OCPs	OPPs												Provide as much information about the sample as you can
1	Comp 01	12-17/4/12	Soil	X	X	X												
2	Comp 02	12-17/4/12	Soil	X	X	X												
3	Comp 03	12-17/4/12	Soil	X	X	X												
4	Comp 04	12-17/4/12	Soil	X	X	X												
5	Comp 05	12-17/4/12	Soil	X	X	X												
6	Comp 06	12-17/4/12	Soil	X	X	X												
7	Comp 07	12-17/4/12	Soil	X	X	X												
8	Comp 08	12-17/4/12	Soil	X	X	X												
9	Comp 09	12-17/4/12	Soil	X	X	X												
10	Comp 10	12-17/4/12	Soil	X	X	X												
11	Comp 11	12-17/4/12	Soil	X	X	X												
12	Comp 12	12-17/4/12	Soil	X	X	X												
13	Comp 13	12-17/4/12	Soil	X	X	X												
14	Comp 14	12-17/4/12	Soil	X	X	X												
15	Comp 15	12-17/4/12	Soil	X	X	X												

Relinquished by (company):	**WSP**	**Received by (company):**	ELS
Print Name:	**Josie Milner**	**Print Name:**	Preetha
Date & Time:	19/04/2012	**Date & Time:**	19/4/12 17:00
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: **(if applicable)**
Transported by: Hand delivered / courier
Page No:

WSP - CHAIN OF CUSTODY

Client:	**WSPT**	**Client Project Name and Number:**	**00030337.01**
Project Mgr:	**Peter Moore**		
Sampler:	**JM & JB**	**PO No.:**	
Address:	**41 McLaren Street North Sydney, 2060**		
		Date results required:	**STANDARD**
Email:	**josie.milner AND peter.moore@wspgroup**	**Or choose: standard / 1 day / 2 day / 3 day**	
		Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone:	**(02) 8925 6700** **Fax:**		

Sample Information				Tests Required															Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**Metals (8)**	**OCPs**	**OPPs**													**Provide as much information about the sample as you can**
16	Comp 16	12-17/4/12	Soil	X	X	X													
17	Comp 17	12-17/4/12	Soil	X	X	X													
18	Comp 18	12-17/4/12	Soil	X	X	X													
19	Comp 19	12-17/4/12	Soil	X	X	X													
20	Comp 20	12-17/4/12	Soil	X	X	X													
21	Comp 21	12-17/4/12	Soil	X	X	X													
22	Comp 22	12-17/4/12	Soil	X	X	X													
23	Comp 23	12-17/4/12	Soil	X	X	X													
24	Comp 24	12-17/4/12	Soil	X	X	X													
25	Comp 25	12-17/4/12	Soil	X	X	X													
26	Comp 26	12-17/4/12	Soil	X	X	X													
27	Comp 27	12-17/4/12	Soil	X	X	X													
28	Comp 28	12-17/4/12	Soil	X	X	X													
29	Comp 29	12-17/4/12	Soil	X	X	X													
30	Comp 30	12-17/4/12	Soil	X	X	X													

Relinquished by (company):	**WSP**	**Received by (company):**	ELS
Print Name:	**Josie Milner**	**Print Name:**	Phat
Date & Time:	19/04/2012	**Date & Time:**	19/4/12 17:50
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: **(If applicable)**
Transported by: Hand delivered / courier
Page No:

71994

WSP - CHAIN OF CUSTODY

Client:	**WSPT**	**Client Project Name and Number:**	**00030337.01**
Project Mgr:	**Peter Moore**	**PO No.:**	
Sampler:	**JM & JB**		
Address:	**41 McLaren Street North Sydney, 2060**	**Date results required:**	**STANDARD**
		Or choose: standard / 1 day / 2 day / 3 day	
Email:	**josie.milner AND peter.moore@wspgroup**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	
Phone:	**(02) 8925 6700** **Fax:**		

Sample Information				Tests Required														Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**Metals (8)**	**OCPs**	**OPPs**												**Provide as much information about the sample as you can**
31	Comp 31	12-17/4/12	Soil	X	X	X												
32	Comp 32	12-17/4/12	Soil	X	X	X												
33	Comp 33	12-17/4/12	Soil	X	X	X												
34	Comp 34	12-17/4/12	Soil	X	X	X												
35	Comp 35	12-17/4/12	Soil	X	X	X												
36	Comp 36	12-17/4/12	Soil	X	X	X												
37	Comp 37	12-17/4/12	Soil	X	X	X												
38	Comp 38	12-17/4/12	Soil	X	X	X												
39	Comp 39	12-17/4/12	Soil	X	X	X												
40	Comp 40	12-17/4/12	Soil	X	X	X												
41	Comp 41	12-17/4/12	Soil	X	X	X												
42	Comp 42	12-17/4/12	Soil	X	X	X												
43	Comp 43	12-17/4/12	Soil	X	X	X												
44	Comp 44	12-17/4/12	Soil	X	X	X												
45	Comp 45	12-17/4/12	Soil	X	X	X												

Relinquished by (company):	**WSP**	**Received by (company):**	ELS
Print Name:	**Josie Milner**	**Print Name:**	Peat
Date & Time:	19/04/2012	**Date & Time:**	19/4/12 17:00
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: **(if applicable)**
Transported by: Hand delivered / courier
Page No:

#71994

WSP - CHAIN OF CUSTODY

Client:	**WSPT**	**Client Project Name and Number:**	**00030337.01**
Project Mgr:	**Peter Moore**		
Sampler:	**JM & JB**	**PO No.:**	
Address:	**41 McLaren Street North Sydney, 2060**		
		Date results required:	**STANDARD**
Email:	**josie.milner AND peter.moore@wspgroup**	**Or choose:**	**standard / 1 day / 2 day / 3 day**
		Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone:	**(02) 8925 6700** **Fax:**		

Sample Information				Tests Required														Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**Metals (8)**	**OCPs**	**OPPs**												**Provide as much information about the sample as you can**
46	Comp 46	12-17/4/12	Soil	X	X	X												
47	Comp 47	12-17/4/12	Soil	X	X	X												
48	Comp 48	12-17/4/12	Soil	X	X	X												
49	Comp 49	12-17/4/12	Soil	X	X	X												
50	Comp 50	12-17/4/12	Soil	X	X	X												
51	Comp 51	12-17/4/12	Soil	X	X	X												
52	Comp 52	12-17/4/12	Soil	X	X	X												
53	Intra Dup 1	12-17/4/12	Soil	X	X	X												
54	Intra Dup 2	12-17/4/12	Soil	X	X	X												
	Inter Dup 1	12-17/4/12	Soil	X	X	X	Please forward to ALS											
	Inter Dup 2	12-17/4/12	Soil	X	X	X	Please forward to ALS											

Relinquished by (company):	**WSP**	**Received by (company):**	ELS
Print Name:	**Josie Milner**	**Print Name:**	Peat
Date & Time:	19/04/2012	**Date & Time:**	19/4/12 17:10
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: **(if applicable)**
Transported by: Hand delivered / courier
Page No:

71994

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environment Energy
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Peter Moore / Josie Milner

Sample log in details:

Your reference:	**00030337.01**
Envirolab Reference:	**71994**
Date received:	19/04/12
Date results expected to be reported:	**27/04/12**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	54 Soils
Turnaround time requested:	Standard
Temperature on receipt	Ambient
Cooling Method:	None
Sampling Date Provided:	Yes

Comments:

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

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 71994

Client:
WSP Environment Energy
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Peter Moore / Josie Milner

Sample log in details:

Your Reference:	**00030337.01**		
No. of samples:	54 Soils		
Date samples received / completed instructions received	19/04/12	/	19/04/12

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	27/04/12	/	24/04/12
Date of Preliminary Report:	Not issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Nancy Zhang
Chemist

Giovanni Agosti
Technical Manager

Alex MacLean
Chemist

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Organochlorine Pesticides in soil						
Our Reference:	UNITS	71994-1	71994-2	71994-3	71994-4	71994-5
Your Reference	----------	Comp 01	Comp 02	Comp 03	Comp 04	Comp 05
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	0.5	0.3	<0.1	0.2
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	87	84	84	86

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-6 Comp 06 12-17/04/12 Soil	71994-7 Comp 07 12-17/04/12 Soil	71994-8 Comp 08 12-17/04/12 Soil	71994-9 Comp 09 12-17/04/12 Soil	71994-10 Comp 10 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	78	88	81	84	85

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	71994-11 Comp 11 12-17/04/12 Soil	71994-12 Comp 12 12-17/04/12 Soil	71994-13 Comp 13 12-17/04/12 Soil	71994-14 Comp 14 12-17/04/12 Soil	71994-15 Comp 15 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	83	86	87	84	85

Organochlorine Pesticides in soil						
Our Reference:	UNITS	71994-16	71994-17	71994-18	71994-19	71994-20
Your Reference	----------	Comp 16	Comp 17	Comp 18	Comp 19	Comp 20
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	84	86	84	83	88

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	71994-21 Comp 21 12-17/04/12 Soil	71994-22 Comp 22 12-17/04/12 Soil	71994-23 Comp 23 12-17/04/12 Soil	71994-24 Comp 24 12-17/04/12 Soil	71994-25 Comp 25 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.2	0.2	0.4	0.1	0.2
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	86	95	96	94

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-26 Comp 26 12-17/04/12 Soil	71994-27 Comp 27 12-17/04/12 Soil	71994-28 Comp 28 12-17/04/12 Soil	71994-29 Comp 29 12-17/04/12 Soil	71994-30 Comp 30 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.2	<0.1	0.2	0.2	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	95	92	89	93

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	71994-31 Comp 31 12-17/04/12 Soil	71994-32 Comp 32 12-17/04/12 Soil	71994-33 Comp 33 12-17/04/12 Soil	71994-34 Comp 34 12-17/04/12 Soil	71994-35 Comp 35 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.4	0.9	<0.1	<0.1	0.3
Dieldrin	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	92	91	92	89	91

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	71994-36 Comp 36 12-17/04/12 Soil	71994-37 Comp 37 12-17/04/12 Soil	71994-38 Comp 38 12-17/04/12 Soil	71994-39 Comp 39 12-17/04/12 Soil	71994-40 Comp 40 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.1	0.2	0.3	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	100	106	98	99

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	71994-41 Comp 41 12-17/04/12 Soil	71994-42 Comp 42 12-17/04/12 Soil	71994-43 Comp 43 12-17/04/12 Soil	71994-44 Comp 44 12-17/04/12 Soil	71994-45 Comp 45 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	0.1	<0.1	0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	86	86	87	86

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-46 Comp 46 12-17/04/12 Soil	71994-47 Comp 47 12-17/04/12 Soil	71994-48 Comp 48 12-17/04/12 Soil	71994-49 Comp 49 12-17/04/12 Soil	71994-50 Comp 50 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	0.6	<0.1	0.5	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	84	91	83	89

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-51 Comp 51 12-17/04/12 Soil	71994-52 Comp 52 12-17/04/12 Soil	71994-53 Intra Dup 1 12-17/04/12 Soil	71994-54 Intra Dup 2 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	87	85	95	85

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-1 Comp 01 12-17/04/12 Soil	71994-2 Comp 02 12-17/04/12 Soil	71994-3 Comp 03 12-17/04/12 Soil	71994-4 Comp 04 12-17/04/12 Soil	71994-5 Comp 05 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	87	84	84	86

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-6 Comp 06 12-17/04/12 Soil	71994-7 Comp 07 12-17/04/12 Soil	71994-8 Comp 08 12-17/04/12 Soil	71994-9 Comp 09 12-17/04/12 Soil	71994-10 Comp 10 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	78	88	81	84	85

Organophosphorus Pesticides						
Our Reference:	UNITS	71994-11	71994-12	71994-13	71994-14	71994-15
Your Reference	----------	Comp 11	Comp 12	Comp 13	Comp 14	Comp 15
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	83	86	87	84	85

Organophosphorus Pesticides						
Our Reference:	UNITS	71994-16	71994-17	71994-18	71994-19	71994-20
Your Reference	----------	Comp 16	Comp 17	Comp 18	Comp 19	Comp 20
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	84	86	84	83	88

