

Lemko Place  
 PENRITH NSW 2750  
 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

TO: SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS

FAX: 02 8594 0499  
 Project Manager: ER  
 Location: Northwest Growth Centre, Marsden Park

**Results required by:**

Location	Sampling details			Sample type		Results required by:					KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water	EC	pH	Sulphate	Chloride	ESP	
TP-14	0.0-0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
TP-14	0.6-0.7			DSP		✓	✓				YES
TP-14	1.7-1.8			DSP		✓	✓				YES
TP-15	0.0-0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
TP-15	1.0-1.1			DSP		✓	✓				YES
TP-15	2.0-2.1			DSP		✓	✓				YES
TP-16	0.0-0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
TP-16	0.6-0.7			DSP		✓	✓				YES
TP-16	1.5-1.6			DSP		✓	✓				YES
TP-18	0.0-0.1	28/10/2011		DSP		✓	✓	✓	✓	✓	YES
TP-18	1.0-1.1			DSP		✓	✓				YES
TP-18	2.0-2.1			DSP		✓	✓	✓	✓	✓	YES

Relinquished by: SUSA Signature Date: 31/10/11  
 Received by: [Signature] Signature Date: 20/11/11

Legend:  
 W/G Water sample, glass bottle  
 W/P Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \* Purge & Trap  
 # Geotechnique Screen  
 ® mole H<sup>+</sup>/tonne

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 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400

FAX: 02 8594 0499

ATTN: MS ANGELA MAMALICOS

Project Manager: ER

Location: Northwest Growth Centre, Marsden Park

Sampling By: AN

Job No: 12576/1

Project: Marsden Park Precinct

**Results required by:**

Location	Sampling details			Sample type		Results required by:					KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water	EC	pH	Sulphate	Chloride	ESP	
TP-19	0.0 - 0.1	28/10/2011		DSP		✓	✓	✓	✓	✓	YES
	0.5-0.6			DSP		✓	✓	✓	✓	✓	YES
	1.5-1.6			DSP		✓	✓	✓	✓	✓	YES
TP-21	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
	1.0-1.1			DSP		✓	✓	✓	✓	✓	YES
	2.0-2.1			DSP		✓	✓	✓	✓	✓	YES
TP-22	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
	1.0-1.1			DSP		✓	✓	✓	✓	✓	YES
	2.0-2.1			DSP		✓	✓	✓	✓	✓	YES
TP-23	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
	0.5-0.6			DSP		✓	✓	✓	✓	✓	YES
	1.5-1.6			DSP		✓	✓	✓	✓	✓	YES

Relinquished by

Name

Signature

Date

Suba  
 [Signature]  
 31/10/11

Legend:  
 W/G Water sample, glass bottle  
 W/P Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
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TO: SGS ENVIRONMENTAL SERVICES  
UNIT 16  
33 MADDOX STREET  
ALEXANDRIA NSW 2015

FAX: 02 8594 0499

Project Manager: ER

Location: Northwest Growth Centre, Marsden Park

PH: 02 8594 0400  
ATTN: MS ANGELA MAMALLICOS

Sampling By: AN

Job No: 12576/1

Project: Marsden Park Precinct

**Results required by:**

Location	Sampling details			Sample type		Results required by:					KEEP SAMPLE	
	Depth (m)	Date	Time	Soil	Water	EC	pH	Sulphate	Chloride	ESP		
TP-24	0.0 - 0.1	27/10/2011		DSP		✓	✓					YES
	1.5-1.6			DSP		✓	✓					YES
	2.3-2.4			DSP		✓	✓	✓		✓		YES
TP-25	0.0 - 0.1	27/10/2011		DSP		✓	✓					YES
	1.2-1.3			DSP		✓	✓					YES
	2.0-2.1			DSP		✓	✓					YES
TP-26	0.0 - 0.1	27/10/2011		DSP		✓	✓					YES
	0.5-0.6			DSP		✓	✓	✓		✓		YES
	1.5-1.6			DSP		✓	✓					YES
TP-27	0.0 - 0.1	27/10/2011		DSP		✓	✓					YES
	0.5-0.6			DSP		✓	✓					YES
	1.5-1.6			DSP		✓	✓					YES

Relinquished by: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_ Received by: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

Legend: WG Water sample, glass bottle USG Undisturbed soil sample (glass jar) DSP Disturbed soil sample (small plastic bag) \* Purge & Trap @ mole H<sup>+</sup>/tonne  
 WP Water sample, plastic bottle DSG Disturbed soil sample (glass jar) ✓ Test required # Geotechnique Screen

Lemko Place P O Box 880 Tel: (02) 4722 2700  
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**TO: SGS ENVIRONMENTAL SERVICES**  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400 FAX: 02 8594 0499  
 ATTN: MS ANGELA MAMALICOS Project Manager: ER Location: Northwest Growth Centre, Marsden Park

### Results required by:

Location	Depth (m)	Date	Time	Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
				Soil	Water						
TP-28	0.0 - 0.1	28/10/2011		DSP		✓	✓	✓	✓	✓	YES
	0.5-0.6			DSP		✓	✓				YES
	1.5-1.6			DSP		✓	✓				YES
TP-29	0.0 - 0.1	28/10/2011		DSP		✓	✓	✓	✓	✓	YES
	1.1-1.2			DSP		✓	✓				YES
	2.0-2.1			DSP		✓	✓				YES
TP-30	0.0 - 0.1	28/10/2011		DSP		✓	✓	✓	✓	✓	YES
	1.0-1.1			DSP		✓	✓				YES
	2.0-2.1			DSP		✓	✓				YES
TP-31	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓	✓	YES
	1.0-1.1			DSP		✓	✓				YES
	2.0-2.1			DSP		✓	✓				YES

Relinquished by: \_\_\_\_\_ Signature by: SOSA Date: 31/10/11  
 Received by: \_\_\_\_\_ Signature: [Signature] Date: 31/10/11

Legend: W/G Water sample, glass bottle USG Undisturbed soil sample (glass jar) DSP Disturbed soil sample (small plastic bag) \* Purge & Trap @ mole H<sup>2</sup>/tonne  
 W/P Water sample, plastic bottle DSG Disturbed soil sample (glass jar) ✓ Test required # Geotechnique Screen

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TO: SGS ENVIRONMENTAL SERVICES  
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 ALEXANDRIA NSW 2015

Sampling By: AN

Job No: 12576/1

Project: Marsden Park Precinct

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALLICOS  
 FAX: 02 8594 0499

Project Manager: ER

Location: Northwest Growth Centre, Marsden Park

### Results required by:

Location	Sampling details			Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water						
TP-32	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓		YES
	0.6-0.7			DSP		✓	✓	✓	✓		YES
	1.5-1.6			DSP		✓	✓	✓	✓		YES
TP-33	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓		YES
	1.0-1.1			DSP		✓	✓	✓	✓		YES
	2.0-2.1			DSP		✓	✓	✓	✓		YES
TP-34	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓		YES
	0.5-0.6			DSP		✓	✓	✓	✓		YES
	1.5-1.6			DSP		✓	✓	✓	✓		YES
TP-35	0.0 - 0.1	27/10/2011		DSP		✓	✓	✓	✓		YES
	1.0-1.1			DSP		✓	✓	✓	✓		YES
	2.0-2.1			DSP		✓	✓	✓	✓		YES

Relinquished by

Name

Signature

Date

Legend:  
 WG Water sample, glass bottle  
 WWP Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \* Purge & Trap  
 # Geotechnique Screen  
 @ mole H<sup>+</sup>/tonne





## SAMPLE RECEIPT ADVICE

SE102938

### CLIENT DETAILS

Contact Emged Rizkalla  
Client Geotechnique  
Address P.O. Box 880  
PENRITH NSW 2751

Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email Emged@geotech.com.au

Project **12576/1 - Marsden Park Precinct**  
Order Number (Not specified)  
Samples 99

### LABORATORY DETAILS

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

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

Samples Received Mon 31/10/2011  
Report Due Wed 9/11/2011  
SGS Reference **SE102938**

### SUBMISSION DETAILS

This is to confirm that 99 samples were received on Monday 31/10/2011. Results are expected to be ready by Wednesday 9/11/2011. Please quote SGS reference SE102938 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	99 Soils	Type of documentation received	Email
Date documentation received	31/10/11@1:14pm	Samples received in good order	Yes
Samples received without headspace	N/A	Sample temperature upon receipt	20°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

### COMMENTS

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
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SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
001	TP-1 0.0-0.1	3	13	1	1	2
002	TP-1 1.0-1.1	3	-	1	1	-
003	TP-1 2.0-2.1	3	-	1	1	-
004	TP-2 0.0-0.1	3	-	1	1	-
005	TP-2 0.5-0.6	3	13	1	1	2
006	TP-2 1.5-1.6	3	-	1	1	-
007	TP-4 0.0-0.1	3	-	1	1	-
008	TP-4 1.0-1.1	3	-	1	1	-
009	TP-4 2.0-2.1	3	13	1	1	2
010	TP-5 0.0-0.1	3	-	1	1	-
011	TP-5 0.5-0.6	3	-	1	1	-
012	TP-5 1.5-1.6	3	13	1	1	2
013	TP-6 0.0-0.1	3	13	1	1	2
014	TP-6 0.5-0.6	3	-	1	1	-
015	TP-6 1.5-1.6	3	-	1	1	-
016	TP-7 0.0-0.1	3	-	1	1	-
017	TP-7 1.0-1.1	3	13	1	1	2
018	TP-7 2.0-2.1	3	-	1	1	-
019	TP-8 0.0-0.1	3	-	1	1	-
020	TP-8 1.0-1.1	3	-	1	1	-
021	TP-8 2.0-2.1	3	13	1	1	2
022	TP-9 0.0-0.1	3	13	1	1	2
023	TP-9 0.6-0.7	3	-	1	1	-
024	TP-9 1.5-1.6	3	-	1	1	-

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.



CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
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SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
025	TP-10 0.0-0.1	3	-	1	1	-
026	TP-10 1.0-1.1	3	13	1	1	2
027	TP-10 2.0-2.1	3	-	1	1	-
028	TP-11 0.0-0.1	3	-	1	1	-
029	TP-11 0.6-0.7	3	13	1	1	2
030	TP-11 1.5-1.6	3	-	1	1	-
031	TP-12 0.0-0.1	3	-	1	1	-
032	TP-12 1.0-1.1	3	-	1	1	-
033	TP-12 2.0-2.1	3	13	1	1	2
034	TP-13 0.0-0.1	3	-	1	1	-
035	TP-13 1.0-1.1	3	-	1	1	-
036	TP-13 2.0-2.1	3	13	1	1	2
037	TP-14 0.0-0.1	3	13	1	1	2
038	TP-14 0.6-0.7	3	-	1	1	-
039	TP-14 1.7-1.8	3	-	1	1	-
040	TP-15 0.0-0.1	3	-	1	1	-
041	TP-15 1.0-1.1	3	13	1	1	2
042	TP-15 2.0-2.1	3	-	1	1	-
043	TP-16 0.0-0.1	3	-	1	1	-
044	TP-16 0.6-0.7	3	13	1	1	2
045	TP-16 1.5-1.6	3	-	1	1	-
046	TP-18 0.0-0.1	3	-	1	1	-
047	TP-18 1.0-1.1	3	-	1	1	-
048	TP-18 2.0-2.1	3	13	1	1	2