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-21 Comp 21 12-17/04/12 Soil	71994-22 Comp 22 12-17/04/12 Soil	71994-23 Comp 23 12-17/04/12 Soil	71994-24 Comp 24 12-17/04/12 Soil	71994-25 Comp 25 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	86	95	96	94

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-26 Comp 26 12-17/04/12 Soil	71994-27 Comp 27 12-17/04/12 Soil	71994-28 Comp 28 12-17/04/12 Soil	71994-29 Comp 29 12-17/04/12 Soil	71994-30 Comp 30 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	95	92	89	93

Organophosphorus Pesticides						
Our Reference:	UNITS	71994-31	71994-32	71994-33	71994-34	71994-35
Your Reference	----------	Comp 31	Comp 32	Comp 33	Comp 34	Comp 35
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	92	91	92	89	91

Organophosphorus Pesticides						
Our Reference:	UNITS	71994-36	71994-37	71994-38	71994-39	71994-40
Your Reference	----------	Comp 36	Comp 37	Comp 38	Comp 39	Comp 40
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	100	106	98	99

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-41 Comp 41 12-17/04/12 Soil	71994-42 Comp 42 12-17/04/12 Soil	71994-43 Comp 43 12-17/04/12 Soil	71994-44 Comp 44 12-17/04/12 Soil	71994-45 Comp 45 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	86	86	87	86

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-46 Comp 46 12-17/04/12 Soil	71994-47 Comp 47 12-17/04/12 Soil	71994-48 Comp 48 12-17/04/12 Soil	71994-49 Comp 49 12-17/04/12 Soil	71994-50 Comp 50 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	84	91	83	89

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-51 Comp 51 12-17/04/12 Soil	71994-52 Comp 52 12-17/04/12 Soil	71994-53 Intra Dup 1 12-17/04/12 Soil	71994-54 Intra Dup 2 12-17/04/12 Soil
Date extracted	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	21/04/2012	21/04/2012	21/04/2012	21/04/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	87	85	95	85

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-1	71994-2	71994-3	71994-4	71994-5
Your Reference	----------	Comp 01	Comp 02	Comp 03	Comp 04	Comp 05
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	7	7	7	9	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	21	21	19	21	19
Copper	mg/kg	70	46	45	38	37
Lead	mg/kg	30	31	26	27	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	10	10	11	10
Zinc	mg/kg	63	61	79	80	49

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-6	71994-7	71994-8	71994-9	71994-10
Your Reference	----------	Comp 06	Comp 07	Comp 08	Comp 09	Comp 10
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	9	8	7	7	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	19	21	19	22	19
Copper	mg/kg	40	29	26	27	28
Lead	mg/kg	26	21	19	21	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	13	11	9	10
Zinc	mg/kg	57	47	43	44	36

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-11	71994-12	71994-13	71994-14	71994-15
Your Reference	----------	Comp 11	Comp 12	Comp 13	Comp 14	Comp 15
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	8	8	9	8	10
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	20	20	22	22	21
Copper	mg/kg	30	33	49	34	32
Lead	mg/kg	23	24	21	19	22
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	12	15	11	9
Zinc	mg/kg	48	49	71	50	87

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-16	71994-17	71994-18	71994-19	71994-20
Your Reference	----------	Comp 16	Comp 17	Comp 18	Comp 19	Comp 20
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	8	8	6	6	11
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	22	21	21	19	20
Copper	mg/kg	44	41	43	39	31
Lead	mg/kg	29	18	19	20	19
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	18	12	12	11
Zinc	mg/kg	70	64	53	57	43

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-21	71994-22	71994-23	71994-24	71994-25
Your Reference	----------	Comp 21	Comp 22	Comp 23	Comp 24	Comp 25
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	10	10	12	9	13
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	21	18	25	22	22
Copper	mg/kg	32	26	31	29	25
Lead	mg/kg	17	15	19	21	20
Mercury	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Nickel	mg/kg	7	7	7	7	7
Zinc	mg/kg	36	35	62	48	44

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-26	71994-27	71994-28	71994-29	71994-30
Your Reference	----------	Comp 26	Comp 27	Comp 28	Comp 29	Comp 30
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	11	6	13	11	10
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	23	21	25	19	18
Copper	mg/kg	23	29	37	40	29
Lead	mg/kg	20	16	27	30	29
Mercury	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
Nickel	mg/kg	9	8	12	10	11
Zinc	mg/kg	48	42	62	56	75

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-31	71994-32	71994-33	71994-34	71994-35
Your Reference	----------	Comp 31	Comp 32	Comp 33	Comp 34	Comp 35
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	8	5	5	20	7
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	24	16	17	21	19
Copper	mg/kg	26	40	25	41	33
Lead	mg/kg	29	38	16	61	26
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	11	8	18	8
Zinc	mg/kg	48	72	36	100	63

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-36	71994-37	71994-38	71994-39	71994-40
Your Reference	----------	Comp 36	Comp 37	Comp 38	Comp 39	Comp 40
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	7	7	12	7	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	23	20	24	20	20
Copper	mg/kg	27	24	36	48	35
Lead	mg/kg	21	19	20	23	31
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	6	10	12	20
Zinc	mg/kg	44	44	56	51	65

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-41	71994-42	71994-43	71994-44	71994-45
Your Reference	----------	Comp 41	Comp 42	Comp 43	Comp 44	Comp 45
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	6	6	14	4	5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	19	19	23	20	18
Copper	mg/kg	35	36	58	33	36
Lead	mg/kg	19	18	22	25	23
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	mg/kg	14	9	22	16	12
Zinc	mg/kg	53	45	76	59	48

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-46	71994-47	71994-48	71994-49	71994-50
Your Reference	----------	Comp 46	Comp 47	Comp 48	Comp 49	Comp 50
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	5	7	11	6	5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	19	22	20	21	22
Copper	mg/kg	35	37	36	30	25
Lead	mg/kg	18	21	21	22	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	13	12	17	11	10
Zinc	mg/kg	54	60	48	40	46

Acid Extractable metals in soil						
Our Reference:	UNITS	71994-51	71994-52	71994-53	71994-54	71994-55
Your Reference	----------	Comp 51	Comp 52	Intra Dup 1	Intra Dup 2	Comp 01 - Triplicate
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Date analysed	-	20/04/2012	20/04/2012	20/04/2012	20/04/2012	20/04/2012
Arsenic	mg/kg	6	5	11	7	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	22	20	23	23	18
Copper	mg/kg	44	33	20	54	39
Lead	mg/kg	96	66	16	20	29
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	16	12	9	11	11
Zinc	mg/kg	220	130	35	63	63

Acid Extractable metals in soil		
Our Reference:	UNITS	71994-56
Your Reference	----------	Comp 31 - Triplicate
Date Sampled	----------	12-17/04/12
Type of sample		Soil
Date digested	-	20/04/2012
Date analysed	-	20/04/2012
Arsenic	mg/kg	8
Cadmium	mg/kg	<0.5
Chromium	mg/kg	22
Copper	mg/kg	31
Lead	mg/kg	56
Mercury	mg/kg	<0.1
Nickel	mg/kg	8
Zinc	mg/kg	71

Moisture						
Our Reference:	UNITS	71994-1	71994-2	71994-3	71994-4	71994-5
Your Reference	----------	Comp 01	Comp 02	Comp 03	Comp 04	Comp 05
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	20	21	21	21	21

Moisture						
Our Reference:	UNITS	71994-6	71994-7	71994-8	71994-9	71994-10
Your Reference	----------	Comp 06	Comp 07	Comp 08	Comp 09	Comp 10
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	22	20	18	19	18

Moisture						
Our Reference:	UNITS	71994-11	71994-12	71994-13	71994-14	71994-15
Your Reference	----------	Comp 11	Comp 12	Comp 13	Comp 14	Comp 15
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	18	18	17	17	18

Moisture						
Our Reference:	UNITS	71994-16	71994-17	71994-18	71994-19	71994-20
Your Reference	----------	Comp 16	Comp 17	Comp 18	Comp 19	Comp 20
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	18	19	19	21	16

Moisture						
Our Reference:	UNITS	71994-21	71994-22	71994-23	71994-24	71994-25
Your Reference	----------	Comp 21	Comp 22	Comp 23	Comp 24	Comp 25
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	17	18	20	21	17

Moisture						
Our Reference:	UNITS	71994-26	71994-27	71994-28	71994-29	71994-30
Your Reference	----------	Comp 26	Comp 27	Comp 28	Comp 29	Comp 30
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	18	18	18	18	20

Moisture						
Our Reference:	UNITS	71994-31	71994-32	71994-33	71994-34	71994-35
Your Reference	----------	Comp 31	Comp 32	Comp 33	Comp 34	Comp 35
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	21	19	21	17	22

Moisture						
Our Reference:	UNITS	71994-36	71994-37	71994-38	71994-39	71994-40
Your Reference	----------	Comp 36	Comp 37	Comp 38	Comp 39	Comp 40
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	16	17	19	17	18

Moisture						
Our Reference:	UNITS	71994-41	71994-42	71994-43	71994-44	71994-45
Your Reference	----------	Comp 41	Comp 42	Comp 43	Comp 44	Comp 45
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	19	19	20	22	19

Moisture						
Our Reference:	UNITS	71994-46	71994-47	71994-48	71994-49	71994-50
Your Reference	----------	Comp 46	Comp 47	Comp 48	Comp 49	Comp 50
Date Sampled	----------	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12	12-17/04/12
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	18	17	22	16	23

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	71994-51 Comp 51 12-17/04/12 Soil	71994-52 Comp 52 12-17/04/12 Soil	71994-53 Intra Dup 1 12-17/04/12 Soil	71994-54 Intra Dup 2 12-17/04/12 Soil
Date prepared	-	20/04/12	20/04/12	20/04/12	20/04/12
Date analysed	-	23/04/12	23/04/12	23/04/12	23/04/12
Moisture	%	21	22	19	16

Method ID	Methodology Summary
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2012	71994-1	20/04/2012 || 20/04/2012	LCS-8	20/04/2012
Date analysed	-			21/04/2012	71994-1	21/04/2012 || 21/04/2012	LCS-8	21/04/2012
HCB	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	87%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	66%
Heptachlor	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	60%
delta-BHC	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	86%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	91%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	87%
Dieldrin	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	99%
Endrin	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	79%
pp-DDD	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	97%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	LCS-8	85%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-005	82	71994-1	88 || 88 || RPD: 0	LCS-8	81%