CONTINUED OVERLEAF

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CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
049	TP-19 0.0-0.1	3	13	1	1	2
050	TP-19 0.5-0.6	3	-	1	1	-
051	TP-19 1.5-1.6	3	13	1	1	2
052	TP-21 0.0-0.1	3	-	1	1	-
053	TP-21 1.0-1.1	3	13	1	1	2
054	TP-21 2.0-2.1	3	-	1	1	-
055	TP-22 0.0-0.1	3	-	1	1	-
056	TP-22 1.0-1.1	3	13	1	1	2
057	TP-22 2.0-2.1	3	-	1	1	-
058	TP-23 0.0-0.1	3	-	1	1	-
059	TP-23 0.5-0.6	3	13	1	1	2
060	TP-23 1.5-1.6	3	-	1	1	-
061	TP-24 0.0-0.1	3	-	1	1	-
062	TP-24 1.5-1.6	3	-	1	1	-
063	TP-24 2.3-2.4	3	13	1	1	2
064	TP-25 0.0-0.1	3	-	1	1	-
065	TP-25 1.2-1.3	3	13	1	1	2
066	TP-25 2.0-2.1	3	-	1	1	-
067	TP-26 0.0-0.1	3	-	1	1	-
068	TP-26 0.5-0.6	3	13	1	1	2
069	TP-26 1.5-1.6	3	-	1	1	-
070	TP-27 0.0-0.1	3	-	1	1	-
071	TP-27 0.5-0.6	3	-	1	1	-
072	TP-27 1.5-1.6	3	13	1	1	2

CONTINUED OVERLEAF

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CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
073	TP-28 0.0-0.1	3	13	1	1	2
074	TP-28 0.5-0.6	3	-	1	1	-
075	TP-28 1.5-1.6	3	-	1	1	-
076	TP-29 0.0-0.1	3	-	1	1	-
077	TP-29 1.1-1.2	3	13	1	1	2
078	TP-29 2.0-2.1	3	-	1	1	-
079	TP-30 0.0-0.1	3	-	1	1	-
080	TP-30 1.0-1.1	3	13	1	1	2
081	TP-30 2.0-2.1	3	-	1	1	-
082	TP-31 0.0-0.1	3	13	1	1	2
083	TP-31 1.0-1.1	3	-	1	1	-
084	TP-31 2.0-2.1	3	-	1	1	-
085	TP-32 0.0-0.1	3	-	1	1	-
086	TP-32 0.6-0.7	3	13	1	1	2
087	TP-32 1.5-1.6	3	-	1	1	-
088	TP-33 0.0-0.1	3	13	1	1	2
089	TP-33 1.0-1.1	3	-	1	1	-
090	TP-33 2.0-2.1	3	-	1	1	-
091	TP-34 0.0-0.1	3	-	1	1	-
092	TP-34 0.5-0.6	3	-	1	1	-
093	TP-34 1.5-1.6	3	13	1	1	2
094	TP-35 0.0-0.1	3	-	1	1	-
095	TP-35 1.0-1.1	3	13	1	1	2
096	TP-35 2.0-2.1	3	-	1	1	-

CONTINUED OVERLEAF

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CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
097	TP-36 0.0-0.1	3	13	1	1	2
098	TP-36 1.0-1.1	3	-	1	1	-
099	TP-36 2.0-2.1	3	-	1	1	-

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## CLIENT DETAILS

Contact **Emged Rizkalla**  
 Geotechnique  
 Client Address **P.O. Box 880**  
**PENRITH NSW 2751**

Telephone **02 4722 2700**  
 Facsimile **02 4722 6161**  
 Email **Emged@geotech.com.au**

Project **12576/1 - Marsden Park Precinct**  
 Order Number **(Not specified)**  
 Samples **3**

## LABORATORY DETAILS

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

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

SGS Reference **SE102941 R0**  
 Report Number **0000010912**  
 Date Reported **03 Nov 2011**  
 Date Received **31 Oct 2011**

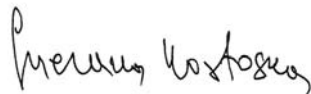
## COMMENTS

The document is issued in accordance with NATA's accreditation requirements.  
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

## SIGNATORIES



**Dong Liang**  
 Inorganics Metals Team Leader



**Snezana Kostoska**  
 Inorganics Chemist



MB blank results are compared to the Limit of Reporting  
 LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.  
 DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Conductivity and TDS by Calculation - Water Method: ME-(AU)-[ENV]AN106

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Conductivity @ 25 C	LB007948	µS/cm	2	<2	2%	102%

pH in water Method: ME-(AU)-[ENV]AN101

Parameter	QC Reference	Units	LOR	DUP %RPD	LCS %Recovery
pH	LB007947	pH Units	-	1%	99%

METHOD

METHODOLOGY SUMMARY

AN101

pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.

AN106

Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as  $\mu\text{mhos/cm}$  or  $\mu\text{S/cm @ 25}^\circ\text{C}$ . For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2520 B.

FOOTNOTES

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

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

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:  
<http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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# STATEMENT OF QA/QC PERFORMANCE AGAINST DATA QUALITY OBJECTIVES

SE102941 R0

## CLIENT DETAILS

Contact Emged Rizkalla  
Client Geotechnique  
Address P.O. Box 880  
PENRITH NSW 2751

Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email Emged@geotech.com.au

Project **12576/1 - Marsden Park Precinct**  
Order Number (Not specified)  
Samples 3

## LABORATORY DETAILS

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

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

SGS Reference SE102941 R0  
Report Number 0000010913  
Date Reported 03 Nov 2011

## COMMENTS

All the laboratory data for each environmental matrix was compared to the SGS Environmental Services' stated data quality objectives (DQO).

Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the chain of custody document and was supplied by the client.

This QA/QC statement must be read in conjunction with the referenced analytical report.

The statement and the analytical report must not be reproduced except in full.

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

Extraction Date	pH in water	3 Items
Analysis Date	pH in water	3 Items

## SAMPLE SUMMARY

Sample counts by matrix	3 Waters	Type of documentation received	Email
Date documentation received	31/10/11@4:31pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	2.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
-------------	---------------	--------	---------	----------	----------------	-----------	--------------	----------

**Conductivity and TDS by Calculation - Water** Method: ME-(AU)-[ENV]AN106

DW1	SE102941.001	LB007948	27 Oct 2011	31 Oct 2011	24 Nov 2011	01 Nov 2011	24 Nov 2011	02 Nov 2011
DW2	SE102941.002	LB007948	28 Oct 2011	31 Oct 2011	25 Nov 2011	01 Nov 2011	25 Nov 2011	02 Nov 2011
DW3	SE102941.003	LB007948	28 Oct 2011	31 Oct 2011	25 Nov 2011	01 Nov 2011	25 Nov 2011	02 Nov 2011

**pH in water** Method: ME-(AU)-[ENV]AN101

DW1	SE102941.001	LB007947	27 Oct 2011	31 Oct 2011	28 Oct 2011	<b>01 Nov 2011†</b>	28 Oct 2011	<b>02 Nov 2011†</b>
DW2	SE102941.002	LB007947	28 Oct 2011	31 Oct 2011	29 Oct 2011	<b>01 Nov 2011†</b>	29 Oct 2011	<b>02 Nov 2011†</b>
DW3	SE102941.003	LB007947	28 Oct 2011	31 Oct 2011	29 Oct 2011	<b>01 Nov 2011†</b>	29 Oct 2011	<b>02 Nov 2011†</b>

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

No Surrogates were required for this job.



Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, which is typically 2.5 times the statistically determined method detection limit (MDL).  
Result is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Units	Control LOR	BLK MB
<b>Conductivity and TDS by Calculation - Water</b> Method: ME-(AU)-ENVJAN106 LB007948.001			
Conductivity @ 25 C	µS/cm	2	<2

Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter		Sample Name			SE102941.003-DUP	
	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Conductivity and TDS by Calculation - Water</b> Method: ME-(AU)-[ENV]AN106						
LB007948.006						
Conductivity @ 25 C	µS/cm	2	880	860	15	<b>2</b>
<b>pH In water</b> Method: ME-(AU)-[ENV]AN101						
LB007947.005						
pH	pH Units	-	6.2	6.2	17	<b>1</b>

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report.  
 Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Control		LCS STD			
	Units	LOR	Result	Expected Result	Criteria %	Recovery %
<b>Conductivity and TDS by Calculation - Water</b> Method: ME-(AU)-[ENV]AN106 LB007948.002						
Conductivity @ 25 C	µS/cm	2	310	303	90 - 110	<b>102</b>
<b>pH in water</b> Method: ME-(AU)-[ENV]AN101 LB007947.001						
pH	pH Units	-	7.4	7.415	98 - 102	<b>99</b>

Matrix spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report. Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spikes were required for this job.

Matrix spike duplicates are calculated as relative percent difference using the formula  $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$   
 The original result is the analyte concentration of the matrix spike and the replicate result is the analyte concentration of the matrix spike duplicate.  
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $\text{MaxAllowableDifference} = 100 \times \text{StatisticalDetectionLimit} / \text{Mean} + \text{LimitingRepeatability}$   
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spike Duplicates were required for this job.

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	NATA Accreditation does not cover this analysis.	NA	The sample was not analysed for this analyte
^	Performed by outside laboratory.		
LOR	Limit of Reporting		

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: <http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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## SAMPLE RECEIPT ADVICE

SE102941

### CLIENT DETAILS

Contact Emged Rizkalla  
Client Geotechnique  
Address P.O. Box 880  
PENRITH NSW 2751

Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email Emged@geotech.com.au

Project **12576/1 - Marsden Park Precinct**  
Order Number (Not specified)  
Samples 3

### LABORATORY DETAILS

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

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

Samples Received Mon 31/10/2011  
Report Due Thu 3/11/2011  
SGS Reference **SE102941**

### SUBMISSION DETAILS

This is to confirm that 3 samples were received on Monday 31/10/2011. Results are expected to be ready by Thursday 3/11/2011. Please quote SGS reference SE102941 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	3 Waters	Type of documentation received	Email
Date documentation received	31/10/11@4:31pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	2.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

### COMMENTS

Site: Northwest Growth Centre, Marsden Park

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.



# SAMPLE RECEIPT ADVICE

SE102941

## CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
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## SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Water	pH in water
001	DW1	1	1
002	DW2	1	1
003	DW3	1	1

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

## CLIENT DETAILS

Contact **Emged Rizkalla**  
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Project **12576/1 - Marsden Park Precinct**  
 Order Number **+**  
 Samples 108

## LABORATORY DETAILS

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SGS Reference SE103092 R0  
 Report Number 0000012038  
 Date Reported 17 Nov 2011  
 Date Received 04 Nov 2011

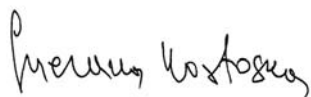
## COMMENTS

The document is issued in accordance with NATA's accreditation requirements.  
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

ESP subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146, report No. CE74867.

Site: Northwest Growth Centre, Marsden Park  
 Sample No. 97 pH Dups failed due to sample is poorly buffered.