Client Reference: 00030337.01

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2012	71994-1	20/04/2012 || 20/04/2012	LCS-8	20/04/2012
Date analysed	-			21/04/2012	71994-1	21/04/2012 || 21/04/2012	LCS-8	21/04/2012
Diazinon	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	LCS-8	87%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	LCS-8	94%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	71994-1	<0.1 || <0.1	LCS-8	98%
Surrogate TCLMX	%		Org-008	82	71994-1	88 || 88 || RPD: 0	LCS-8	81%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			20/04/2012	71994-1	20/04/2012 || 20/04/2012	LCS-1	20/04/2012
Date analysed	-			20/04/2012	71994-1	20/04/2012 || 20/04/2012	LCS-1	20/04/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	71994-1	7 || 5 || RPD: 33	LCS-1	88%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	71994-1	<0.5 || <0.5	LCS-1	97%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	71994-1	21 || 19 || RPD: 10	LCS-1	94%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	71994-1	70 || 29 || RPD: 83	LCS-1	95%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	71994-1	30 || 34 || RPD: 12	LCS-1	90%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	71994-1	<0.1 || <0.1	LCS-1	116%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	71994-1	11 || 13 || RPD: 17	LCS-1	93%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	71994-1	63 || 69 || RPD: 9	LCS-1	92%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-11	20/04/2012 || 20/04/2012	LCS-7	20/04/2012
Date analysed	-	71994-11	21/04/2012 || 21/04/2012	LCS-7	21/04/2012
HCB	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	71994-11	<0.1 || <0.1	LCS-7	78%
gamma-BHC	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	71994-11	<0.1 || <0.1	LCS-7	68%
Heptachlor	mg/kg	71994-11	<0.1 || <0.1	LCS-7	70%
delta-BHC	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	71994-11	<0.1 || <0.1	LCS-7	74%
Heptachlor Epoxide	mg/kg	71994-11	<0.1 || <0.1	LCS-7	80%
gamma-Chlordane	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	71994-11	<0.1 || <0.1	LCS-7	75%
Dieldrin	mg/kg	71994-11	<0.1 || <0.1	LCS-7	86%
Endrin	mg/kg	71994-11	<0.1 || <0.1	LCS-7	77%
pp-DDD	mg/kg	71994-11	<0.1 || <0.1	LCS-7	82%
Endosulfan II	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	71994-11	<0.1 || <0.1	LCS-7	77%
Methoxychlor	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	71994-11	83 || 84 || RPD: 1	LCS-7	75%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-11	20/04/2012 || 20/04/2012	LCS-7	20/04/2012
Date analysed	-	71994-11	21/04/2012 || 21/04/2012	LCS-7	21/04/2012
Diazinon	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	71994-11	<0.1 || <0.1	LCS-7	103%
Fenitrothion	mg/kg	71994-11	<0.1 || <0.1	LCS-7	113%
Bromophos-ethyl	mg/kg	71994-11	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	71994-11	<0.1 || <0.1	LCS-7	114%
Surrogate TCLMX	%	71994-11	83 || 84 || RPD: 1	LCS-7	83%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	71994-11	20/04/2012 || 20/04/2012	LCS-2	20/04/2012
Date analysed	-	71994-11	20/04/2012 || 20/04/2012	LCS-2	20/04/2012
Arsenic	mg/kg	71994-11	8 || 8 || RPD: 0	LCS-2	91%
Cadmium	mg/kg	71994-11	<0.5 || <0.5	LCS-2	100%
Chromium	mg/kg	71994-11	20 || 21 || RPD: 5	LCS-2	99%
Copper	mg/kg	71994-11	30 || 32 || RPD: 6	LCS-2	99%
Lead	mg/kg	71994-11	23 || 23 || RPD: 0	LCS-2	94%
Mercury	mg/kg	71994-11	<0.1 || <0.1	LCS-2	112%
Nickel	mg/kg	71994-11	11 || 10 || RPD: 10	LCS-2	98%
Zinc	mg/kg	71994-11	48 || 50 || RPD: 4	LCS-2	97%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-21	20/04/2012 || 20/04/2012	LCS-9	20/04/2012
Date analysed	-	71994-21	21/04/2012 || 21/04/2012	LCS-9	21/04/2012
HCB	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	71994-21	<0.1 || <0.1	LCS-9	98%
gamma-BHC	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	71994-21	<0.1 || <0.1	LCS-9	80%
Heptachlor	mg/kg	71994-21	<0.1 || <0.1	LCS-9	87%
delta-BHC	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	71994-21	<0.1 || <0.1	LCS-9	78%
Heptachlor Epoxide	mg/kg	71994-21	<0.1 || <0.1	LCS-9	99%
gamma-Chlordane	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	71994-21	0.2 || 0.1 || RPD: 67	LCS-9	111%
Dieldrin	mg/kg	71994-21	<0.1 || <0.1	LCS-9	107%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endrin	mg/kg	71994-21	<0.1 || <0.1	LCS-9	95%
pp-DDD	mg/kg	71994-21	<0.1 || <0.1	LCS-9	82%
Endosulfan II	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	71994-21	<0.1 || <0.1	LCS-9	93%
Methoxychlor	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	71994-21	91 || 96 || RPD: 5	LCS-9	69%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-21	20/04/2012 || 20/04/2012	LCS-9	20/04/2012
Date analysed	-	71994-21	21/04/2012 || 21/04/2012	LCS-9	21/04/2012
Diazinon	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	71994-21	<0.1 || <0.1	LCS-9	109%
Fenitrothion	mg/kg	71994-21	<0.1 || <0.1	LCS-9	120%
Bromophos-ethyl	mg/kg	71994-21	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	71994-21	<0.1 || <0.1	LCS-9	123%
Surrogate TCLMX	%	71994-21	91 || 76 || RPD: 18	LCS-9	84%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	71994-21	20/04/2012 || 20/04/2012	LCS-3	20/04/2012
Date analysed	-	71994-21	20/04/2012 || 20/04/2012	LCS-3	20/04/2012
Arsenic	mg/kg	71994-21	10 || 10 || RPD: 0	LCS-3	92%
Cadmium	mg/kg	71994-21	<0.5 || <0.5	LCS-3	100%
Chromium	mg/kg	71994-21	21 || 24 || RPD: 13	LCS-3	98%
Copper	mg/kg	71994-21	32 || 34 || RPD: 6	LCS-3	98%
Lead	mg/kg	71994-21	17 || 19 || RPD: 11	LCS-3	93%
Mercury	mg/kg	71994-21	<0.1 || <0.1	LCS-3	93%
Nickel	mg/kg	71994-21	7 || 7 || RPD: 0	LCS-3	98%
Zinc	mg/kg	71994-21	36 || 36 || RPD: 0	LCS-3	96%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-31	20/04/2012 || 20/04/2012	71994-2	20/04/2012
Date analysed	-	71994-31	21/04/2012 || 21/04/2012	71994-2	21/04/2012
HCB	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	71994-31	<0.1 || <0.1	71994-2	78%
gamma-BHC	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	71994-31	<0.1 || <0.1	71994-2	68%
Heptachlor	mg/kg	71994-31	<0.1 || <0.1	71994-2	72%
delta-BHC	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	71994-31	<0.1 || <0.1	71994-2	75%
Heptachlor Epoxide	mg/kg	71994-31	<0.1 || <0.1	71994-2	81%
gamma-Chlordane	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	71994-31	0.4 || 0.7 || RPD: 55	71994-2	79%
Dieldrin	mg/kg	71994-31	<0.1 || <0.1	71994-2	80%
Endrin	mg/kg	71994-31	<0.1 || <0.1	71994-2	80%
pp-DDD	mg/kg	71994-31	<0.1 || <0.1	71994-2	82%
Endosulfan II	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	71994-31	<0.1 || <0.1	71994-2	79%
Methoxychlor	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	71994-31	92 || 89 || RPD: 3	71994-2	87%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-31	20/04/2012 || 20/04/2012	71994-2	20/04/2012
Date analysed	-	71994-31	21/04/2012 || 21/04/2012	71994-2	21/04/2012
Diazinon	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	71994-31	<0.1 || <0.1	71994-2	102%
Fenitrothion	mg/kg	71994-31	<0.1 || <0.1	71994-2	111%
Bromophos-ethyl	mg/kg	71994-31	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	71994-31	<0.1 || <0.1	71994-2	110%
Surrogate TCLMX	%	71994-31	92 || 89 || RPD: 3	71994-2	83%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	71994-31	20/04/2012 || 20/04/2012	LCS-4	20/04/2012
Date analysed	-	71994-31	20/04/2012 || 20/04/2012	LCS-4	20/04/2012
Arsenic	mg/kg	71994-31	8 || 8 || RPD: 0	LCS-4	92%
Cadmium	mg/kg	71994-31	<0.5 || <0.5	LCS-4	101%
Chromium	mg/kg	71994-31	24 || 20 || RPD: 18	LCS-4	100%
Copper	mg/kg	71994-31	26 || 27 || RPD: 4	LCS-4	100%
Lead	mg/kg	71994-31	29 || 62 || RPD: 73	LCS-4	94%
Mercury	mg/kg	71994-31	<0.1 || <0.1	LCS-4	109%
Nickel	mg/kg	71994-31	8 || 9 || RPD: 12	LCS-4	100%
Zinc	mg/kg	71994-31	48 || 83 || RPD: 53	LCS-4	96%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-41	20/04/2012 || 20/04/2012	71994-22	20/04/2012
Date analysed	-	71994-41	21/04/2012 || 21/04/2012	71994-22	21/04/2012
HCB	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	71994-41	<0.1 || <0.1	71994-22	78%
gamma-BHC	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	71994-41	<0.1 || <0.1	71994-22	68%
Heptachlor	mg/kg	71994-41	<0.1 || <0.1	71994-22	72%
delta-BHC	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	71994-41	<0.1 || <0.1	71994-22	75%
Heptachlor Epoxide	mg/kg	71994-41	<0.1 || <0.1	71994-22	81%
gamma-Chlordane	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	71994-41	0.1 || <0.1	71994-22	79%
Dieldrin	mg/kg	71994-41	<0.1 || <0.1	71994-22	80%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endrin	mg/kg	71994-41	<0.1 || <0.1	71994-22	80%
pp-DDD	mg/kg	71994-41	<0.1 || <0.1	71994-22	82%
Endosulfan II	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	71994-41	<0.1 || <0.1	71994-22	79%
Methoxychlor	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	71994-41	90 || 87 || RPD: 3	71994-22	89%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-41	20/04/2012 || 20/04/2012	71994-22	20/04/2012
Date analysed	-	71994-41	21/04/2012 || 21/04/2012	71994-22	21/04/2012
Diazinon	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	71994-41	<0.1 || <0.1	71994-22	82%
Fenitrothion	mg/kg	71994-41	<0.1 || <0.1	71994-22	85%
Bromophos-ethyl	mg/kg	71994-41	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	71994-41	<0.1 || <0.1	71994-22	91%
Surrogate TCLMX	%	71994-41	90 || 87 || RPD: 3	71994-22	77%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	71994-41	20/04/2012 || 20/04/2012	71994-2	20/04/2012
Date analysed	-	71994-41	20/04/2012 || 20/04/2012	71994-2	20/04/2012
Arsenic	mg/kg	71994-41	6 || 5 || RPD: 18	71994-2	88%
Cadmium	mg/kg	71994-41	<0.5 || <0.5	71994-2	87%
Chromium	mg/kg	71994-41	19 || 19 || RPD: 0	71994-2	92%
Copper	mg/kg	71994-41	35 || 36 || RPD: 3	71994-2	105%
Lead	mg/kg	71994-41	19 || 18 || RPD: 5	71994-2	82%
Mercury	mg/kg	71994-41	<0.1 || <0.1	71994-2	106%
Nickel	mg/kg	71994-41	14 || 15 || RPD: 7	71994-2	90%
Zinc	mg/kg	71994-41	53 || 55 || RPD: 4	71994-2	87%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-51	20/04/2012 || 20/04/2012	71994-42	20/04/2012
Date analysed	-	71994-51	21/04/2012 || 21/04/2012	71994-42	21/04/2012
HCB	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	71994-51	<0.1 || <0.1	71994-42	92%
gamma-BHC	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	71994-51	<0.1 || <0.1	71994-42	75%
Heptachlor	mg/kg	71994-51	<0.1 || <0.1	71994-42	81%
delta-BHC	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	71994-51	<0.1 || <0.1	71994-42	73%
Heptachlor Epoxide	mg/kg	71994-51	<0.1 || <0.1	71994-42	94%
gamma-Chlordane	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	71994-51	<0.1 || <0.1	71994-42	74%
Dieldrin	mg/kg	71994-51	<0.1 || <0.1	71994-42	99%
Endrin	mg/kg	71994-51	<0.1 || <0.1	71994-42	86%
pp-DDD	mg/kg	71994-51	<0.1 || <0.1	71994-42	79%
Endosulfan II	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	71994-51	<0.1 || <0.1	71994-42	81%
Methoxychlor	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	71994-51	87 || 92 || RPD: 6	71994-42	86%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	71994-51	20/04/2012 || 20/04/2012	71994-42	20/04/2012
Date analysed	-	71994-51	21/04/2012 || 21/04/2012	71994-42	22/04/2012
Diazinon	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	71994-51	<0.1 || <0.1	71994-42	103%
Fenitrothion	mg/kg	71994-51	<0.1 || <0.1	71994-42	109%
Bromophos-ethyl	mg/kg	71994-51	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	71994-51	<0.1 || <0.1	71994-42	112%
Surrogate TCLMX	%	71994-51	87 || 92 || RPD: 6	71994-42	87%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	71994-51	20/04/2012 || 20/04/2012	71994-22	20/04/2012
Date analysed	-	71994-51	20/04/2012 || 20/04/2012	71994-22	20/04/2012
Arsenic	mg/kg	71994-51	6 || 5 || RPD: 18	71994-22	97%
Cadmium	mg/kg	71994-51	<0.5 || <0.5	71994-22	94%
Chromium	mg/kg	71994-51	22 || 17 || RPD: 26	71994-22	105%
Copper	mg/kg	71994-51	44 || 43 || RPD: 2	71994-22	115%
Lead	mg/kg	71994-51	96 || 61 || RPD: 45	71994-22	98%
Mercury	mg/kg	71994-51	<0.1 || <0.1	71994-22	115%
Nickel	mg/kg	71994-51	16 || 17 || RPD: 6	71994-22	95%
Zinc	mg/kg	71994-51	220 || 170 || RPD: 26	71994-22	102%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	71994-42	20/04/2012
Date analysed	-	[NT]	[NT]	71994-42	20/04/2012
Arsenic	mg/kg	[NT]	[NT]	71994-42	82%
Cadmium	mg/kg	[NT]	[NT]	71994-42	83%
Chromium	mg/kg	[NT]	[NT]	71994-42	85%
Copper	mg/kg	[NT]	[NT]	71994-42	98%
Lead	mg/kg	[NT]	[NT]	71994-42	76%
Mercury	mg/kg	[NT]	[NT]	71994-42	112%
Nickel	mg/kg	[NT]	[NT]	71994-42	80%
Zinc	mg/kg	[NT]	[NT]	71994-42	79%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteriae has been exceeded for 71994-1 for Cu. Therefore a triplicate result has been issued as laboratory sample number 71994-55.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteriae has been exceeded for 71994-31 for Pb & Zn. Therefore a triplicate result has been issued as laboratory sample number 71994-56.