## SIGNATORIES



Snezana Kostoska  
 Inorganics Chemist

Parameter	Units	LOR	SE103092.001	SE103092.002	SE103092.003	SE103092.004	SE103092.005
Sample Number			SE103092.001	SE103092.002	SE103092.003	SE103092.004	SE103092.005
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			31 Oct 2011	31 Oct 2011	31 Oct 2011	31 Oct 2011	31 Oct 2011
Sample Name			TP-3 0.0-0.1	TP-3 0.5-0.6	TP-3 1.5-1.6	TP-17 0.0-0.1	TP-17 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	32	79	54	14	200
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.0	5.2	4.9	6.0	5.4
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	13	-	-	-	180
Sulphate	mg/kg	0.5	8.6	-	-	-	130

**Moisture Content Method: AN234**

% Moisture	%	0.5	9.0	13.7	11.9	12.1	18.5
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Parameter	Units	LOR	SE103092.006	SE103092.007	SE103092.008	SE103092.009	SE103092.010
Sample Number			SE103092.006	SE103092.007	SE103092.008	SE103092.009	SE103092.010
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			31 Oct 2011	31 Oct 2011	31 Oct 2011	31 Oct 2011	01 Nov 2011
Sample Name			TP-17 2.0-2.1	TP-20 0.0-0.1	TP-20 0.5-0.6	TP-20 1.5-1.6	TP-37 0.0-0.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	350	140	720	1100	21
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	5.3	5.9	5.7	6.4	5.5
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	-	990	-	-
Sulphate	mg/kg	0.5	-	-	230	-	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	17.9	32.9	14.8	18.1	7.5
------------	---	-----	------	------	------	------	-----

Parameter	Units	LOR	SE103092.011	SE103092.012	SE103092.013	SE103092.014	SE103092.015
Sample Number			SE103092.011	SE103092.012	SE103092.013	SE103092.014	SE103092.015
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name			TP-37 1.0-1.1	TP-37 2.0-2.1	TP-38 0.0-0.1	TP-38 0.5-0.6	TP-38 1.5-1.6

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	440	480	22	320	670
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.4	6.3	5.5	6.7	7.5
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	600	-	290	-
Sulphate	mg/kg	0.5	-	160	-	240	-

Sample Number	SE103092.011	SE103092.012	SE103092.013	SE103092.014	SE103092.015
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-37 1.0-1.1	TP-37 2.0-2.1	TP-38 0.0-0.1	TP-38 0.5-0.6	TP-38 1.5-1.6
Parameter	Units	LOR			

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.011	SE103092.012	SE103092.013	SE103092.014	SE103092.015
	%	0.5	13.5	13.4	8.3	12.5	18.5

Sample Number	SE103092.016	SE103092.017	SE103092.018	SE103092.019	SE103092.020
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-39 0.0-0.1	TP-39 1.0-1.1	TP-39 2.0-2.1	TP-40 0.0-0.1	TP-40 0.5-0.6
Parameter	Units	LOR			

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	Units	LOR	SE103092.016	SE103092.017	SE103092.018	SE103092.019	SE103092.020
	µS/cm	1	720	25	880	36	250

**pH in soil (1:5) Method: AN101**

pH	Units	LOR	SE103092.016	SE103092.017	SE103092.018	SE103092.019	SE103092.020
	pH Units	-	6.1	6.1	5.1	6.0	8.9

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	Units	LOR	SE103092.016	SE103092.017	SE103092.018	SE103092.019	SE103092.020
Chloride	mg/kg	0.25	-	7.6	-	-	-
Sulphate	mg/kg	0.5	-	8.5	-	-	-

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.016	SE103092.017	SE103092.018	SE103092.019	SE103092.020
	%	0.5	18.2	12.3	19.9	8.6	13.5

Sample Number	SE103092.021	SE103092.022	SE103092.023	SE103092.024	SE103092.025
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-40 1.5-1.6	TP-41 0.0-0.1	TP-41 1.0-1.1	TP-41 2.0-2.1	TP-42 0.0-0.1
Parameter	Units	LOR			

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	Units	LOR	SE103092.021	SE103092.022	SE103092.023	SE103092.024	SE103092.025
	µS/cm	1	180	38	35	28	33

**pH in soil (1:5) Method: AN101**

pH	Units	LOR	SE103092.021	SE103092.022	SE103092.023	SE103092.024	SE103092.025
	pH Units	-	7.3	6.2	6.5	6.5	6.5

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	Units	LOR	SE103092.021	SE103092.022	SE103092.023	SE103092.024	SE103092.025
Chloride	mg/kg	0.25	140	-	-	9.1	28
Sulphate	mg/kg	0.5	120	-	-	30	13

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.021	SE103092.022	SE103092.023	SE103092.024	SE103092.025
	%	0.5	10.2	8.8	5.0	4.8	14.5

Parameter	Units	LOR	SE103092.026	SE103092.027	SE103092.028	SE103092.029	SE103092.030
Sample Number			SE103092.026	SE103092.027	SE103092.028	SE103092.029	SE103092.030
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name			TP-42 0.5-0.6	TP-42 1.5-1.6	TP-43 0.0-0.1	TP-43 1.0-1.1	TP-43 2.0-2.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	44	34	130	860	1100
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	5.9	6.5	7.0	4.9	4.7
----	----------	---	-----	-----	-----	-----	-----

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	-	-	1200	-
Sulphate	mg/kg	0.5	-	-	-	180	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	12.1	10.2	5.5	12.1	19.4
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Parameter	Units	LOR	SE103092.031	SE103092.032	SE103092.033	SE103092.034	SE103092.035
Sample Number			SE103092.031	SE103092.032	SE103092.033	SE103092.034	SE103092.035
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name			TP-44 0.0-0.1	TP-44 0.5-0.6	TP-44 1.5-1.6	TP-45 0.0-0.1	TP-45 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	47	570	760	61	1200
-------------------------------------	-------	---	----	-----	-----	----	------

**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.2	5.0	4.7	6.7	4.5
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	540	-	-	-
Sulphate	mg/kg	0.5	-	430000	-	-	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	6.7	17.7	15.3	8.3	16.6
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Parameter	Units	LOR	SE103092.036	SE103092.037	SE103092.038	SE103092.039	SE103092.040
Sample Number			SE103092.036	SE103092.037	SE103092.038	SE103092.039	SE103092.040
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name			TP-45 2.0-2.1	TP-46 0.0-0.1	TP-46 0.5-0.6	TP-46 1.5-1.6	TP-47 0.0-0.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	800	48	170	44	110
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	4.9	6.3	5.2	6.0	7.1
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	1100	-	-	80	-
Sulphate	mg/kg	0.5	240	-	-	150	-

Sample Number	SE103092.036	SE103092.037	SE103092.038	SE103092.039	SE103092.040
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-45 2.0-2.1	TP-46 0.0-0.1	TP-46 0.5-0.6	TP-46 1.5-1.6	TP-47 0.0-0.1
Parameter	Units	LOR			

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.036	SE103092.037	SE103092.038	SE103092.039	SE103092.040
	%	0.5	12.6	8.9	9.4	12.8	12.5

Sample Number	SE103092.041	SE103092.042	SE103092.043	SE103092.044	SE103092.045
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-47 1.0-1.1	TP-47 2.0-2.1	TP-48 0.0-0.1	TP-48 0.5-0.6	TP-48 1.0-1.1
Parameter	Units	LOR			

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	SE103092.041	SE103092.042	SE103092.043	SE103092.044	SE103092.045
			1000	910	62	140	69

**pH in soil (1:5) Method: AN101**

pH	pH Units	-	SE103092.041	SE103092.042	SE103092.043	SE103092.044	SE103092.045
			4.9	4.8	7.2	5.1	5.6

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	mg/kg	0.25	SE103092.041	SE103092.042	SE103092.043	SE103092.044	SE103092.045
Chloride	0.25	-	1100	-	-	-	45
Sulphate	0.5	-	610	-	-	-	59

**Moisture Content Method: AN234**

% Moisture	Units	0.5	SE103092.041	SE103092.042	SE103092.043	SE103092.044	SE103092.045
	%		18.8	17.1	13.2	16.2	10.0

Sample Number	SE103092.046	SE103092.047	SE103092.048	SE103092.049	SE103092.050
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name	TP-49 0.0-0.1	TP-49 1.0-1.1	TP-49 2.0-2.1	TP-50 0.0-0.1	TP-50 0.5-0.6
Parameter	Units	LOR			

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	SE103092.046	SE103092.047	SE103092.048	SE103092.049	SE103092.050
			70	500	850	54	320

**pH in soil (1:5) Method: AN101**

pH	pH Units	-	SE103092.046	SE103092.047	SE103092.048	SE103092.049	SE103092.050
			6.5	5.5	4.7	6.4	5.1

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	mg/kg	0.25	SE103092.046	SE103092.047	SE103092.048	SE103092.049	SE103092.050
Chloride	0.25	23	-	-	-	-	-
Sulphate	0.5	11	-	-	-	-	-

**Moisture Content Method: AN234**

% Moisture	Units	0.5	SE103092.046	SE103092.047	SE103092.048	SE103092.049	SE103092.050
	%		9.9	12.1	13.1	13.5	16.9



Parameter	Units	LOR	SE103092.051	SE103092.052	SE103092.053	SE103092.054	SE103092.055
Sample Number			SE103092.051	SE103092.052	SE103092.053	SE103092.054	SE103092.055
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011	01 Nov 2011
Sample Name			TP-50 1.5-1.6	TP-51 0.0-0.1	TP-51 1.0-1.1	TP-51 2.0-2.1	TP-52 0.0-0.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	1100	58	520	310	37
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	4.4	6.2	9.5	9.4	6.2
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	1000	-	210	-	-
Sulphate	mg/kg	0.5	350	-	320	-	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	18.2	11.5	13.0	11.1	9.2
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Parameter	Units	LOR	SE103092.056	SE103092.057	SE103092.058	SE103092.059	SE103092.060
Sample Number			SE103092.056	SE103092.057	SE103092.058	SE103092.059	SE103092.060
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			01 Nov 2011	01 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011
Sample Name			TP-52 0.5-0.6	TP-52 1.5-1.6	TP-53 0.0-0.1	TP-53 1.0-1.1	TP-53 2.0-2.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	310	860	120	800	910
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	5.7	9.2	7.4	6.0	5.4
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	900	-	1100	-
Sulphate	mg/kg	0.5	-	140	-	160	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	10.9	12.5	7.4	10.4	18.5
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Parameter	Units	LOR	SE103092.061	SE103092.062	SE103092.063	SE103092.064	SE103092.065
Sample Number			SE103092.061	SE103092.062	SE103092.063	SE103092.064	SE103092.065
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011
Sample Name			TP-54 0.0-0.1	TP-54 0.5-0.6	TP-54 1.5-1.6	TP-55 0.0-0.1	TP-55 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	72	520	1100	250	390
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.5	5.1	7.0	7.6	6.7
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	560	-	150	-
Sulphate	mg/kg	0.5	-	190	-	67	-

Sample Number	SE103092.061	SE103092.062	SE103092.063	SE103092.064	SE103092.065
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011
Sample Name	TP-54 0.0-0.1	TP-54 0.5-0.6	TP-54 1.5-1.6	TP-55 0.0-0.1	TP-55 1.0-1.1
Parameter					
Units					
LOR					

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.061	SE103092.062	SE103092.063	SE103092.064	SE103092.065
	%	0.5	10.9	17.1	20.8	6.2	14.3

Sample Number	SE103092.066	SE103092.067	SE103092.068	SE103092.069	SE103092.070
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011
Sample Name	TP-55 2.0-2.1	TP-56 0.0-0.1	TP-56 0.5-0.6	TP-56 1.5-1.6	TP-57 0.0-0.1
Parameter					
Units					
LOR					

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	Units	LOR	SE103092.066	SE103092.067	SE103092.068	SE103092.069	SE103092.070
	µS/cm	1	940	43	260	1100	42

**pH in soil (1:5) Method: AN101**

pH	Units	LOR	SE103092.066	SE103092.067	SE103092.068	SE103092.069	SE103092.070
	pH Units	-	5.0	5.6	5.0	4.9	6.4

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	Units	LOR	SE103092.066	SE103092.067	SE103092.068	SE103092.069	SE103092.070
Chloride	mg/kg	0.25	-	-	-	1600	-
Sulphate	mg/kg	0.5	-	-	-	360	-

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.066	SE103092.067	SE103092.068	SE103092.069	SE103092.070
	%	0.5	18.7	9.8	16.8	15.0	10.9

Sample Number	SE103092.071	SE103092.072	SE103092.073	SE103092.074	SE103092.075
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011	02 Nov 2011
Sample Name	TP-57 1.0-1.1	TP-57 2.0-2.1	TP-58 0.0-0.1	TP-58 0.5-0.6	TP-58 1.5-1.6
Parameter					
Units					
LOR					

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	Units	LOR	SE103092.071	SE103092.072	SE103092.073	SE103092.074	SE103092.075
	µS/cm	1	1300	1200	180	810	1200

**pH in soil (1:5) Method: AN101**

pH	Units	LOR	SE103092.071	SE103092.072	SE103092.073	SE103092.074	SE103092.075
	pH Units	-	7.4	7.5	6.8	5.3	6.3

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Anion	Units	LOR	SE103092.071	SE103092.072	SE103092.073	SE103092.074	SE103092.075
Chloride	mg/kg	0.25	-	1700	140	-	-
Sulphate	mg/kg	0.5	-	220	77	-	-

**Moisture Content Method: AN234**

% Moisture	Units	LOR	SE103092.071	SE103092.072	SE103092.073	SE103092.074	SE103092.075
	%	0.5	14.5	15.3	16.6	16.4	17.7

Parameter	Units	LOR	SE103092.076	SE103092.077	SE103092.078	SE103092.079	SE103092.080
Sample Number			SE103092.076	SE103092.077	SE103092.078	SE103092.079	SE103092.080
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			02 Nov 2011	02 Nov 2011	02 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-59 0.0-0.1	TP-59 1.0-1.1	TP-59 2.0-2.1	TP-60 0.0-0.1	TP-60 0.5-0.6

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	110	1200	1400	610	1300
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.6	4.5	4.5	5.3	5.3
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	1900	-	-	2000
Sulphate	mg/kg	0.5	-	390	-	-	380

**Moisture Content Method: AN234**

% Moisture	%	0.5	5.3	16.7	17.0	15.9	16.0
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Parameter	Units	LOR	SE103092.081	SE103092.082	SE103092.083	SE103092.084	SE103092.085
Sample Number			SE103092.081	SE103092.082	SE103092.083	SE103092.084	SE103092.085
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-60 1.0-1.1	TP-61 0.0-0.1	TP-61 1.0-1.1	TP-61 2.0-2.1	TP-62 0.0-0.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	1600	54	160	550	81
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	7.0	6.2	5.7	6.5	6.4
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	-	-	700	-
Sulphate	mg/kg	0.5	-	-	-	200	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	15.5	16.6	18.4	13.6	9.5
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Parameter	Units	LOR	SE103092.086	SE103092.087	SE103092.088	SE103092.089	SE103092.090
Sample Number			SE103092.086	SE103092.087	SE103092.088	SE103092.089	SE103092.090
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-62 0.5-0.6	TP-62 1.5-1.6	TP-63 0.0-0.1	TP-63 0.5-0.6	TP-63 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	240	2000	35	150	550
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.3	4.6	6.0	5.2	5.0
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	210	-	-	-	190
Sulphate	mg/kg	0.5	90	-	-	-	980

Parameter	Units	LOR	SE103092.086	SE103092.087	SE103092.088	SE103092.089	SE103092.090
Sample Number			SE103092.086	SE103092.087	SE103092.088	SE103092.089	SE103092.090
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-62 0.5-0.6	TP-62 1.5-1.6	TP-63 0.0-0.1	TP-63 0.5-0.6	TP-63 1.0-1.1

**Moisture Content Method: AN234**

Parameter	Units	LOR	SE103092.086	SE103092.087	SE103092.088	SE103092.089	SE103092.090
% Moisture	%	0.5	20.6	19.6	7.9	13.7	12.5

Parameter	Units	LOR	SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
Sample Number			SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-64 0.0-0.1	TP-64 1.0-1.1	TP-64 2.0-2.1	TP-65 0.0-0.1	TP-65 0.5-0.6

**Conductivity and TDS by Calculation - Soil Method: AN106**

Parameter	Units	LOR	SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
Conductivity (1:5 dry sample basis)	µS/cm	1	370	1200	840	150	230

**pH in soil (1:5) Method: AN101**

Parameter	Units	LOR	SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
pH	pH Units	-	8.3	4.4	4.8	6.0	6.7

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Parameter	Units	LOR	SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
Chloride	mg/kg	0.25	-	-	1200	-	-
Sulphate	mg/kg	0.5	-	-	1.8	-	-

**Moisture Content Method: AN234**

Parameter	Units	LOR	SE103092.091	SE103092.092	SE103092.093	SE103092.094	SE103092.095
% Moisture	%	0.5	12.1	15.0	16.5	14.3	9.8

Parameter	Units	LOR	SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
Sample Number			SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-65 1.5-1.6	TP-66 0.0-0.1	TP-66 1.0-1.1	TP-66 2.0-2.1	TP-67 0.0-0.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Parameter	Units	LOR	SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
Conductivity (1:5 dry sample basis)	µS/cm	1	1400	290	1400	1000	140

**pH in soil (1:5) Method: AN101**

Parameter	Units	LOR	SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
pH	pH Units	-	4.9	7.3	4.9	5.8	6.8

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Parameter	Units	LOR	SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
Chloride	mg/kg	0.25	1500	-	-	1300	-
Sulphate	mg/kg	0.5	230	-	-	390	-

**Moisture Content Method: AN234**

Parameter	Units	LOR	SE103092.096	SE103092.097	SE103092.098	SE103092.099	SE103092.100
% Moisture	%	0.5	18.5	7.1	17.0	14.1	10.7

Parameter	Units	LOR	SE103092.101	SE103092.102	SE103092.103	SE103092.104	SE103092.105
Sample Number			SE103092.101	SE103092.102	SE103092.103	SE103092.104	SE103092.105
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-67 0.5-0.6	TP-67 1.5-1.6	TP-68 0.0-0.1	TP-68 1.0-1.1	TP-68 2.0-2.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	420	680	44	660	730
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	5.2	6.7	6.0	4.8	5.0
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	210	-	-	540	-
Sulphate	mg/kg	0.5	420	-	-	270	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	18.9	16.2	13.3	19.2	12.1
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Parameter	Units	LOR	SE103092.106	SE103092.107	SE103092.108
Sample Number			SE103092.106	SE103092.107	SE103092.108
Sample Matrix			Soil	Soil	Soil
Sample Date			03 Nov 2011	03 Nov 2011	03 Nov 2011
Sample Name			TP-69 0.0-0.1	TP-69 0.5-0.6	TP-69 1.5-1.6

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	18	210	890
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.0	5.1	4.8
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**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	-	930
Sulphate	mg/kg	0.5	-	-	330

**Moisture Content Method: AN234**

% Moisture	%	0.5	7.2	19.7	22.8
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MB blank results are compared to the Limit of Reporting  
 LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.  
 DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

**Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106**

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS %Recovery
	Reference					
Conductivity (1:5 dry sample basis)	LB008328	µS/cm	1	<1	6 - 7%	NA
	LB008330	µS/cm	1	<1	2 - 5%	NA
	LB008331	µS/cm	1	<1	0 - 1%	NA
	LB008333	µS/cm	1	<1	2 - 3%	NA
	LB008335	µS/cm	1	<1	0 - 9%	NA
	LB008338	µS/cm	1	<1	3%	NA

**Moisture Content Method: ME-(AU)-[ENV]AN234**

Parameter	QC	Units	LOR	DUP %RPD
	Reference			
% Moisture	LB008334	%	0.5	10 - 20%
	LB008336	%	0.5	5 - 6%
	LB008337	%	0.5	2 - 4%
	LB008339	%	0.5	1 - 2%
	LB008340	%	0.5	1 - 9%

**pH in soil (1:5) Method: ME-(AU)-[ENV]AN101**

Parameter	QC	Units	LOR	DUP %RPD	LCS %Recovery
	Reference				
pH	LB008341	pH Units	-	0 - 1%	99%
	LB008342	pH Units	-	1%	99%
	LB008343	pH Units	-	0 - 1%	99%
	LB008344	pH Units	-	0 - 1%	99%
	LB008345	pH Units	-	1 - 3%	99%
	LB008346	pH Units	-	0%	99%

**Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245**

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS %Recovery
	Reference					
Chloride	LB008423	mg/kg	0.25	<0.25	5%	102 - 103%
	LB008424	mg/kg	0.25	<0.25	7%	103%
Sulphate	LB008423	mg/kg	0.5	<0.5	13%	102 - 104%
	LB008424	mg/kg	0.5	<0.5	31%	102%

METHOD

METHODOLOGY SUMMARY

AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as $\mu\text{mhos/cm}$ or $\mu\text{S/cm @ 25}^\circ\text{C}$ . For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2520 B.
AN234	The test is carried out by drying (at either $40^\circ\text{C}$ or $105^\circ\text{C}$ ) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO <sub>2</sub> , NO <sub>3</sub> and SO <sub>4</sub> are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B

FOOTNOTES

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

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

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:  
<http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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# STATEMENT OF QA/QC PERFORMANCE AGAINST DATA QUALITY OBJECTIVES

SE103092 R0

## CLIENT DETAILS

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Project **12576/1 - Marsden Park Precinct**  
Order Number +  
Samples 108

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SGS Reference SE103092 R0  
Report Number 0000012054  
Date Reported 18 Nov 2011

## COMMENTS

All the laboratory data for each environmental matrix was compared to the SGS Environmental Services' stated data quality objectives (DQO).

Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the chain of custody document and was supplied by the client.

This QA/QC statement must be read in conjunction with the referenced analytical report.

The statement and the analytical report must not be reproduced except in full.

All Data Quality Objectives were met.

## SAMPLE SUMMARY

Sample counts by matrix	108 Soils	Type of documentation received	COC
Date documentation received	7/11/11@1:42pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	20°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes		



## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
<b>Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106</b>								
TP-3 0.0-0.1	SE103092.001	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-3 0.5-0.6	SE103092.002	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-3 1.5-1.6	SE103092.003	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-17 0.0-0.1	SE103092.004	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-17 1.0-1.1	SE103092.005	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-17 2.0-2.1	SE103092.006	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-20 0.0-0.1	SE103092.007	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-20 0.5-0.6	SE103092.008	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-20 1.5-1.6	SE103092.009	LB008328	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011	07 Nov 2011
TP-37 0.0-0.1	SE103092.010	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-37 1.0-1.1	SE103092.011	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-37 2.0-2.1	SE103092.012	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-38 0.0-0.1	SE103092.013	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-38 0.5-0.6	SE103092.014	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-38 1.5-1.6	SE103092.015	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-39 0.0-0.1	SE103092.016	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-39 1.0-1.1	SE103092.017	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-39 2.0-2.1	SE103092.018	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-40 0.0-0.1	SE103092.019	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-40 0.5-0.6	SE103092.020	LB008328	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	08 Nov 2011	07 Nov 2011
TP-40 1.5-1.6	SE103092.021	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-41 0.0-0.1	SE103092.022	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-41 1.0-1.1	SE103092.023	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-41 2.0-2.1	SE103092.024	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-42 0.0-0.1	SE103092.025	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-42 0.5-0.6	SE103092.026	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-42 1.5-1.6	SE103092.027	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-43 0.0-0.1	SE103092.028	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-43 1.0-1.1	SE103092.029	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-43 2.0-2.1	SE103092.030	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-44 0.0-0.1	SE103092.031	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-44 0.5-0.6	SE103092.032	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-44 1.5-1.6	SE103092.033	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-45 0.0-0.1	SE103092.034	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-45 1.0-1.1	SE103092.035	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-45 2.0-2.1	SE103092.036	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-46 0.0-0.1	SE103092.037	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-46 0.5-0.6	SE103092.038	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-46 1.5-1.6	SE103092.039	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-47 0.0-0.1	SE103092.040	LB008330	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-47 1.0-1.1	SE103092.041	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-47 2.0-2.1	SE103092.042	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-48 0.0-0.1	SE103092.043	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-48 0.5-0.6	SE103092.044	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-48 1.0-1.1	SE103092.045	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-49 0.0-0.1	SE103092.046	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-49 1.0-1.1	SE103092.047	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-49 2.0-2.1	SE103092.048	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-50 0.0-0.1	SE103092.049	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-50 0.5-0.6	SE103092.050	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011