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

WSP - CHAIN OF CUSTODY

Client:	WSPT	**Client Project Name and Number:**	00030337.01
Project Mgr:	Peter Moore		
Sampler:	JM & JB	**PO No.:**	
Address:	41 McLaren Street North Sydney, 2060		
		Date results required:	STANDARD
Email:	josie.milner AND peter.moore@wspgroup	**Or choose:**	standard / 1 day / 2 day / 3 day
		Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone:	(02) 8925 6700 **Fax:**		

Sample Information				Tests Required												Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Metals (8)	OCPs	OPPs										Provide as much information about the sample as you can
46	Comp 46	12-17/4/12	Soil	X	X	X										
47	Comp 47	12-17/4/12	Soil	X	X	X										
48	Comp 48	12-17/4/12	Soil	X	X	X										
49	Comp 49	12-17/4/12	Soil	X	X	X										
50	Comp 50	12-17/4/12	Soil	X	X	X										
51	Comp 51	12-17/4/12	Soil	X	X	X										
52	Comp 52	12-17/4/12	Soil	X	X	X										
53	Intra Dup 1	12-17/4/12	Soil	X	X	X										
54	Intra Dup 2	12-17/4/12	Soil	X	X	X										
	Inter Dup 1	12-17/4/12	Soil	X	X	X	Please forward to ALS									
	Inter Dup 2 2	12-17/4/12	Soil	X	X	X	Please forward to ALS									
							Received by AS - Syd 20/4/12 17:30 10.2°C									

Environmental Division Sydney
Work Order
ES1209601

Telephone : +61-2-8784 8555

Relinquished by (company):	WSP	**Received by (company):**	ELS
Print Name:	Josie Milner	**Print Name:**	Peat
Date & Time:	19/04/2012	**Date & Time:**	19/4/12 17:00
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier
Page No:

71994

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **ES1209601**	Page	: 1 of 5
Client	: **WSP ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00030337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 00030337 01		
C-O-C number	: ----	Date Samples Received	: 20-APR-2012
Sampler	: ----	Issue Date	: 30-APR-2012
Site	: ----		
		No. of samples received	: 2
Quote number	: EN/036/11	No. of samples analysed	: 2

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Evie.Sidarta	Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics

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

- **EG005T: Poor precision was obtained for Chromium on sample ES1209405 #004 due to sample heterogeneity.**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	INTER DUP 1	INTER DUP 2	----	----	----
				Client sampling date / time	12-APR-2012 15:00	12-APR-2012 15:00	----	----	----
					ES1209601-001	ES1209601-002	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**18.1**	**17.0**	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**19**	**10**	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		**24**	**22**	----	----	----
Copper	7440-50-8	5	mg/kg		**22**	**43**	----	----	----
Lead	7439-92-1	5	mg/kg		**21**	**22**	----	----	----
Nickel	7440-02-0	2	mg/kg		**9**	**10**	----	----	----
Zinc	7440-66-6	5	mg/kg		**44**	**59**	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		**0.10**	**0.86**	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL				Client sample ID	INTER DUP 1	INTER DUP 2	----	----	----
				Client sampling date / time	12-APR-2012 15:00	12-APR-2012 15:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1209601-001	ES1209601-002	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		**80.0**	**96.4**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		**80.4**	**107**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	19.5	167.0
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.7	163.5

Environmental Division

QUALITY CONTROL REPORT

Work Order	: **ES1209601**	Page	: 1 of 7
Client	: **WSP ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00030337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 20-APR-2012
Sampler	: ----	Issue Date	: 30-APR-2012
Order number	: 00030337 01		
		No. of samples received	: 2
Quote number	: EN/036/11	No. of samples analysed	: 2

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

This 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 in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Evie.Sidarta	Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics

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.

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: 2271092)									
ES1209170-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	22.6	22.1	2.0	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 2275258)									
ES1209296-024	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	20	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES1209405-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	28	42	# 38.0	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	11	42.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	12	21.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2275259)									
ES1209296-024	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1209405-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2270811)									
ES1209199-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2270811) - continued									
ES1209199-001	Anonymous	EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2270811)									
ES1209199-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	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: 2275258)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	127	70	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	95.3	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	97.2	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	98.5	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	96.8	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	98.4	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	96.1	88.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2275259)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	78.7	67	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 2270811)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	60.8	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	59.4	115
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	59.8	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	59.8	118
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	65.8	114
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	65.6	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	67	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	65.6	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	60.7	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.8	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	57.3	120
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	67.4	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	67.5	114
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	112	63	121
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.1	117
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	65.3	116
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	74.3	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	63.6	119
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	110	58.4	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	63.6	117
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	101	50.4	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2270811)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	25.5	124
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	10.1	159

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: 2270811) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	95.4	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	102	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	98.2	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	64.8	111
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	61.4	123
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	111	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	29.8	137

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	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2275258)							
ES1209296-024	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	110	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	92.9	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.6	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.1	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	93.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2275259)							
ES1209296-024	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.6	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2270811)							
ES1209199-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	102	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	102	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	80.6	70	130
		EP068: Endrin	72-20-8	2 mg/kg	108	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	89.9	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2270811)							
ES1209199-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	106	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	105	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	90.2	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	86.2	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	75.9	70	130

Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1209601**	Page	: 1 of 5
Client	: WSP ENVIRONMENTAL	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00030337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 20-APR-2012
Sampler	: ----	Issue Date	: 30-APR-2012
Order number	: 00030337 01		
		No. of samples received	: 2
Quote number	: EN/036/11	No. of samples analysed	: 2

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

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)							
INTER DUP 1, INTER DUP 2	**12-APR-2012**	**----**	----	----	**23-APR-2012**	26-APR-2012	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
INTER DUP 1, INTER DUP 2	**12-APR-2012**	**26-APR-2012**	09-OCT-2012	✓	**26-APR-2012**	09-OCT-2012	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
INTER DUP 1, INTER DUP 2	**12-APR-2012**	**26-APR-2012**	10-MAY-2012	✓	**26-APR-2012**	10-MAY-2012	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
INTER DUP 1, INTER DUP 2	**12-APR-2012**	**23-APR-2012**	26-APR-2012	✓	**24-APR-2012**	02-JUN-2012	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
INTER DUP 1, INTER DUP 2	**12-APR-2012**	**23-APR-2012**	26-APR-2012	✓	**24-APR-2012**	02-JUN-2012	✓

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(where) 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	1	10	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	10	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	13	**15.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	14	**14.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	10	**10.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	10	**10.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	10	**10.0**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	13	**7.7**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	**7.1**	**5.0**	✓	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	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) 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 (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 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 (1999) Schedule B(3)
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 (1999) Schedule B(3) (Method 504,505)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES1209405-004	Anonymous	**Chromium**	7440-47-3	38.0 %	0-20%	**RPD exceeds LOR based limits**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

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

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

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

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client: WSPT - Managed by Hansen Yuncken	**Client Project Name and Number:** C00030337.01
Project Mgr: Peter Moore	
Sampler: AY	**PO No.:**
Address: 41 Mclaren Street Nth Sydney 2060	**Envirolab Services Quote No. :**
Email: josie.milner AND peter.moore@wspgroup.com	**Date results required:**
Phone: (02) 89256700 **Fax:**	**Or choose:** (standard) / 1 day / 2 day / 3 day
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	VOC dichloromethane	Hold													Provide as much information about the sample as you can
1	SS01	26·4·12	Soil	✓														*Targeted
2	SS02	26·4·12	Soil		✓													analyte is
																		dichloromethane
																		(Methylene Chloride)

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 72230
Date Received: 26/04
Time Received: 12:30
Received by: GS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company): WSP	**Received by (company):** ES	**Samples Received: Cool or Ambient (circle one)**	
Print Name: Josie Milner	**Print Name:**	**Temperature Recieved at:**	**(if applicable)**
Date & Time: 26·4·12 11am	**Date & Time:** 26/04 12:30	**Transported by: Hand delivered / courier**	
Signature:	**Signature:**	**Page No:**	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environment Energy
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Peter Moore / Josie Milner

Sample log in details:

Your reference:	**00030337.01**
Envirolab Reference:	**72230**
Date received:	26/04/12
Date results expected to be reported:	**3/05/12**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	2 Soils
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice Pack
Sampling Date Provided:	Yes

Comments:

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

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 72230

Client:
WSP Environment Energy
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Peter Moore / Josie Milner

Sample log in details:

Your Reference:	**00030337.01**		
No. of samples:	2 Soils		
Date samples received / completed instructions received	26/04/12	/	26/04/12

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	3/05/12	/	30/04/12
Date of Preliminary Report:	Not issued		

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Results Approved By:

Nancy Zhang
Chemist

Hinoko Miyazaki
Chemist

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	72230-1 SS01 26/04/12 Soil
Date extracted	-	27/04/2012
Date analysed	-	27/04/2012
methylene chloride	mg/kg	<10
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	72230-1 SS01 26/04/12 Soil
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	100
Surrogate aaa-Trifluorotoluene	%	86
Surrogate Toluene-d_8	%	75
Surrogate 4-Bromofluorobenzene	%	81

Moisture		
Our Reference:	UNITS	72230-1
Your Reference	----------	SS01
Date Sampled	----------	26/04/12
Type of sample		Soil
Date prepared	-	27/04/12
Date analysed	-	30/04/12
Moisture	%	22

Method ID	Methodology Summary
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			27/04/2012	[NT]	[NT]	LCS-1	27/04/2012
Date analysed	-			27/04/2012	[NT]	[NT]	LCS-1	27/04/2012
methylene chloride	mg/kg	10	Org-014	<10	[NT]	[NT]	[NR]	[NR]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	82%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	90%
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	77%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	78%
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	70%
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	75%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	71%
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	76%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	110	[NT]	[NT]	LCS-1	100%
Surrogate aaa-Trifluorotoluene	%		Org-014	104	[NT]	[NT]	LCS-1	86%
Surrogate Toluene-d_8	%		Org-014	82	[NT]	[NT]	LCS-1	75%
Surrogate 4-Bromofluorobenzene	%		Org-014	80	[NT]	[NT]	LCS-1	81%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client: WSPT	**Client Project Name and Number:** 30337.01
Project Mgr: Peter Moore	
Sampler: JMilner	**PO No.:**
Address: 41 McLaren Street North Sydney 2060	**Envirolab Services Quote No. :**
Email: josie.milner AND peter.moore@wspgroup.com	**Date results required:**
Phone: (02) 89256700 **Fax:**	**Or choose:** (standard) / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharge applies*