## HOLDING TIMES

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Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-50 1.5-1.6	SE103092.051	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-51 0.0-0.1	SE103092.052	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-51 1.0-1.1	SE103092.053	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-51 2.0-2.1	SE103092.054	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-52 0.0-0.1	SE103092.055	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-52 0.5-0.6	SE103092.056	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-52 1.5-1.6	SE103092.057	LB008331	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011	08 Nov 2011
TP-53 0.0-0.1	SE103092.058	LB008331	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-53 1.0-1.1	SE103092.059	LB008331	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-53 2.0-2.1	SE103092.060	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-54 0.0-0.1	SE103092.061	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-54 0.5-0.6	SE103092.062	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-54 1.5-1.6	SE103092.063	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-55 0.0-0.1	SE103092.064	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-55 1.0-1.1	SE103092.065	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-55 2.0-2.1	SE103092.066	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-56 0.0-0.1	SE103092.067	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-56 0.5-0.6	SE103092.068	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-56 1.5-1.6	SE103092.069	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	07 Nov 2011
TP-57 0.0-0.1	SE103092.070	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-57 1.0-1.1	SE103092.071	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-57 2.0-2.1	SE103092.072	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-58 0.0-0.1	SE103092.073	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-58 0.5-0.6	SE103092.074	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-58 1.5-1.6	SE103092.075	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-59 0.0-0.1	SE103092.076	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-59 1.0-1.1	SE103092.077	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-59 2.0-2.1	SE103092.078	LB008333	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	09 Nov 2011	08 Nov 2011
TP-60 0.0-0.1	SE103092.079	LB008333	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-60 0.5-0.6	SE103092.080	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-60 1.0-1.1	SE103092.081	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 0.0-0.1	SE103092.082	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 1.0-1.1	SE103092.083	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 2.0-2.1	SE103092.084	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 0.0-0.1	SE103092.085	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 0.5-0.6	SE103092.086	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 1.5-1.6	SE103092.087	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 0.0-0.1	SE103092.088	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 0.5-0.6	SE103092.089	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 1.0-1.1	SE103092.090	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 0.0-0.1	SE103092.091	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 1.0-1.1	SE103092.092	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 2.0-2.1	SE103092.093	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 0.0-0.1	SE103092.094	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 0.5-0.6	SE103092.095	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 1.5-1.6	SE103092.096	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 0.0-0.1	SE103092.097	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 1.0-1.1	SE103092.098	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 2.0-2.1	SE103092.099	LB008335	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-67 0.0-0.1	SE103092.100	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-67 0.5-0.6	SE103092.101	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-67 1.5-1.6	SE103092.102	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 0.0-0.1	SE103092.103	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 1.0-1.1	SE103092.104	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 2.0-2.1	SE103092.105	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 0.0-0.1	SE103092.106	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 0.5-0.6	SE103092.107	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 1.5-1.6	SE103092.108	LB008338	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011

## HOLDING TIMES

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
<b>Moisture Content Method: ME-(AU)-[ENV]AN234</b>								
TP-3 0.0-0.1	SE103092.001	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-3 0.5-0.6	SE103092.002	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-3 1.5-1.6	SE103092.003	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-17 0.0-0.1	SE103092.004	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-17 1.0-1.1	SE103092.005	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-17 2.0-2.1	SE103092.006	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-20 0.0-0.1	SE103092.007	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-20 0.5-0.6	SE103092.008	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-20 1.5-1.6	SE103092.009	LB008334	31 Oct 2011	04 Nov 2011	14 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-37 0.0-0.1	SE103092.010	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-37 1.0-1.1	SE103092.011	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-37 2.0-2.1	SE103092.012	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-38 0.0-0.1	SE103092.013	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-38 0.5-0.6	SE103092.014	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-38 1.5-1.6	SE103092.015	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-39 0.0-0.1	SE103092.016	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-39 1.0-1.1	SE103092.017	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-39 2.0-2.1	SE103092.018	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-40 0.0-0.1	SE103092.019	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-40 0.5-0.6	SE103092.020	LB008334	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	09 Nov 2011
TP-40 1.5-1.6	SE103092.021	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-41 0.0-0.1	SE103092.022	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-41 1.0-1.1	SE103092.023	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-41 2.0-2.1	SE103092.024	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-42 0.0-0.1	SE103092.025	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-42 0.5-0.6	SE103092.026	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-42 1.5-1.6	SE103092.027	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-43 0.0-0.1	SE103092.028	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-43 1.0-1.1	SE103092.029	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-43 2.0-2.1	SE103092.030	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-44 0.0-0.1	SE103092.031	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-44 0.5-0.6	SE103092.032	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-44 1.5-1.6	SE103092.033	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-45 0.0-0.1	SE103092.034	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-45 1.0-1.1	SE103092.035	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-45 2.0-2.1	SE103092.036	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-46 0.0-0.1	SE103092.037	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-46 0.5-0.6	SE103092.038	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-46 1.5-1.6	SE103092.039	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-47 0.0-0.1	SE103092.040	LB008336	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-47 1.0-1.1	SE103092.041	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-47 2.0-2.1	SE103092.042	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-48 0.0-0.1	SE103092.043	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-48 0.5-0.6	SE103092.044	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-48 1.0-1.1	SE103092.045	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-49 0.0-0.1	SE103092.046	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-49 1.0-1.1	SE103092.047	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-49 2.0-2.1	SE103092.048	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-50 0.0-0.1	SE103092.049	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-50 0.5-0.6	SE103092.050	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-50 1.5-1.6	SE103092.051	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-51 0.0-0.1	SE103092.052	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-51 1.0-1.1	SE103092.053	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-51 2.0-2.1	SE103092.054	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-52 0.0-0.1	SE103092.055	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-52 0.5-0.6	SE103092.056	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-52 1.5-1.6	SE103092.057	LB008337	01 Nov 2011	04 Nov 2011	15 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-53 0.0-0.1	SE103092.058	LB008337	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-53 1.0-1.1	SE103092.059	LB008337	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-53 2.0-2.1	SE103092.060	LB008337	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-54 0.0-0.1	SE103092.061	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-54 0.5-0.6	SE103092.062	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-54 1.5-1.6	SE103092.063	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-55 0.0-0.1	SE103092.064	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-55 1.0-1.1	SE103092.065	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-55 2.0-2.1	SE103092.066	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-56 0.0-0.1	SE103092.067	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-56 0.5-0.6	SE103092.068	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-56 1.5-1.6	SE103092.069	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-57 0.0-0.1	SE103092.070	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-57 1.0-1.1	SE103092.071	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-57 2.0-2.1	SE103092.072	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-58 0.0-0.1	SE103092.073	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-58 0.5-0.6	SE103092.074	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-58 1.5-1.6	SE103092.075	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-59 0.0-0.1	SE103092.076	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-59 1.0-1.1	SE103092.077	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-59 2.0-2.1	SE103092.078	LB008339	02 Nov 2011	04 Nov 2011	16 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-60 0.0-0.1	SE103092.079	LB008339	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-60 0.5-0.6	SE103092.080	LB008339	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-60 1.0-1.1	SE103092.081	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-61 0.0-0.1	SE103092.082	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-61 1.0-1.1	SE103092.083	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-61 2.0-2.1	SE103092.084	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-62 0.0-0.1	SE103092.085	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-62 0.5-0.6	SE103092.086	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-62 1.5-1.6	SE103092.087	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-63 0.0-0.1	SE103092.088	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-63 0.5-0.6	SE103092.089	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-63 1.0-1.1	SE103092.090	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-64 0.0-0.1	SE103092.091	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-64 1.0-1.1	SE103092.092	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-64 2.0-2.1	SE103092.093	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-65 0.0-0.1	SE103092.094	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-65 0.5-0.6	SE103092.095	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-65 1.5-1.6	SE103092.096	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-66 0.0-0.1	SE103092.097	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-66 1.0-1.1	SE103092.098	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-66 2.0-2.1	SE103092.099	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-67 0.0-0.1	SE103092.100	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-67 0.5-0.6	SE103092.101	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011

## HOLDING TIMES

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

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Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-67 1.5-1.6	SE103092.102	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-68 0.0-0.1	SE103092.103	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-68 1.0-1.1	SE103092.104	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-68 2.0-2.1	SE103092.105	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-69 0.0-0.1	SE103092.106	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-69 0.5-0.6	SE103092.107	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011
TP-69 1.5-1.6	SE103092.108	LB008340	03 Nov 2011	04 Nov 2011	17 Nov 2011	08 Nov 2011	13 Nov 2011	10 Nov 2011



# HOLDING TIME SUMMARY

SE103092 R0

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
pH in soil (1:5) Method: ME-(AU)-[ENV]AN101								
TP-3 0.0-0.1	SE103092.001	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-3 0.5-0.6	SE103092.002	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-3 1.5-1.6	SE103092.003	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-17 0.0-0.1	SE103092.004	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-17 1.0-1.1	SE103092.005	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-17 2.0-2.1	SE103092.006	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-20 0.0-0.1	SE103092.007	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-20 0.5-0.6	SE103092.008	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-20 1.5-1.6	SE103092.009	LB008341	31 Oct 2011	04 Nov 2011	07 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-37 0.0-0.1	SE103092.010	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-37 1.0-1.1	SE103092.011	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-37 2.0-2.1	SE103092.012	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-38 0.0-0.1	SE103092.013	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-38 0.5-0.6	SE103092.014	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-38 1.5-1.6	SE103092.015	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-39 0.0-0.1	SE103092.016	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-39 1.0-1.1	SE103092.017	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-39 2.0-2.1	SE103092.018	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-40 0.0-0.1	SE103092.019	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-40 0.5-0.6	SE103092.020	LB008341	01 Nov 2011	04 Nov 2011	08 Nov 2011	07 Nov 2011	09 Nov 2011	07 Nov 2011
TP-40 1.5-1.6	SE103092.021	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-41 0.0-0.1	SE103092.022	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-41 1.0-1.1	SE103092.023	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-41 2.0-2.1	SE103092.024	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-42 0.0-0.1	SE103092.025	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-42 0.5-0.6	SE103092.026	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-42 1.5-1.6	SE103092.027	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-43 0.0-0.1	SE103092.028	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-43 1.0-1.1	SE103092.029	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-43 2.0-2.1	SE103092.030	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-44 0.0-0.1	SE103092.031	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-44 0.5-0.6	SE103092.032	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-44 1.5-1.6	SE103092.033	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-45 0.0-0.1	SE103092.034	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-45 1.0-1.1	SE103092.035	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-45 2.0-2.1	SE103092.036	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-46 0.0-0.1	SE103092.037	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-46 0.5-0.6	SE103092.038	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-46 1.5-1.6	SE103092.039	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-47 0.0-0.1	SE103092.040	LB008342	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-47 1.0-1.1	SE103092.041	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-47 2.0-2.1	SE103092.042	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-48 0.0-0.1	SE103092.043	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-48 0.5-0.6	SE103092.044	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-48 1.0-1.1	SE103092.045	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-49 0.0-0.1	SE103092.046	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-49 1.0-1.1	SE103092.047	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-49 2.0-2.1	SE103092.048	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-50 0.0-0.1	SE103092.049	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-50 0.5-0.6	SE103092.050	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-50 1.5-1.6	SE103092.051	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-51 0.0-0.1	SE103092.052	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-51 1.0-1.1	SE103092.053	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-51 2.0-2.1	SE103092.054	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-52 0.0-0.1	SE103092.055	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-52 0.5-0.6	SE103092.056	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-52 1.5-1.6	SE103092.057	LB008343	01 Nov 2011	04 Nov 2011	08 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-53 0.0-0.1	SE103092.058	LB008343	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-53 1.0-1.1	SE103092.059	LB008343	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-53 2.0-2.1	SE103092.060	LB008343	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-54 0.0-0.1	SE103092.061	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-54 0.5-0.6	SE103092.062	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-54 1.5-1.6	SE103092.063	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-55 0.0-0.1	SE103092.064	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-55 1.0-1.1	SE103092.065	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-55 2.0-2.1	SE103092.066	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-56 0.0-0.1	SE103092.067	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-56 0.5-0.6	SE103092.068	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-56 1.5-1.6	SE103092.069	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-57 0.0-0.1	SE103092.070	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-57 1.0-1.1	SE103092.071	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-57 2.0-2.1	SE103092.072	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-58 0.0-0.1	SE103092.073	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-58 0.5-0.6	SE103092.074	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-58 1.5-1.6	SE103092.075	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-59 0.0-0.1	SE103092.076	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-59 1.0-1.1	SE103092.077	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-59 2.0-2.1	SE103092.078	LB008344	02 Nov 2011	04 Nov 2011	09 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-60 0.0-0.1	SE103092.079	LB008344	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-60 0.5-0.6	SE103092.080	LB008344	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-60 1.0-1.1	SE103092.081	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 0.0-0.1	SE103092.082	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 1.0-1.1	SE103092.083	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-61 2.0-2.1	SE103092.084	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 0.0-0.1	SE103092.085	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 0.5-0.6	SE103092.086	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-62 1.5-1.6	SE103092.087	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 0.0-0.1	SE103092.088	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 0.5-0.6	SE103092.089	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-63 1.0-1.1	SE103092.090	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 0.0-0.1	SE103092.091	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 1.0-1.1	SE103092.092	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-64 2.0-2.1	SE103092.093	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 0.0-0.1	SE103092.094	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 0.5-0.6	SE103092.095	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-65 1.5-1.6	SE103092.096	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 0.0-0.1	SE103092.097	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 1.0-1.1	SE103092.098	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-66 2.0-2.1	SE103092.099	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-67 0.0-0.1	SE103092.100	LB008345	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-67 0.5-0.6	SE103092.101	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011



## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP-67 1.5-1.6	SE103092.102	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 0.0-0.1	SE103092.103	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 1.0-1.1	SE103092.104	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-68 2.0-2.1	SE103092.105	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 0.0-0.1	SE103092.106	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 0.5-0.6	SE103092.107	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011
TP-69 1.5-1.6	SE103092.108	LB008346	03 Nov 2011	04 Nov 2011	10 Nov 2011	08 Nov 2011	10 Nov 2011	08 Nov 2011

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
<b>Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245</b>								
TP-3 0.0-0.1	SE103092.001	LB008423	31 Oct 2011	04 Nov 2011	28 Nov 2011	09 Nov 2011	28 Nov 2011	16 Nov 2011
TP-17 1.0-1.1	SE103092.005	LB008423	31 Oct 2011	04 Nov 2011	28 Nov 2011	09 Nov 2011	28 Nov 2011	16 Nov 2011
TP-20 0.5-0.6	SE103092.008	LB008423	31 Oct 2011	04 Nov 2011	28 Nov 2011	09 Nov 2011	28 Nov 2011	16 Nov 2011
TP-37 2.0-2.1	SE103092.012	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-38 0.5-0.6	SE103092.014	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-39 1.0-1.1	SE103092.017	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-40 1.5-1.6	SE103092.021	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-41 2.0-2.1	SE103092.024	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-42 0.0-0.1	SE103092.025	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-43 1.0-1.1	SE103092.029	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-44 0.5-0.6	SE103092.032	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-45 2.0-2.1	SE103092.036	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-46 1.5-1.6	SE103092.039	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-47 2.0-2.1	SE103092.042	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-48 1.0-1.1	SE103092.045	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-49 0.0-0.1	SE103092.046	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-50 1.5-1.6	SE103092.051	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-51 1.0-1.1	SE103092.053	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-52 1.5-1.6	SE103092.057	LB008423	01 Nov 2011	04 Nov 2011	29 Nov 2011	09 Nov 2011	29 Nov 2011	16 Nov 2011
TP-53 1.0-1.1	SE103092.059	LB008423	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-54 0.5-0.6	SE103092.062	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-55 0.0-0.1	SE103092.064	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-56 1.5-1.6	SE103092.069	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-57 2.0-2.1	SE103092.072	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-58 0.0-0.1	SE103092.073	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-59 1.0-1.1	SE103092.077	LB008424	02 Nov 2011	04 Nov 2011	30 Nov 2011	09 Nov 2011	30 Nov 2011	16 Nov 2011
TP-60 0.5-0.6	SE103092.080	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-61 2.0-2.1	SE103092.084	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-62 0.5-0.6	SE103092.086	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-63 1.0-1.1	SE103092.090	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-64 2.0-2.1	SE103092.093	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-65 1.5-1.6	SE103092.096	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-66 2.0-2.1	SE103092.099	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-67 0.5-0.6	SE103092.101	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-68 1.0-1.1	SE103092.104	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011
TP-69 1.5-1.6	SE103092.108	LB008424	03 Nov 2011	04 Nov 2011	01 Dec 2011	09 Nov 2011	01 Dec 2011	16 Nov 2011

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

No Surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, which is typically 2.5 times the statistically determined method detection limit (MDL).  
 Result is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Units	Control LOR	BLK MB
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**Soluble Anions In Soil by Ion Chromatography Method: ME-(AU)-ENVJAN245**

LB008423.001

Chloride	mg/kg	0.25	<0.25
Sulphate	mg/kg	0.5	<0.5

LB008423.025

Chloride	mg/kg	0.25	<0.25
Sulphate	mg/kg	0.5	<0.5

LB008424.001

Chloride	mg/kg	0.25	<0.25
Sulphate	mg/kg	0.5	<0.5

Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name		SE103092.001-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008328.004

Conductivity (1:5 dry sample basis)	µS/cm	1	32	30	33	7
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pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008341.003

pH	pH Units	-	6.0	6.0	32	0
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Soluble Anions In Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245  
 LB008423.004

Chloride	mg/kg	0.25	13	12	32	5
Sulphate	mg/kg	0.5	8.6	7.6	36	13

Sample Name		SE103092.010-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Moisture Content Method: ME-(AU)-[ENV]AN234  
 LB008334.011

% Moisture	%	0.5	7.5	8.3	36	10
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Sample Name		SE103092.013-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008328.018

Conductivity (1:5 dry sample basis)	µS/cm	1	22	21	35	6
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pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008341.016

pH	pH Units	-	5.5	5.5	32	1
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Sample Name		SE103092.020-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Moisture Content Method: ME-(AU)-[ENV]AN234  
 LB008334.022

% Moisture	%	0.5	13.5	11.0	34	20
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Sample Name		SE103092.022-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008330.005

Conductivity (1:5 dry sample basis)	µS/cm	1	38	40	33	5
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Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name		SE103092.022-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>pH In soil (1:5)</b> Method: ME-(AU)-[ENV]AN101                      LB008342.004</p>						
pH	pH Units	-	6.2	6.1	32	1

Sample Name		SE103092.030-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>Moisture Content</b> Method: ME-(AU)-[ENV]AN234                      LB008336.011</p>						
% Moisture	%	0.5	19.4	20.3	33	5

Sample Name		SE103092.031-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>Conductivity and TDS by Calculation - Soil</b> Method: ME-(AU)-[ENV]AN106                      LB008330.016</p>						
Conductivity (1:5 dry sample basis)	µS/cm	1	47	46	32	2

Sample Name		SE103092.031-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>pH In soil (1:5)</b> Method: ME-(AU)-[ENV]AN101                      LB008342.014</p>						
pH	pH Units	-	6.2	6.3	32	1

Sample Name		SE103092.040-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>Moisture Content</b> Method: ME-(AU)-[ENV]AN234                      LB008336.022</p>						
% Moisture	%	0.5	12.5	13.2	34	6

Sample Name		SE103092.044-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>Conductivity and TDS by Calculation - Soil</b> Method: ME-(AU)-[ENV]AN106                      LB008331.007</p>						
Conductivity (1:5 dry sample basis)	µS/cm	1	140	140	31	1

Sample Name		SE103092.044-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<p><b>pH In soil (1:5)</b> Method: ME-(AU)-[ENV]AN101                      LB008343.006</p>						
pH	pH Units	-	5.1	5.0	32	1

Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name		SE103092.050-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
Moisture Content Method: ME-(AU)-[ENV]AN234 LB008337.011						
% Moisture	%	0.5	16.9	16.2	33	<b>4</b>

Sample Name		SE103092.053-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106 LB008331.018						
Conductivity (1:5 dry sample basis)	µS/cm	1	520	520	30	<b>0</b>

pH In soil (1:5) Method: ME-(AU)-[ENV]AN101 LB008343.017						
pH	pH Units	-	9.5	9.5	31	<b>0</b>

Sample Name		SE103092.060-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
Moisture Content Method: ME-(AU)-[ENV]AN234 LB008337.022						
% Moisture	%	0.5	18.5	18.9	33	<b>2</b>

Sample Name		SE103092.061-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106 LB008333.005						
Conductivity (1:5 dry sample basis)	µS/cm	1	72	74	31	<b>3</b>

pH In soil (1:5) Method: ME-(AU)-[ENV]AN101 LB008344.003						
pH	pH Units	-	6.5	6.5	32	<b>1</b>

Sample Name		SE103092.062-DUP				
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245 LB008424.005						
Chloride	mg/kg	0.25	560	560	30	<b>2</b>
Sulphate	mg/kg	0.5	190	190	30	<b>2</b>



## DUPLICATES

SE103092 R0

Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $\text{MaxAllowableDifference} = 100 \times \text{StatisticalDetectionLimit} / \text{Mean} + \text{LimitingRepeatability}$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name			SE103092.070-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Moisture Content</b> Method: ME-(AU)-[ENV]AN234						
LB008339.011						
% Moisture	%	0.5	10.9	10.9	35	<b>1</b>

Sample Name			SE103092.073-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Conductivity and TDS by Calculation - Soil</b> Method: ME-(AU)-[ENV]AN106						
LB008333.019						
Conductivity (1:5 dry sample basis)	µS/cm	1	180	180	31	<b>2</b>

<b>pH In soil (1:5)</b> Method: ME-(AU)-[ENV]AN101						
LB008344.017						
pH	pH Units	-	6.8	6.7	31	<b>0</b>

Sample Name			SE103092.080-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Moisture Content</b> Method: ME-(AU)-[ENV]AN234						
LB008339.022						
% Moisture	%	0.5	16.0	16.2	33	<b>2</b>

Sample Name			SE103092.082-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Conductivity and TDS by Calculation - Soil</b> Method: ME-(AU)-[ENV]AN106						
LB008335.006						
Conductivity (1:5 dry sample basis)	µS/cm	1	54	49	32	<b>9</b>

<b>pH In soil (1:5)</b> Method: ME-(AU)-[ENV]AN101						
LB008345.004						
pH	pH Units	-	6.2	6.1	32	<b>1</b>

Sample Name			SE103092.090-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %
<b>Moisture Content</b> Method: ME-(AU)-[ENV]AN234						
LB008340.011						
% Moisture	%	0.5	12.5	11.5	34	<b>9</b>



Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name			SE103092.097-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008335.024

Conductivity (1:5 dry sample basis)	µS/cm	1	290	290	30	0
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pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008345.022

pH	pH Units	-	7.3	7.6	31	3
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Sample Name			SE103092.100-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Molsture Content Method: ME-(AU)-[ENV]AN234  
 LB008340.022

% Moisture	%	0.5	10.7	11.4	35	6
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Sample Name			SE103092.106-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008338.010

Conductivity (1:5 dry sample basis)	µS/cm	1	18	18	36	3
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pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008346.008

pH	pH Units	-	6.0	6.0	32	0
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Sample Name			SE103092.108-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Molsture Content Method: ME-(AU)-[ENV]AN234  
 LB008340.031

% Moisture	%	0.5	22.8	22.5	32	1
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Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report.  
Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Control		LCS STD			
	Units	LOR	Result	Expected Result	Criteria %	Recovery %
<b>pH in soil (1:5) Method: ME-(AU)-[ENV]AN101</b>						
LB008341.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008341.019						
pH	pH Units	-	7.4	7.41	98 - 102	100
LB008342.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008342.019						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008343.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008343.020						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008344.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008344.020						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008345.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008345.020						
pH	pH Units	-	7.4	7.41	98 - 102	99
LB008346.001						
pH	pH Units	-	7.4	7.41	98 - 102	99
<b>Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245</b>						
LB008423.002						
Chloride	mg/kg	0.25	100	100	70 - 130	103
Sulphate	mg/kg	0.5	100	100	70 - 130	104
LB008423.026						
Chloride	mg/kg	0.25	100	100	70 - 130	102
Sulphate	mg/kg	0.5	100	100	70 - 130	102
LB008424.002						
Chloride	mg/kg	0.25	100	100	70 - 130	103
Sulphate	mg/kg	0.5	100	100	70 - 130	102

Matrix spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report. Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spikes were required for this job.