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Metals (8)	OCPs	OPPs	Combo 6											Provide as much information about the sample as you can
1	Comp 53	16.5.12	Soil	✓	✓	✓												
2	Comp 54	↓	↓	✓	✓	✓												
3	Comp 55			✓	✓	✓												
4	Intra Dup 3			✓	✓	✓												
	Inter Dup 3	↓	↓	✓	✓	✓	Please forward to ALS											
5	SS02	16.5.12	Soil				✓											

Envirolab Services
~~12 Ashley St~~
Chatswood NSW 2067
~~Ph: (02) 9910 6200~~

~~Job No:~~ 73412

Date Received: 16/5/12
Time Received: 9:30
~~Received by:~~ PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: ~~Intact/Broken/None~~

Relinquished by (company): WSP	**Received by (company):** ELS	**Samples Received: Cool or Ambient (circle one)**
Print Name: Josie Milner	**Print Name:** Prat	**Temperature Recieved at:** **(if applicable)**
Date & Time: ~~16/5/12~~ 17.5.12 8:30am	**Date & Time:** 16/5/12 9:30	**Transported by: Hand delivered / courier**
Signature:	**Signature:** PT	**Page No:**

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environment Energy
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Josie Milner / Peter Moore

Sample log in details:

Your reference:	**30337.01**
Envirolab Reference:	**73412**
Date received:	17/05/12
Date results expected to be reported:	**24/05/12**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	5 Soils
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

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

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 73412

Client:
WSP Environment Energy
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Josie Milner / Peter Moore

Sample log in details:

Your Reference:	**30337.01**		
No. of samples:	5 Soils		
Date samples received / completed instructions received	17/05/12	/	17/05/12

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	24/05/12	/	23/05/12
Date of Preliminary Report:	Not issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Rhian Morgan
Reporting Supervisor

Hinoko Miyazaki
Chemist

Alex MacLean
Chemist

Jeremy Faircloth
Chemist

vTRH & BTEX in Soil		
Our Reference:	UNITS	73412-5
Your Reference	----------	SS02
Date Sampled	----------	16/05/2012
Type of sample		Soil
Date extracted	-	18/05/2012
Date analysed	-	19/05/2012
vTRH C_6 - C_9	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	118

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	73412-5
Your Reference	----------	SS02
Date Sampled	----------	16/05/2012
Type of sample		Soil
Date extracted	-	18/05/2012
Date analysed	-	19/05/2012
TRHC$_{10}$ - C$_{14}$	mg/kg	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100
Surrogate o-Terphenyl	%	90

PAHs in Soil		
Our Reference:	UNITS	73412-5
Your Reference	----------	SS02
Date Sampled	----------	16/05/2012
Type of sample		Soil
Date extracted	-	18/05/2012
Date analysed	-	19/05/2012
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Surrogate p-Terphenyl-d_{14}	%	113

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	73412-1 Comp 53 16/05/2012 Soil	73412-2 Comp 54 16/05/2012 Soil	73412-3 Comp 55 16/05/2012 Soil	73412-4 Intra Dup 3 16/05/2012 Soil	73412-5 SS02 16/05/2012 Soil
Date extracted	-	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
Date analysed	-	20/05/2012	20/05/2012	20/05/2012	20/05/2012	20/05/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	0.1	0.2	0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	105	104	105	104	107

Organophosphorus Pesticides						
Our Reference:	UNITS	73412-1	73412-2	73412-3	73412-4	73412-5
Your Reference	----------	Comp 53	Comp 54	Comp 55	Intra Dup 3	SS02
Date Sampled	----------	16/05/2012	16/05/2012	16/05/2012	16/05/2012	16/05/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
Date analysed	-	20/05/2012	20/05/2012	20/05/2012	20/05/2012	20/05/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	105	104	105	104	107

PCBs in Soil		
Our Reference:	UNITS	73412-5
Your Reference	----------	SS02
Date Sampled	----------	16/05/2012
Type of sample		Soil
Date extracted	-	18/05/2012
Date analysed	-	20/05/2012
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Surrogate TCLMX	%	107

Acid Extractable metals in soil						
Our Reference:	UNITS	73412-1	73412-2	73412-3	73412-4	73412-5
Your Reference	----------	Comp 53	Comp 54	Comp 55	Intra Dup 3	SS02
Date Sampled	----------	16/05/2012	16/05/2012	16/05/2012	16/05/2012	16/05/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
Date analysed	-	18/05/2012	18/05/2012	18/05/2012	18/05/2012	18/05/2012
Arsenic	mg/kg	8	7	10	7	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	17	16	16	16	17
Copper	mg/kg	27	26	50	22	21
Lead	mg/kg	23	21	29	19	22
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	9	8	6	11
Zinc	mg/kg	43	48	110	31	93

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	73412-1 Comp 53 16/05/2012 Soil	73412-2 Comp 54 16/05/2012 Soil	73412-3 Comp 55 16/05/2012 Soil	73412-4 Intra Dup 3 16/05/2012 Soil	73412-5 SS02 16/05/2012 Soil
Date prepared	-	18/05/12	18/05/12	18/05/12	18/05/12	18/05/12
Date analysed	-	21/05/12	21/05/12	21/05/12	21/05/12	21/05/12
Moisture	%	17	15	19	17	15

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			19/05/2012	[NT]	[NT]	LCS-1	19/05/2012
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	128%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	114%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	125%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	134%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	133%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	136%
Surrogate aaa-Trifluorotoluene	%		Org-016	123	[NT]	[NT]	LCS-1	127%
QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			19/05/2012	[NT]	[NT]	LCS-1	19/05/2012
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	109%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	117%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	107%
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	LCS-1	117%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			19/05/2012	[NT]	[NT]	LCS-1	19/05/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	103%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	102%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	100%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	100%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	105%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	102%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-1	94%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	99	[NT]	[NT]	LCS-1	105%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			20/05/2012	[NT]	[NT]	LCS-1	20/05/2012
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	100%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	100%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	102%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	96%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	102%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	99%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	107%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	105%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	110%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	101%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-005	103	[NT]	[NT]	LCS-1	101%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			20/05/2012	[NT]	[NT]	LCS-1	20/05/2012
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	110%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	128%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	123%
Surrogate TCLMX	%		Org-008	103	[NT]	[NT]	LCS-1	107%
QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			20/05/2012	[NT]	[NT]	LCS-1	20/05/2012
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-1	101%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	103	[NT]	[NT]	LCS-1	99%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Date analysed	-			18/05/2012	[NT]	[NT]	LCS-1	18/05/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	85%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-1	90%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	91%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	91%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	86%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	99%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	89%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	92%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client: WSPT	**Client Project Name and Number:** 30337.01
Project Mgr: Peter Moore	
Sampler: JMilner	**PO No.:**
Address: 41 McLaren Street North Sydney 2060	**Envirolab Services Quote No. :**
Email: josie.milner AND peter.moore@wspgroup.com	**Date results required:**
Phone: (02) 89256700 **Fax:**	**Or choose:** (standard) / 1 day / 2 day / 3 day
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Metals (8)	OCPs	OPPs	Combo6											Provide as much information about the sample as you can
1	Comp 53	16.5.12	Soil	✓	✓	✓												
2	Comp 54	↓	↓	✓	✓	✓												
3	Comp 55			✓	✓	✓												
4	Intra Dup 3			✓	✓	✓												
	Inter Dup 3	↓	↓	✓	✓	✓	Please forward to ALS											
5	SS02	16.5.12	Soil				✓											

Environmental Division
Sydney
Work Order
ES1212293

Telephone : +61-2-8784 8555

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: ~~73412~~

Date Received: 16/5/12
Time Received: 9:30
Received by: PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company): WSP	**Received by (company):** ELS
Print Name: Josie Milner	**Print Name:** Prat
Date & Time: ~~16/8/12~~ 17.5.12 8.30am	**Date & Time:** 16/5/12 9:30
Signature:	**Signature:** PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier
Page No:

Received by ALS Sydney 17-5-12 15:45 198

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1212293**		
Client	: **WSP ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 30337 01	Page	: 1 of 2
Order number	: 30337 01		
C-O-C number	: ----	Quote number	: EM2011WSPENV0312 (EN/036/11)
Site	: ----		
Sampler	: JMILNER	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 17-MAY-2012	Issue Date	: 28-MAY-2012
Client Requested Due Date	: 25-MAY-2012	Scheduled Reporting Date	: **25-MAY-2012**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 19.8'C - Ice bricks present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 1
Security Seal	: Intact.	No. of samples analysed	: 1

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
- **Samples received in appropriately pretreated and preserved containers.**
- **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 neccessary 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.
If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
ES1212293-001	16-MAY-2012 15:00	INTER DUP3	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES ADDRESS		
- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com
JOSIE MILNER		
- *AU Certificate of Analysis - NATA	Email	josie.milner@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	josie.milner@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	josie.milner@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT	Email	josie.milner@wspgroup.com
- Chain of Custody (CoC)	Email	josie.milner@wspgroup.com
- EDI Format - ENMRG	Email	josie.milner@wspgroup.com
- EDI Format - ESDAT	Email	josie.milner@wspgroup.com
- EDI Format - XTab	Email	josie.milner@wspgroup.com
MR PETER MOORE		
- *AU Certificate of Analysis - NATA (COA)	Email	peter.moore@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	peter.moore@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	peter.moore@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	peter.moore@wspgroup.com
- Chain of Custody (CoC) (COC)	Email	peter.moore@wspgroup.com
- EDI Format - ENMRG (ENMRG)	Email	peter.moore@wspgroup.com
- EDI Format - ESDAT (ESDAT)	Email	peter.moore@wspgroup.com
- EDI Format - XTab (XTAB)	Email	peter.moore@wspgroup.com

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **ES1212293**	Page	: 1 of 5
Client	: **WSP ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 30337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 30337 01		
C-O-C number	: ----	Date Samples Received	: 17-MAY-2012
Sampler	: JMILNER	Issue Date	: 28-MAY-2012
Site	: ----		
		No. of samples received	: 1
Quote number	: EN/036/11	No. of samples analysed	: 1

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Ramal Ganeshan		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

- **EG-005T:LCS recovery for Copper and Zinc falls outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required.**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: INTER DUP3	----	----	----	----
				Client sampling date / time: 16-MAY-2012 15:00	----	----	----	----
				ES1212293-001	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**17.3**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**12**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**23**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**37**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**32**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**12**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**63**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	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	----	----	----	----
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	**0.53**	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	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	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: SOIL				Client sample ID	INTER DUP3	----	----	----	----
				Client sampling date / time	16-MAY-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1212293-001	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
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	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		**91.9**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		**92.8**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	19.5	167.0
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.7	163.5

Environmental Division

QUALITY CONTROL REPORT

Work Order	: **ES1212293**	Page	: 1 of 9
Client	: **WSP ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 30337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-MAY-2012
Sampler	: JMILNER	Issue Date	: 28-MAY-2012
Order number	: 30337 01		
		No. of samples received	: 1
Quote number	: EN/036/11	No. of samples analysed	: 1

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

This 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 in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Ramal Ganeshan		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.

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: 2317794)									
ES1212257-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.9	15.8	6.2	0% - 50%
ES1212293-001	INTER DUP3	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.3	16.1	7.4	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2317246)									
ES1212498-015	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	17	9.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	46	42	8.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	30	28	6.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	174	181	4.0	0% - 20%
ES1212498-019	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	22	38.6	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	7	9	26.7	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	9	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	32	105	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	14	14.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	20	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2317245)									
ES1212498-015	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.3	0.0	No Limit
ES1212498-019	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2313421)									
ES1212470-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	5.57	5.47	1.9	0% - 20%
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2313421) - continued									
ES1212470-001	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	1.02	0.94	8.4	0% - 50%
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	3.8	3.9	3.0	0% - 50%
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES1212475-005	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2313421)									
ES1212470-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2313421) - continued									
ES1212470-001	Anonymous	EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES1212475-005	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	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: 2317246)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	103	70	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.9	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	108	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	# 119	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	98.9	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	108	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	# 114	88.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2317245)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	116	67	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 2313421)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	60.8	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	59.4	115
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	59.8	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	59.8	118
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	65.8	114
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	65.6	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	67	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	106	65.6	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	60.7	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	65.8	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	57.3	120
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.1	67.4	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.5	114
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	63	121
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.1	117
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	65.3	116
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	63.6	119
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	102	58.4	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	110	63.6	117
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	108	50.4	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2313421)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.5	25.5	124
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	10.1	159

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2313421) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	105	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	108	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	106	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	105	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	112	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.8	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	108	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	64.8	111
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	61.4	123
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	103	29.8	137

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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 2317246)							
ES1212498-015	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.9	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.8	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.6	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	112	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.7	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.8	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	88.5	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2317245)							
ES1212498-015	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	76.2	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2313421)							
ES1212470-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	104	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	70	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: Spike Recovery (%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2313421) - continued							
ES1212470-001	Anonymous	EP068: Aldrin	309-00-2	0.5 mg/kg	101	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	86.2	70	130
		EP068: Endrin	72-20-8	2 mg/kg	97.4	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	94.1	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2313421)							
ES1212470-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	101	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.4	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	96.1	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	93.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	93.1	70	130

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are 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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPDs (%) Value	RPDs (%) Control Limit
EG005T: Total Metals by ICP-AES (QCLot: 2317246)										
ES1212498-015	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.9	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.8	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	91.6	----	70	130	----	----
		EG005T: Copper	7440-50-8	250 mg/kg	112	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	94.7	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	95.8	----	70	130	----	----
		EG005T: Zinc	7440-66-6	250 mg/kg	88.5	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2317245)										
ES1212498-015	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	76.2	----	70	130	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 2313421)										
ES1212470-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	104	----	70	130	----	----
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	----	70	130	----	----
		EP068: Aldrin	309-00-2	0.5 mg/kg	101	----	70	130	----	----
		EP068: Dieldrin	60-57-1	0.5 mg/kg	86.2	----	70	130	----	----
		EP068: Endrin	72-20-8	2 mg/kg	97.4	----	70	130	----	----
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	94.1	----	70	130	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2313421)										
ES1212470-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	101	----	70	130	----	----
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.4	----	70	130	----	----

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2313421) - continued										
ES1212470-001	Anonymous	EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	96.1	----	70	130	----	----
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	93.6	----	70	130	----	----
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	93.1	----	70	130	----	----

Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1212293**	Page	: 1 of 5
Client	: WSP ENVIRONMENTAL	Laboratory	: Environmental Division Sydney
Contact	: JOSIE MILNER	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: josie.milner@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 30337 01	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-MAY-2012
Sampler	: JMILNER	Issue Date	: 28-MAY-2012
Order number	: 30337 01		
		No. of samples received	: 1
Quote number	: EN/036/11	No. of samples analysed	: 1

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

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)							
INTER DUP3	**16-MAY-2012**	**----**	----	----	**23-MAY-2012**	30-MAY-2012	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
INTER DUP3	**16-MAY-2012**	**22-MAY-2012**	12-NOV-2012	✓	**24-MAY-2012**	12-NOV-2012	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
INTER DUP3	**16-MAY-2012**	**22-MAY-2012**	13-JUN-2012	✓	**25-MAY-2012**	13-JUN-2012	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
INTER DUP3	**16-MAY-2012**	**21-MAY-2012**	30-MAY-2012	✓	**23-MAY-2012**	30-JUN-2012	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
INTER DUP3	**16-MAY-2012**	**21-MAY-2012**	30-MAY-2012	✓	**23-MAY-2012**	30-JUN-2012	✓

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(where) 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	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	13	**15.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	13	**7.7**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	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	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) 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 (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 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 (1999) Schedule B(3)
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 (1999) Schedule B(3) (Method 504,505)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EG005T: Total Metals by ICP-AES	2743950-002	----	**Copper**	7440-50-8	119 %	90.1-114%	**Recovery greater than upper control limit**
EG005T: Total Metals by ICP-AES	2743950-002	----	**Zinc**	7440-66-6	114 %	88.9-112%	**Recovery greater than upper control limit**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

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

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

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

Appendix H – WSP Soil Bore Records

Date: 12/4/12

BH01

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH01_0.1
0.4 - 1.5	Silty Clay. Orange. Dry. Fine gravel inclusions.	BH01_0.5 BH01_1.5

EOH= 1.5

BH02

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Wet. Root inclusions. Soft.	BH02_0.1
0.3 - 1.5	Silty Clay. Orange/red. Moist. Soft. From 1.0m: Light brown. Dry	BH02_0.5 BH02_1.5

EOH= 1.5

BH03

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Wet. Root inclusions. Soft.	BH03_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH03_0.5 BH03_1.5

EOH= 1.5

BH04

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH04_0.1 BH04_0.5
0.6 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH04_1.5

EOH= 1.5

BH05

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH05_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH05_0.5 BH05_1.5

EOH= 1.5

BH06

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH06_0.1
0.3 - 1.5	Silty Clay. Orange. Moist. Stiff.	BH06_0.5 BH06_1.5

EOH= 1.5

BH07

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH07_0.1
0.3 - 1.5	Silty Clay. Orange. Moist. Stiff. From 1.0m: Dry. Crumbly.	BH07_0.5 BH07_1.5

EOH= 1.5

BH08

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH08_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH08_0.5 BH08_1.5

EOH= 1.5

BH09

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil	BH09_0.1
	Silty Clay. Dark red/brown. Moist. Root inclusions. Soft.	BH09_0.5
0.6 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH09_1.5

EOH= 1.5

BH10

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH10_0.1
	Silty Clay. Dark red/brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH10_0.5
		BH10_1.5

EOH= 1.5

BH11

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH11_0.1
	Silty Clay. Dark red/brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH11_0.5
		BH11_1.5

EOH= 1.5

BH12

Depth	Soil Description	Sample ID
	Surface = grass	
	Disused metal pipe - 5cm diameter.	
0.0 - 0.3	Topsoil	BH12_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Brown. Moist. Stiff.	BH12_0.5
	From 1.0m: Light brown. Dry	BH12_1.5

EOH= 1.5

BH13

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Wet. Root inclusions. Soft.	BH13_0.1
0.3 - 1.5	Silty Clay. Orange. Dry. Crumbly	BH13_0.5 BH13_1.5

EOH= 1.5

BH14

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown/red. Wet. Root inclusions. Soft.	BH14_0.1
0.3 - 1.5	Silty Clay. Mottled orange/grey. Dry/moist. Crumbly.	BH14_0.5 BH14_1.5

EOH= 1.5

BH15

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown/red. Moist. Root inclusions. Firm.	BH15_0.1
0.3 - 1.5	Silty Clay. Orange. Dry. Crumbly.	BH15_0.5 BH15_1.5

EOH= 1.5

BH16

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil Silty Clay. Dark brown/red. Moist. Root inclusions. Firm.	BH16_0.1
0.4 - 1.5	Silty Clay. Light brown/grey. Dry. Crumbly.	BH16_0.5 BH16_1.5

EOH= 1.5

BH17

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH17_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	
	Charcoal inclusions from 0.3 - 0.6m.	BH17_0.5
0.6 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH07_1.5

EOH= 1.5

BH18

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH18_0.1
	Silty Clay. Red/brown. Moist. Root inclusions. Soft-firm.	
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist	BH18_0.5
		BH18_1.5

EOH= 1.5

BH19

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH19_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH19_0.5
	From 1.0m: Mottled red/grey	BH19_1.5

EOH= 1.5

BH20

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH20_0.1
	Silty Clay. Brown. Moist. Root inclusions. Firm.	
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff.	BH20_0.5
		BH20_1.5

EOH= 1.5

BH21

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH21_0.1
0.3 - 1.5	Silty Clay. Red/orange. Dry. Crumbly.	BH21_0.5 BH21_1.5

EOH= 1.5

BH22

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Red. Moist. Root inclusions. Firm.	BH22_0.1
0.3 - 1.5	Silty Clay. Mottled light brown/red/grey. Dry. Crumbly	BH22_0.5 BH22_1.5

EOH= 1.5

BH023

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Red/brown. Moist. Root inclusions. Firm.	BH23_0.1
0.3 - 1.5	Silty Clay. Grey. Dry. Gravel inclusions: fine-medium grained. Angular	BH23_0.5 BH23_1.5

EOH= 1.5

BH24

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Dark brown. Moist. Root inclusions Charcoal inclusions 0.5 - 0.6m	BH24_0.1 BH24_0.5
0.6 - 1.5	Silty Clay. Mottled light brown/grey. Dry-moist. Stiff.	BH24_1.5

EOH= 1.5

BH25

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH25_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH25_0.5
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH25_1.5
	From 1.0m: Light brown. Dry. Crumbly	

EOH= 1.5

BH26

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH26_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red/brown. Dry-moist.	BH26_0.5
	From 1.3m: Light brown	BH26_1.5

EOH= 1.5

BH27

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH27_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH27_0.5
	From 1.0m: Light grey. Stiff	BH27_1.5

EOH= 1.5

BH28

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH28_0.1
	Silty Clay. Dark brown. Wet. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Orange. Moist. Firm.	BH28_0.5
		BH28_1.5

EOH= 1.5

BH29

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH29_0.1
0.3 - 1.5	Silty Clay. Dark brown. Moist. Firm. From 1.0m: Mottled red/grey. Dry-moist. Stiff	BH29_0.5 BH10_1.5

EOH= 1.5

BH30

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.8	Topsoil Silty Clay. Dark brown. Wet. Soft. Water seepage at 0.5m	BH30_0.1 BH30_0.5
0.8 - 1.5	Silty Clay. Orange/red/brown. Wet. Soft.	BH30_1.5

EOH= 1.5

BH31

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions.	BH31_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff.	BH31_0.5 BH31_1.5

EOH= 1.5

BH32

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH32_0.1
0.4 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff.	BH32_0.5 BH32_1.5

EOH= 1.5

BH33

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH33_0.1
0.6 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH33_0.5 BH33_1.5

EOH= 1.5

BH34

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH34_0.1
0.4 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff.	BH34_0.5 BH34_1.5

EOH= 1.5

BH35

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH35_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH35_0.5 BH35_1.5

EOH= 1.5

BH36

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH36_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Firm. From 1.0m: Grey.	BH36_0.5 BH36_1.5

EOH= 1.5

BH37

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH37_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff.	BH37_0.5 BH37_1.5

EOH= 1.5

BH38

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH38_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Stiff. From 1.0m: Mottled red/grey	BH38_0.5 BH38_1.5

EOH= 1.5

BH39

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Red/brown. Moist. Root inclusions. Firm.	BH39_0.1
0.3 - 1.5	Silty Clay. Red/grey. Dry-moist. From 1.0m: Dry	BH39_0.5 BH39_1.5

EOH= 1.5

BH40

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Red/brown. Moist. Root inclusions. Firm.	BH40_0.1
0.3 - 1.5	Silty Clay. Red/grey. Dry-moist. From 1.0m: Dry	BH40_0.5 BH40_1.5

EOH= 1.5

BH41

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH41_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff.	BH41_0.5 BH41_1.5

EOH= 1.5

BH42

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH42_0.1
0.6 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff. From 1.0m: Grey	BH42_0.5 BH04_1.5

EOH= 1.5

BH43

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH43_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. From 1.0m: Light bronw. Dry.	BH43_0.5 BH43_1.5

EOH= 1.5

BH44

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH44_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff. Organic matter (petrified wood) at 1.2m.	BH44_0.5 BH44_1.5

EOH= 1.5

BH45

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH45_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. From 1.0m: Grey. Organic matter (petrified wood) at 1.2m.	BH45_0.5 BH45_1.5

EOH= 1.5

BH46

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH46_0.1
0.6 - 1.5	Silty Clay. Mottled red/grey. From 1.0m: Grey	BH46_0.5 BH46_1.5