Matrix spike duplicates are calculated as relative percent difference using the formula  $RPD = \frac{|OriginalResult - ReplicateResult|}{Mean} \times 100$ . The original result is the analyte concentration of the matrix spike and the replicate result is the analyte concentration of the matrix spike duplicate. The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times \frac{StatisticalDetectionLimit}{Mean} + LimitingRepeatability$ . RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spike Duplicates were required for this job.

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	NATA Accreditation does not cover this analysis.	NA	The sample was not analysed for this analyte
^	Performed by outside laboratory.		
LOR	Limit of Reporting		

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: <http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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**LABORATORY REPORT COVERSHEET**

**Date:** 17 November 2011

**To:** Geotechnique Pty Ltd  
PO Box 880  
PENRITH NSW 2015

**Attention:** Emged Rizkalla

**Your Reference:** SE103092 - 12576/1 - Marsden Park Precinct  
**Laboratory Report No:** CE74867

**Samples Received:** 10/11/2011  
**Samples / Quantity:** 36 Soils

The above samples were received intact and analysed according to your written instructions. Unless otherwise stated, solid samples are reported on a dry weight basis and liquid samples as received.



**Jon Dicker**  
Manager  
CAIRNS



**Shey Goddard**  
Administration Manager  
CAIRNS

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

### LABORATORY REPORT

<b>Cation Exchange Capacity Suite</b> Our Reference Your Reference Type of Sample Date Sampled	<b>Units</b>	<b>CE74867-1</b> TP-3 0.0-0.1 Soil 31/10/2011	<b>CE74867-2</b> TP-17 1.0-1.1 Soil 31/10/2011	<b>CE74867-3</b> TP-20 0.5-0.6 Soil 31/10/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	24	1,000	920
Sodium (meq%)	meq%	0.10	4.3	4.0
Exchangeable Sodium	%	2	30	46
Potassium, K	mg/kg	90	82	67
Potassium (meq%)	meq%	0.23	0.21	0.17
Exchangeable Potassium	%	5	1	2
Calcium, Ca	mg/kg	660	7	69
Calcium (meq%)	meq%	3.3	0.04	0.35
Exchangeable Calcium	%	68	<1	4
Magnesium, Mg	mg/kg	150	1,200	520
Magnesium (meq%)	meq%	1.2	9.8	4.3
Exchangeable Magnesium	%	25	68	49
CEC	meq%	4.9	14	8.8

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b> Our Reference Your Reference Type of Sample Date Sampled	<b>Units</b>	<b>CE74867-4</b> TP-37 2.0-2.1 Soil 1/11/2011	<b>CE74867-5</b> TP-38 0.5-0.6 Soil 1/11/2011	<b>CE74867-6</b> TP-39 1.0-1.1 Soil 1/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	870	1,000	35
Sodium (meq%)	meq%	3.8	4.3	0.15
Exchangeable Sodium	%	38	32	1
Potassium, K	mg/kg	78	99	89
Potassium (meq%)	meq%	0.20	0.25	0.23
Exchangeable Potassium	%	2	2	2
Calcium, Ca	mg/kg	100	120	1,300
Calcium (meq%)	meq%	0.50	0.60	6.5
Exchangeable Calcium	%	5	4	64
Magnesium, Mg	mg/kg	680	1,000	400
Magnesium (meq%)	meq%	5.6	8.2	3.3
Exchangeable Magnesium	%	55	61	32
CEC	meq%	10	13	10

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b> <b>Our Reference</b> <b>Your Reference</b> <b>Type of Sample</b> <b>Date Sampled</b>	<b>Units</b>	<b>CE74867-7</b> <b>TP-40 1.5-1.6</b> <b>Soil</b> <b>1/11/2011</b>	<b>CE74867-8</b> <b>TP-41 2.0-2.1</b> <b>Soil</b> <b>1/11/2011</b>	<b>CE74867-9</b> <b>TP42 0.0-0.1</b> <b>Soil</b> <b>1/11/2011</b>
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	390	43	65
Sodium (meq%)	meq%	1.7	0.19	0.28
Exchangeable Sodium	%	20	5	2
Potassium, K	mg/kg	87	76	100
Potassium (meq%)	meq%	0.22	0.19	0.26
Exchangeable Potassium	%	3	5	2
Calcium, Ca	mg/kg	550	350	1,400
Calcium (meq%)	meq%	2.7	1.7	7.0
Exchangeable Calcium	%	32	43	60
Magnesium, Mg	mg/kg	470	240	500
Magnesium (meq%)	meq%	3.8	2.0	4.1
Exchangeable Magnesium	%	45	48	35
CEC	meq%	8.5	4.1	12



**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

### LABORATORY REPORT

Cation Exchange Capacity Suite Our Reference Your Reference Type of Sample Date Sampled	Units	CE74867-10 TP-43 1.0-1.1 Soil 1/11/2011	CE74867-11 TP-44 0.5-0.6 Soil 1/11/2011	CE74867-12 TP-45 2.0-2.1 Soil 1/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	1,100	1,000	1,100
Sodium (meq%)	meq%	4.8	4.3	4.8
Exchangeable Sodium	%	40	31	43
Potassium, K	mg/kg	140	76	220
Potassium (meq%)	meq%	0.36	0.19	0.56
Exchangeable Potassium	%	3	1	5
Calcium, Ca	mg/kg	66	130	16
Calcium (meq%)	meq%	0.33	0.65	0.08
Exchangeable Calcium	%	3	5	<1
Magnesium, Mg	mg/kg	780	1,100	700
Magnesium (meq%)	meq%	6.4	9.0	5.7
Exchangeable Magnesium	%	54	63	51
CEC	meq%	12	14	11

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b>	<b>Units</b>	<b>CE74867-13 TP-46 1.5-1.6 Soil 1/11/2011</b>	<b>CE74867-14 TP-47 2.0-2.1 Soil 1/11/2011</b>	<b>CE74867-15 TP-48 1.0-1.1 Soil 1/11/2011</b>
<b>Our Reference</b>				
<b>Your Reference</b>				
<b>Type of Sample</b>				
<b>Date Sampled</b>				
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	860	1,200	86
Sodium (meq%)	meq%	3.7	5.2	0.37
Exchangeable Sodium	%	28	33	2
Potassium, K	mg/kg	160	310	140
Potassium (meq%)	meq%	0.41	0.79	0.36
Exchangeable Potassium	%	3	5	2
Calcium, Ca	mg/kg	10	32	2,900
Calcium (meq%)	meq%	0.05	0.16	14
Exchangeable Calcium	%	<1	1	84
Magnesium, Mg	mg/kg	1,100	1,200	250
Magnesium (meq%)	meq%	9.0	9.8	2.0
Exchangeable Magnesium	%	68	61	12
CEC	meq%	13	16	17

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b> Our Reference Your Reference Type of Sample Date Sampled	<b>Units</b>	<b>CE74867-16</b> TP-49 0.0-0.1 Soil 1/11/2011	<b>CE74867-17</b> TP-50 1.5-1.6 Soil 1/11/2011	<b>CE74867-18</b> TP-51 1.0-1.1 Soil 1/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	40	1,300	830
Sodium (meq%)	meq%	0.17	5.6	3.6
Exchangeable Sodium	%	1	32	14
Potassium, K	mg/kg	310	380	120
Potassium (meq%)	meq%	0.79	0.97	0.31
Exchangeable Potassium	%	6	5	1
Calcium, Ca	mg/kg	1,600	110	3,400
Calcium (meq%)	meq%	8.0	0.55	17
Exchangeable Calcium	%	64	3	65
Magnesium, Mg	mg/kg	430	1,300	640
Magnesium (meq%)	meq%	3.5	11	5.2
Exchangeable Magnesium	%	28	60	20
CEC	meq%	12	18	26

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

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**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b>	<b>Units</b>	<b>CE74867-19 TP-52 1.5-1.6 Soil 1/11/2011</b>	<b>CE74867-20 TP-53 1.0-1.1 Soil 2/11/2011</b>	<b>CE74867-21 TP-54 0.5-0.6 Soil 2/11/2011</b>
<b>Our Reference Your Reference Type of Sample Date Sampled</b>				
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	830	500	1,100
Sodium (meq%)	meq%	3.6	2.2	4.8
Exchangeable Sodium	%	12	19	25
Potassium, K	mg/kg	150	120	180
Potassium (meq%)	meq%	0.38	0.31	0.46
Exchangeable Potassium	%	1	3	2
Calcium, Ca	mg/kg	4,500	1,100	680
Calcium (meq%)	meq%	22	5.5	3.4
Exchangeable Calcium	%	74	49	18
Magnesium, Mg	mg/kg	490	400	1,300
Magnesium (meq%)	meq%	4.0	3.3	11
Exchangeable Magnesium	%	13	29	55
CEC	meq%	31	11	19

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

Cation Exchange Capacity Suite Our Reference Your Reference Type of Sample Date Sampled	Units	CE74867-22 TP-55 0.0-0.1 Soil 2/11/2011	CE74867-23 TP-56 1.5-1.6 Soil 2/11/2011	CE74867-24 TP-57 2.0-2.1 Soil 2/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	290	1,300	1,600
Sodium (meq%)	meq%	1.3	5.6	7.0
Exchangeable Sodium	%	8	42	41
Potassium, K	mg/kg	200	260	200
Potassium (meq%)	meq%	0.51	0.66	0.51
Exchangeable Potassium	%	3	5	3
Calcium, Ca	mg/kg	1,600	29	77
Calcium (meq%)	meq%	8.0	0.15	0.39
Exchangeable Calcium	%	50	1	2
Magnesium, Mg	mg/kg	760	860	1,100
Magnesium (meq%)	meq%	6.2	7.0	9.0
Exchangeable Magnesium	%	39	52	53
CEC	meq%	16	14	17

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b> Our Reference Your Reference Type of Sample Date Sampled	<b>Units</b>	<b>CE74867-25</b> TP-58 0.0-0.1 Soil 2/11/2011	<b>CE74867-26</b> TP-59 1.0-1.1 Soil 2/11/2011	<b>CE74867-27</b> TP-60 0.5-0.6 Soil 3/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	160	990	1,200
Sodium (meq%)	meq%	0.70	4.3	5.2
Exchangeable Sodium	%	5	40	38
Potassium, K	mg/kg	190	97	90
Potassium (meq%)	meq%	0.49	0.25	0.23
Exchangeable Potassium	%	3	2	2
Calcium, Ca	mg/kg	2,100	180	14
Calcium (meq%)	meq%	10	0.90	0.07
Exchangeable Calcium	%	71	8	<1
Magnesium, Mg	mg/kg	390	640	1,000
Magnesium (meq%)	meq%	3.2	5.2	8.2
Exchangeable Magnesium	%	21	49	60
CEC	meq%	15	11	14