EOH= 1.5

BH47

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH47_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff. From 1.0m: Light brown/grey. Dry. Crumbly	BH47_0.5 BH47_1.5

EOH= 1.5

BH48

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH48_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff. From 1.0m: Light brown. Dry. Gravel inclusions: fine-medium grained. Angular.	BH48_0.5 BH48_1.5

EOH= 1.5

BH49

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH49_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Dry-moist. Stiff	BH49_0.5 BH49_1.5

EOH= 1.5

BH50

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH50_0.1 BH50_0.5
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff. From 1.0m: Grey	BH50_1.5

EOH= 1.5

BH51

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Dry-moist. Root inclusions. Soft.	BH51_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff. From 1.0m: Grey	BH51_0.5 BH51_1.5

EOH= 1.5

BH52

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Dry-moist. Root inclusions. Soft.	BH52_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Stiff. Organic matter (petrified wood) at 0.6m	BH52_0.5 BH52_1.5

EOH= 1.5

BH53

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH53_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH53_0.5 BH53_1.5

EOH= 1.5

BH54

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH54_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH54_0.5 BH54_1.5

EOH= 1.5

BH55

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH55_0.1
0.3 - 1.5	Silty Clay. Mottled grey/orange/red. Wet. Soft. Water seepage at 0.4m.	BH55_0.5 BH55_1.5

EOH= 1.5

BH56

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Firm.	BH56_0.1
0.3 - 1.2	Silty Clay. Orange/brown. Dry.	BH56_0.5 BH56_1.2
1.2 - 1.3	Weathered shale (refusal)	

EOH= 1.3

BH57

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH57_0.1
0.3 - 1.2	Silty Clay. Orange/brown. Dry.	BH57_0.5 BH57_1.2
1.2 - 1.3	Weathered shale (refusal)	

EOH= 1.3

Date: 13/4/12

BH58

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH58_0.1
0.3 - 0.8	Silty Clay. Red. Slightly mottled grey. Dry-moist. Firm.	BH58_0.5 BH58_0.8
0.8 -	Weathered shale (refusal)	

EOH= 0.8

BH59

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH59_0.1
0.3 - 0.6	Silty Clay. Red/grey. Moist. Firm. From 0.5m: Brown/grey	BH59_0.5
0.6 -	Weathered shale (refusal)	

EOH= 0.6

BH60

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH60_0.1
0.3 - 0.8	Silty Clay. Brown. Dry-moist.	BH60_0.5
0.8 -	Weathered shale (refusal)	

EOH= 0.8

BH61

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH61_0.1
0.3 - 0.6	Silty Clay. Red/brown. Moist. Firm.	BH61_0.5
0.6 -	Weathered shale (refusal)	

EOH= 0.6

BH62

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft-firm.	BH62_0.1
0.3 - 0.55	Silty Clay.	BH62_0.5
0.55 -	Weathered Shale (refusal)	BH07_1.5

EOH= 0.55

BH63

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH63_0.1
0.3 - 1.4	Silty Clay.	BH63_0.5
1.4 - 1.5	Weathered shale (refusal).	

EOH= 1.5

BH64

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH64_0.1
0.3 - 1.4	Silty Clay.	BH64_0.5
1.4 - 1.5	Weathered shale (refusal).	BH64_1.4

EOH= 1.5

BH65

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH65_0.1
0.3 - 1.5	Silty Clay. Red/brown. Moist. Firm. From 0.8m: Brown	BH65_0.5
1.5	Weathered shale.	BH65_1.5

EOH= 1.5

BH66

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH66_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey.	BH66_0.5 BH66_1.5

EOH= 1.5

BH67

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH67_0.1
0.3 - 1.5	Silty Clay. Red/brown. Moist. Firm.	BH67_0.5 BH67_1.5

EOH= 1.5

BH68

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH68_0.1
0.3 - 1.5	Silty Clay. Red/brown. Moist. Firm.	BH68_0.5 BH68_1.5

EOH= 1.5

BH69

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH69_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Dry	BH69_0.5 BH69_1.5

EOH= 1.5

BH70

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH70_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Mottled red/grey.	BH70_0.5 BH70_1.5

EOH= 1.5

BH71

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH71_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Mottled red/grey.	BH71_0.5 BH71_1.5

EOH= 1.5

BH72

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH72_0.1
0.3 - 1.5	Silty Clay. Red/brown. Firm. From 0.9m: Dry. Crumbly.	BH72_0.5 BH72_1.5

EOH= 1.5

BH73

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH73_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. From 1.0m: Mottled orange/grey.	BH73_0.5 BH73_1.5

EOH= 1.5

BH74

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH74_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 1.0m: Orange. Dry.	BH74_0.5 BH74_1.5

EOH= 1.5

BH75

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH75_0.1
0.3 - 0.6	Silty Clay. Red. Moist. Firm.	BH75_0.5

EOH= 0.6

BH76

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to rusted scrap car body)	
0.0 - 0.3	Topsoil Silty Clay. Red/brown. Moist. Root inclusions. Soft.	BH76_0.1
0.3 - 0.5	Silty Clay. Red. Dry-moist. Firm.	BH76_0.5

EOH= 0.5

BH77

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH77_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH77_0.5 BH77_1.5

EOH= 1.5

BH78

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH78_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH78_0.5 BH78_1.5

EOH= 1.5

BH79

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH79_0.1
0.4 - 1.5	Silty Clay. Red. Dry-moist. Stiff. From 0.8m: Gravel inclusions: fine grained. Angular.	BH79_0.5 BH79_1.5

EOH= 1.5

BH80

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to styrofoam boxes)	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH80_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Stiff. From 1.0m: Light brown. Dry. Crumbly.	BH80_0.5 BH80_1.5

EOH= 1.5

BH81

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH81_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH81_0.5 BH81_1.5

EOH= 1.5

BH82

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.6	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH82_0.1
0.6 - 1.5	Silty Clay. Red. Moist. Stiff. From 0.9m: Light brown. Dry. Crumbly	BH82_0.5 BH82_1.5

EOH= 1.5

BH83

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH83_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH83_0.5 BH83_1.5

EOH= 1.5

BH84

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH84_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH84_0.5 BH84_1.5

EOH= 1.5

BH85

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH85_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH85_0.5 BH85_1.5

EOH= 1.5

BH86

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH86_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH86_0.5 BH86_1.5

EOH= 1.5

BH87

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH87_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm.	BH87_0.5 BH87_1.5

EOH= 1.5

BH88

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH88_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Mottled red/grey.	BH88_0.5 BH88_1.5

EOH= 1.5

BH89

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH89_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm.	BH89_0.5 BH89_1.5

EOH= 1.5

BH90

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH90_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm.	BH90_0.5 BH90_1.5

EOH= 1.5

BH91

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH91_0.1
0.3 - 1.5	Silty Clay. Red. Firm. From 1.0m: Mottled red/grey.	BH91_0.5 BH91_1.5

EOH= 1.5

BH92

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH92_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled orange/grey	BH92_0.5 BH92_1.5

EOH= 1.5

BH93

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH93_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.7m: Mottled light brown/grey.	BH93_0.5 BH93_1.5

EOH= 1.5

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BH94

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH94_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH94_0.5 BH94_1.5

EOH= 1.5

BH95

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH95_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH95_0.5 BH95_1.5

EOH= 1.5

BH96

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH96_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Mottled red/grey.	BH96_0.5 BH96_1.5

EOH= 1.5

BH97

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH97_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey.	BH97_0.5 BH97_1.5

EOH= 1.5

BH98

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH98_0.1
0.3 - 1.5	Silty Clay. Red. Dry-moist. Firm. From 1.0m: Mottled red/grey. Dry. Crumbly	BH98_0.5 BH98_1.5

EOH= 1.5

BH99

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH99_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 1.0m: Orange. Dry-moist	BH99_0.5 BH99_1.5

EOH= 1.5

BH100

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH100_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH100_0.5 BH100_1.5

EOH= 1.5

BH101

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to discarded metal, fence posts and plastic boxes).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH101_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 1.0m: Mottled red/grey. Dry	BH101_0.5 BH101_1.5

EOH= 1.5

BH102

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH102_0.1
0.3 - 1.2	Silty Clay. Red. Moist. Stiff. From 0.7m: Orange. Dry-moist. Crumbly.	BH102_0.5
1.2 -	Weathered shale (refusal).	BH102_1.2

EOH= 1.2

BH103

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to discared styrofoam boxes and black plastic).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH103_0.1
0.3 - 1.4	Silty Clay. Red. Moist. Stiff. From 0.8m: Mottled orange/grey. Dry-moist	BH103_0.5
1.4 - 1.5	Weathered shale. Dry	BH103_1.5

EOH= 1.5

BH104

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH104_0.1
0.3 - 1.4	Silty Clay. Red. Moist. Stiff. From 0.8m: Orange. Dry	BH104_0.5
1.5 -	Weathered shale. Dry	BH104_1.5

EOH= 1.5

BH105

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH105_0.1
0.3 - 1.3	Silty Clay. Red. Moist. Stiff. From 0.8m: Orange. Dry	BH105_0.5
1.3 -	Weathered shale. Dry	

EOH= 1.3

BH106

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH106_0.1
0.3 - 1.2	Silty Clay. Red. Moist. Stiff. From 0.8m: Orange. Dry	BH106_0.5
1.2 -	Weathered shale. Dry	BH106_1.2

EOH= 1.2

BH107

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH107_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 0.8m: Orange/grey. Dry	BH107_0.5
1.5 -	Weathered shale. Dry	BH107_1.5

EOH= 1.5

BH108

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH108_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 0.8m: Orange/grey. Dry	BH108_0.5
1.5 -	Weathered shale. Dry	BH108_1.5

EOH= 1.5

BH109

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH109_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 0.8m: Mottled orange/grey	BH109_0.5 BH109_1.5

EOH= 1.5

BH110

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH110_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff.	BH110_0.5 BH110_1.5

EOH= 1.5

BH111

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Moist. Root inclusions. Soft.	BH111_0.1
0.3 - 1.0	Silty Clay. Red. Moist. Stiff. From 0.5m: Mottled red/grey.	BH111_0.5
1.0 -	Weathered shale (refusal). Orange. Dry	

EOH= 1.0

BH112

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH112_0.1
0.3 - 1.0	Silty Clay. Light brown. Moist. Stiff. From 0.8m: Dry.	BH112_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH112_1.5

EOH= 1.5

BH113

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH113_0.1
0.3 - 1.0	Silty Clay. Light brown. Moist. Stiff. From 0.8m: Dry.	BH113_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH113_1.5

EOH= 1.5

BH114

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH114_0.1
0.3 - 1.0	Silty Clay. Light brown. Moist. Firm.	BH114_0.5
1.0 - 1.5	Weathered shale. Dry	BH114_1.5

EOH= 1.5

BH115

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to black plastic irrigation pipe)	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH115_0.1
0.3 - 1.0	Silty Clay. Light brown. Moist. Firm.	BH115_0.5
1.0 - 1.5	Weathered shale. Dry	BH115_1.5

EOH= 1.5

BH116

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH116_0.1
0.3 - 1.0	Silty Clay. Red/brown. Moist. Firm.	BH116_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH116_1.5

EOH= 1.5

BH117

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to metal, plastic and rubbish)	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH117_0.1
0.3 - 1.0	Silty Clay. Red/brown. Moist. Firm.	BH117_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH117_1.5

EOH= 1.5

BH118

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown/red. Moist. Root inclusions. Soft.	BH118_0.1
0.3 - 1.0	Silty Clay. Red. Dry-moist. Stiff.	BH118_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH118_1.5

EOH= 1.5

BH119

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH119_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 1.0m: Mottled orange/grey. Dry-moist.	BH119_0.5 BH119_1.5

EOH= 1.5

BH120

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH120_0.1
0.3 - 1.0	Silty Clay. Light brown.	BH120_0.5
1.0 -	Weathered shale (refusal).	

EOH= 1.0

BH121

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.4	Topsoil	BH121_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	BH121_0.5
0.4 - 1.5	Silty Clay. Red. Moist. Firm.	BH121_1.5
	From 0.8m: Mottled red/grey.	

EOH= 1.5

BH122

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH122_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH122_0.5
	From 0.8m: Mottled orange/grey.	
		BH122_1.5

EOH= 1.5

BH123

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH123_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.0	Silty Clay. Red. Moist. Firm.	BH123_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry.	BH123_1.5

EOH= 1.5

BH124

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH124_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.2	Silty Clay. Red. Moist. Firm.	BH124_0.5
1.2 - 1.5	Weathered shale. Moist.	BH124_1.5

EOH= 1.5

BH125

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH125_0.1
0.3 - 1.0	Silty Clay. Red. Moist. Firm.	BH125_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH125_1.5

EOH= 1.5

BH126

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH126_0.1
0.3 - 1.0	Silty Clay. Red. Moist. Firm.	BH126_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH126_1.5

EOH= 1.5

BH127

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH127_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 1.0m: Mottled red/grey.	BH127_0.5 BH127_1.5

EOH= 1.5

BH128

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH128_0.1
0.3 - 1.5	Silty Clay. Light brown. From 1.0m: Grey.	BH128_0.5 BH128_1.5

EOH= 1.5

BH129

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH129_0.1
0.3 - 1.5	Silty Clay. Light brown. From 1.0m: Grey.	BH129_0.5 BH129_1.5

EOH= 1.5

BH130

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH130_0.1
0.3 - 1.5	Silty Clay. Brown/grey	BH130_0.5 BH130_1.5

EOH= 1.5

BH131

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to plastic drum)	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH131_0.1
0.3 - 1.5	Silty Clay. Brown/grey	BH131_0.5 BH131_1.5

EOH= 1.5

BH132

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH132_0.1
0.3 - 1.0	Silty Clay. Brown. Inclusions of charcoal from 0.4-0.5m (no odour).	BH132_0.5
1.0 - 1.5	Weathered shale. Light brown. Dry	BH132_1.5

EOH= 1.5

BH133

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to rusted 44 gallon drum).	
0.0 - 0.4	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH133_0.1
0.4 - 1.5	Silty Clay. Red. Moist. Firm. From 1.0m: Mottled red/grey. Dry-moist.	BH133_0.5 BH133_1.5

EOH= 1.5

BH134

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to scrap metal, wire fencing and 44 gallon drums).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH134_0.1
0.4 - 0.8	Silty Clay. Red. Moist. Firm	BH134_0.5
0.8 - 1.2	Weathered shale (refusal).	BH134_1.5

EOH= 1.5

BH135

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to rusted steel drum).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH135_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Firm.	BH135_0.5 BH135_1.5

EOH= 1.5

BH136

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH136_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled orange/grey.	BH136_0.5 BH136_1.5

EOH= 1.5

BH137

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to shed containing scrap car tyres).	
	Topsoil	
0.0 - 0.3	Silty Clay. Brown. Moist. Root inclusions. Soft.	BH137_0.1
	Silty Clay. Red. Moist. Firm.	
0.3 - 1.5	From 0.8m: Mottled orange/grey.	BH137_0.5
		BH137_1.5

EOH= 1.5

BH138

Depth	Soil Description	Sample ID
	Surface = grass (in vicinity of two abandoned sheds)	
0.0 - 0.3	Topsoil	BH138_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH138_0.5
	From 1.0m: Mottled red/grey.	BH138_1.5

EOH= 1.5

BH139

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH139_0.1
	Silty Clay. Dark brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm. Minor glass inclusions at 0.5m.	BH139_0.5
	From 1.0m: Mottled orange/grey.	
		BH139_1.5

EOH= 1.5

BH140

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to broken concrete).	
0.0 - 0.3	Topsoil	BH140_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red.	BH140_0.5
	From 1.0m: Mottled red/grey.	BH140_1.5

EOH= 1.5

BH141

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.5	Topsoil	BH141_0.1
	Silty Clay. Dark brown. Moist. Root and organic matter inclusions. Soft.	BH141_0.5
0.5 - 1.5	Silty Clay. Red. Moist. Firm.	BH141_1.5

EOH= 1.5

BH142

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to rusted 44 gallon drums)	
0.0 - 0.3	Topsoil	BH142_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red.	BH142_0.5
	From 1.0m: Mottled red/grey.	BH142_1.5

EOH= 1.5

BH143

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH143_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red.	BH143_0.5
	From 1.0m: Mottled red/grey.	BH143_1.5

EOH= 1.5

BH144

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH144_0.1
	Silty Clay. Dark brown. Dry-moist. Soft.	
0.3 - 1.3	Silty Clay. Red. Moist. Stiff-firm.	BH144_0.5
	Broken concrete inclusions 0.3 - 0.4m.	
1.3 - 1.5	Weathered shale. Light brown. Dry.	BH144_1.5

EOH= 1.5

BH145

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH145_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm From 1.0m: Mottled orange/grey.	BH145_0.5 BH145_1.5

EOH= 1.5

BH146

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH146_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm From 1.0m: Mottled red/grey. Dry. Crumbly.	BH146_0.5 BH146_1.5

EOH= 1.5

BH147

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to metal irrigation pipes).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH147_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm From 1.0m: Mottled red/grey. Dry. Crumbly.	BH147_0.5 BH147_1.5

EOH= 1.5

BH148

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to metal irrigation pipes).	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH148_0.1
0.3 - 1.5	Silty Clay. Red. Dry-Moist. Firm From 1.0m: Mottled red/grey. Dry.	BH148_0.5 BH148_1.5

EOH= 1.5

BH149

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Soft.	BH149_0.1
0.3 - 1.3	Silty Clay. Red. Moist. Firm.	BH149_0.5
1.3 - 1.5	Weathered shale. Light brown. Dry.	BH149_1.5

EOH= 1.5

BH150

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH150_0.1
0.3 - 1.5	Silty Clay. Red/brown. Dry-Moist. Firm From 1.0m: Mottled red/grey. Dry.	BH150_0.5 BH150_1.5

EOH= 1.5

BH151

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Soft.	BH151_0.1
0.3 - 1.3	Silty Clay. Red. Moist. Firm.	BH151_0.5
1.3 - 1.5	Weathered shale. Light brown. Dry.	BH151_1.5

EOH= 1.5

BH152

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH152_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm From 1.0m: Mottled red/grey.	BH152_0.5 BH152_1.5

EOH= 1.5

BH153

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Dry-moist. Root inclusions. Crumbly.	BH153_0.1
0.3 - 1.3	Silty Clay. Red. Moist. Stiff.	BH153_0.5
1.3 - 1.5	Weathered shale. Light brown. Dry.	BH153_1.5

EOH= 1.5

BH154

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH154_0.1
0.3 - 1.5	Silty Clay. Red.	BH154_0.5 BH154_1.5

EOH= 1.5

BH155

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH155_0.1
0.3 - 1.5	Silty Clay. Red. Moist	BH155_0.5 BH155_1.5

EOH= 1.5

BH156

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Dark brown. Dry-moist. Root inclusions. Crumbly.	BH156_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 1.0m: Mottled red/grey	BH156_0.5 BH156_1.5

EOH= 1.5

BH157

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH157_0.1
0.3 - 1.5	Silty Clay. Mottled orange/grey. Moist. Firm.	BH157_0.5 BH157_1.5

EOH= 1.5

BH158

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH158_0.1
0.3 - 1.5	Silty Clay. Mottled red/grey. Moist. Firm. From 1.0m: Light brown. Dry.	BH158_0.5 BH158_1.5

EOH= 1.5

BH159

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.2	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH159_0.1
0.2 - 1.0	Silty Clay. Red. Dry-moist. Firm. From 0.8m: Brown. Dry.	BH159_0.5
1.0 -	Weathered shale (refusal).	

EOH= 1.0

Date: 17/4/12

BH160

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to scrap metal)	
0.0 - 0.2	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft	BH160_0.1
0.2 - 1.5	Silty Clay. Red. Firm. From 0.4m: Brown. Wet. Soft. From 0.8m: Mottled red/grey.	BH160_0.5 BH160_1.5

EOH= 1.5

BH161

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 1.0	Silty Clay. Red. Moist. Firm.	BH161_0.1
	From 0.5m: Brown. Dry.	BH161_0.5
1.0 -	Weathered shale (refusal).	

EOH= 1.0

BH162

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH162_0.1
	Silty Clay. Brown. Dry-moist. Root inclusions. Crumbly.	
0.3 - 1.0	Silty Clay. Red. Moist. Firm.	BH162_0.5
1.0 -	Weathered shale. (refusal).	

EOH= 1.0

BH163

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH163_0.1
	Silty Clay. Brown. Dry-moist. Root inclusions. Crumbly.	
0.3 - 0.9	Silty Clay. Red. Brick fragment inclusions.	BH163_0.5
0.9 - 1.5	Weathered shale.	BH163_1.5

EOH= 1.5

BH164

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH164_0.1
	Silty Clay. Brown. Moist. Soft. Roadbase and glass inclusions.	
		BH158_0.5
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH158_1.5
	From 0.8m: Mottled orange/grey.	

EOH= 1.5

BH165

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH165_0.1
0.3 - 0.8	Silty Clay. Red. Moist. Firm.	BH165_0.5
0.8 - 1.0	Weathered shale (refusal). Light brown. Dry	

EOH= 1.0

BH166

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Gravel inclusions: fine grained. Angular.	BH166_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Stiff. From 1.0m: Brown. Dry.	BH166_0.5 BH166_1.5

EOH= 1.5

BH167

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Moist. Root inclusions. Soft.	BH167_0.1
0.3 - 1.3	Silty Clay. Red. Moist. Stiff.	BH167_0.5
1.3 - 1.5	Weathered shale.	BH167_1.5

EOH= 1.5

BH168

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Gravel inclusions: fine grained. Angular.	BH168_0.1
0.3 - 1.5	Silty Clay. Red. Wet. Soft. From 0.8m: Mottled red/grey. Dry-moist. Stiff.	BH168_0.5 BH168_1.5

EOH= 1.5

BH169

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 1.5	Silty Clay. Red. Moist. Firm.	BH169_0.1
	From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH169_0.5
		BH169_1.5

EOH= 1.5

BH170

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH170_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH170_0.5
	From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH170_1.5

EOH= 1.5

BH171

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH171_0.1
	Silty Clay. Brown. Moist. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH171_0.5
	From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH171_1.5

EOH= 1.5

BH172

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil	BH172_0.1
	Silty Clay. Brown. Wet. Root inclusions. Soft.	
0.3 - 1.5	Silty Clay. Red. Moist. Firm.	BH172_0.5
	From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH172_1.5

EOH= 1.5

BH173

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH173_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH173_0.5 BH173_1.5

EOH= 1.5

BH174

Depth	Soil Description	Sample ID
	Surface = grass (adjacent to disgarded metal and tyres)	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH174_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH174_0.5 BH174_1.5

EOH= 1.5

BH175

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 1.0	Silty Clay. Red. Moist. Firm. From 0.5m: Mottled red/grey. Dry-moist.	BH175_0.1 BH175_0.5
1.0 -	Weathered shale (refusal).	

EOH= 1.0

BH176

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH176_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH176_0.5 BH176_1.5

EOH= 1.5

BH177

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH177_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH177_0.5 BH177_1.5

EOH= 1.5

BH178

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH178_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH178_0.5 BH178_1.5

EOH= 1.5

BH179

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Wet. Root inclusions. Soft.	BH179_0.1
0.3 - 1.5	Silty Clay. Red. Moist. Firm. From 0.8m: Mottled red/grey. Dry-moist. Crumbly.	BH179_0.5 BH179_1.5

EOH= 1.5

BH180

Depth	Soil Description	Sample ID
	Surface = grass	
0.0 - 0.3	Topsoil Silty Clay. Brown. Dry-moist. Root inclusions. Crumbly.	BH180_0.1
0.3 - 1.2	Silty Clay. Red. Moist. Firm	BH180_0.5
1.2 - 1.5	Weathered shale.	BH180_1.5

EOH= 1.5

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