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b>	<b>Units</b>	<b>CE74867-28 TP-61 2.0-2.1 Soil 3/11/2011</b>	<b>CE74867-29 TP-62 0.5-0.6 Soil 3/11/2011</b>	<b>CE74867-30 TP-63 1.0-1.1 Soil 3/11/2011</b>
<b>Our Reference</b>				
<b>Your Reference</b>				
<b>Type of Sample</b>				
<b>Date Sampled</b>				
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	910	410	730
Sodium (meq%)	meq%	4.0	1.8	3.2
Exchangeable Sodium	%	37	12	21
Potassium, K	mg/kg	160	130	120
Potassium (meq%)	meq%	0.41	0.33	0.31
Exchangeable Potassium	%	4	2	2
Calcium, Ca	mg/kg	140	810	930
Calcium (meq%)	meq%	0.70	4.0	4.6
Exchangeable Calcium	%	7	27	30
Magnesium, Mg	mg/kg	680	1,100	870
Magnesium (meq%)	meq%	5.6	9.0	7.1
Exchangeable Magnesium	%	52	59	47
CEC	meq%	11	15	15

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b>	<b>Units</b>	<b>CE74867-31 TP-64 2.0-2.1 Soil 3/11/2011</b>	<b>CE74867-32 TP-65 1.5-1.6 Soil 3/11/2011</b>	<b>CE74867-33 TP-66 2.0-2.1 Soil 3/11/2011</b>
<b>Our Reference</b>				
<b>Your Reference</b>				
<b>Type of Sample</b>				
<b>Date Sampled</b>				
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	850	1,200	1,500
Sodium (meq%)	meq%	3.7	5.2	6.5
Exchangeable Sodium	%	31	40	43
Potassium, K	mg/kg	100	57	320
Potassium (meq%)	meq%	0.26	0.15	0.82
Exchangeable Potassium	%	2	1	5
Calcium, Ca	mg/kg	59	110	13
Calcium (meq%)	meq%	0.30	0.55	0.07
Exchangeable Calcium	%	2	4	<1
Magnesium, Mg	mg/kg	930	870	960
Magnesium (meq%)	meq%	7.6	7.1	7.9
Exchangeable Magnesium	%	64	55	52
CEC	meq%	12	13	15



**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b> Our Reference Your Reference Type of Sample Date Sampled	<b>Units</b>	<b>CE74867-34</b> TP-67 0.5-0.6 Soil 3/11/2011	<b>CE74867-35</b> TP-68 1.0-1.1 Soil 3/11/2011	<b>CE74867-36</b> TP-69 1.5-1.6 Soil 3/11/2011
Date Extracted		10/11/2011	10/11/2011	10/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	660	2,300	1,100
Sodium (meq%)	meq%	2.9	10	4.8
Exchangeable Sodium	%	13	34	29
Potassium, K	mg/kg	200	240	370
Potassium (meq%)	meq%	0.51	0.61	0.95
Exchangeable Potassium	%	2	2	6
Calcium, Ca	mg/kg	1,300	85	70
Calcium (meq%)	meq%	6.5	0.43	0.35
Exchangeable Calcium	%	30	1	2
Magnesium, Mg	mg/kg	1,400	2,200	1,300
Magnesium (meq%)	meq%	11	18	11
Exchangeable Magnesium	%	54	62	64
CEC	meq%	21	29	17

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

### LABORATORY REPORT

TEST PARAMETERS	UNITS	LOR	METHOD
Date Extracted			
Date Analysed			
Sodium, Na	mg/kg	2	AN122 / AN320 RL15D3
Sodium (meq%)	meq%	0.01	Calculation
Exchangeable Sodium	%	1	Calculation
Potassium, K	mg/kg	2	AN122 / AN320 RL15D3
Potassium (meq%)	meq%	0.01	Calculation
Exchangeable Potassium	%	1	Calculation
Calcium, Ca	mg/kg	2	AN122 / AN320 RL15D3
Calcium (meq%)	meq%	0.01	Calculation
Exchangeable Calcium	%	1	Calculation
Magnesium, Mg	mg/kg	2	AN122 / AN320 RL15D3
Magnesium (meq%)	meq%	0.01	Calculation
Exchangeable Magnesium	%	1	Calculation
CEC	meq%	0.01	AN122 / AN320 RL15D3

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

QUALITY CONTROL	UNITS	Blank	Duplicate Sm#	Duplicate Sample  Duplicate	Spike Sm#	Spike Recovery
Date Extracted		10/11/11	CE74867-1	10/11/2011    10/11/2011	Batch Spike	-
Date Analysed		15/11/11	CE74867-1	15/11/2011    15/11/2011	Batch Spike	-
Sodium, Na	mg/kg	<2	CE74867-1	24    22    RPD: 9	Batch Spike	90%
Sodium (meq%)	meq%	-	CE74867-1	0.10    0.10    RPD: 0	Batch Spike	-
Exchangeable Sodium	%	-	CE74867-1	2    2    RPD: 0	Batch Spike	-
Potassium, K	mg/kg	<2	CE74867-1	90    90    RPD: 0	Batch Spike	90%
Potassium (meq%)	meq%	-	CE74867-1	0.23    0.23    RPD: 0	Batch Spike	-
Exchangeable Potassium	%	-	CE74867-1	5    5    RPD: 0	Batch Spike	-
Calcium, Ca	mg/kg	<2	CE74867-1	660    660    RPD: 0	Batch Spike	93%
Calcium (meq%)	meq%	-	CE74867-1	3.3    3.3    RPD: 0	Batch Spike	-
Exchangeable Calcium	%	-	CE74867-1	68    68    RPD: 0	Batch Spike	-
Magnesium, Mg	mg/kg	<2	CE74867-1	150    150    RPD: 0	Batch Spike	91%
Magnesium (meq%)	meq%	-	CE74867-1	1.2    1.2    RPD: 0	Batch Spike	-
Exchangeable Magnesium	%	-	CE74867-1	25    25    RPD: 0	Batch Spike	-
CEC	meq%	-	CE74867-1	4.9    4.9    RPD: 0	Batch Spike	-

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

QUALITY CONTROL	UNITS	Blank	Duplicate Sm#	Duplicate
				Sample  Duplicate
Date Extracted		[NT]	CE74867-11	10/11/2011    10/11/2011
Date Analysed		[NT]	CE74867-11	15/11/2011    15/11/2011
Sodium, Na	mg/kg	[NT]	CE74867-11	1000    1000    RPD: 0
Sodium (meq%)	meq%	[NT]	CE74867-11	4.3    4.3    RPD: 0
Exchangeable Sodium	%	[NT]	CE74867-11	31    32    RPD: 3
Potassium, K	mg/kg	[NT]	CE74867-11	76    75    RPD: 1
Potassium (meq%)	meq%	[NT]	CE74867-11	0.19    0.19    RPD: 0
Exchangeable Potassium	%	[NT]	CE74867-11	1    1    RPD: 0
Calcium, Ca	mg/kg	[NT]	CE74867-11	130    130    RPD: 0
Calcium (meq%)	meq%	[NT]	CE74867-11	0.65    0.65    RPD: 0
Exchangeable Calcium	%	[NT]	CE74867-11	5    5    RPD: 0
Magnesium, Mg	mg/kg	[NT]	CE74867-11	1100    1000    RPD: 10
Magnesium (meq%)	meq%	[NT]	CE74867-11	9.0    8.2    RPD: 9
Exchangeable Magnesium	%	[NT]	CE74867-11	63    61    RPD: 3
CEC	meq%	[NT]	CE74867-11	14    13    RPD: 7

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

QUALITY CONTROL	UNITS	Blank	Duplicate Sm#	Duplicate
				Sample  Duplicate
Date Extracted		[NT]	CE74867-21	10/11/2011    10/11/2011
Date Analysed		[NT]	CE74867-21	15/11/2011    15/11/2011
Sodium, Na	mg/kg	[NT]	CE74867-21	1100    1100    RPD: 0
Sodium (meq%)	meq%	[NT]	CE74867-21	4.8    4.8    RPD: 0
Exchangeable Sodium	%	[NT]	CE74867-21	25    25    RPD: 0
Potassium, K	mg/kg	[NT]	CE74867-21	180    170    RPD: 6
Potassium (meq%)	meq%	[NT]	CE74867-21	0.46    0.43    RPD: 7
Exchangeable Potassium	%	[NT]	CE74867-21	2    2    RPD: 0
Calcium, Ca	mg/kg	[NT]	CE74867-21	680    680    RPD: 0
Calcium (meq%)	meq%	[NT]	CE74867-21	3.4    3.4    RPD: 0
Exchangeable Calcium	%	[NT]	CE74867-21	18    18    RPD: 0
Magnesium, Mg	mg/kg	[NT]	CE74867-21	1300    1300    RPD: 0
Magnesium (meq%)	meq%	[NT]	CE74867-21	11    11    RPD: 0
Exchangeable Magnesium	%	[NT]	CE74867-21	55    55    RPD: 0
CEC	meq%	[NT]	CE74867-21	19    19    RPD: 0

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

**LABORATORY REPORT**

QUALITY CONTROL	UNITS	Blank	Duplicate Sm#	Duplicate
				Sample  Duplicate
Date Extracted		[NT]	CE74867-31	10/11/2011    10/11/2011
Date Analysed		[NT]	CE74867-31	15/11/2011    15/11/2011
Sodium, Na	mg/kg	[NT]	CE74867-31	850    840    RPD: 1
Sodium (meq%)	meq%	[NT]	CE74867-31	3.7    3.6    RPD: 3
Exchangeable Sodium	%	[NT]	CE74867-31	31    31    RPD: 0
Potassium, K	mg/kg	[NT]	CE74867-31	100    100    RPD: 0
Potassium (meq%)	meq%	[NT]	CE74867-31	0.26    0.26    RPD: 0
Exchangeable Potassium	%	[NT]	CE74867-31	2    2    RPD: 0
Calcium, Ca	mg/kg	[NT]	CE74867-31	59    60    RPD: 2
Calcium (meq%)	meq%	[NT]	CE74867-31	0.30    0.30    RPD: 0
Exchangeable Calcium	%	[NT]	CE74867-31	2    3    RPD: 40
Magnesium, Mg	mg/kg	[NT]	CE74867-31	930    920    RPD: 1
Magnesium (meq%)	meq%	[NT]	CE74867-31	7.6    7.5    RPD: 1
Exchangeable Magnesium	%	[NT]	CE74867-31	64    64    RPD: 0
CEC	meq%	[NT]	CE74867-31	12    12    RPD: 0



**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103092 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74867

## LABORATORY REPORT

### NOTES:

LOR - Limit of Reporting.

The significance of all reported results are defined by their analytical limit of reporting.

**Analysis Date:** Between 10/11/11 and 17/11/11

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Unless otherwise stated the results shown in this test report only refer to the sample(s) tested and such sample(s) are only retained for 60 days only. This document cannot be reproduced except in full, without prior approval of the Company.



# G EOTECHNIQUE PTY LTD

received 04/11/11  
 By: S.S. 2:30 pm  
 Time: 2:30 pm  
 Sample Intact  
 Ice/Cooler Pack  
 Temperature on Return 20.2  
 Storage Location: Cool room SKLP  
 SE 103092

CAC 7/11/2011 @ 1:42 pm

## Laboratory Test Request / Chain of Custody Record

Lenko Place  
 PENRITH NSW 2750  
 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

Project Manager: ER  
 Location: Northwest Growth Centre, Marsden Park  
 Sampling By: AN  
 Job No: 12576/1  
 Project: Marsden Park Precinct  
 Page 1 of 9

TO: SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015  
 PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS  
 FAX: 02 8594 0499

Location		Depth (m)	Date	Time	Soil	Water	Results required by:				KEEP SAMPLE	
1	TP-3	0.0 - 0.1	31/10/2011		DSP		EC	pH	Sulphate	Chloride	ESP	YES
2		0.5-0.6			DSP		✓	✓	✓	✓		YES
3		1.5-1.6			DSP		✓	✓	✓	✓		YES
4	TP-17	0.0-0.1	31/10/2011		DSP		✓	✓	✓	✓		YES
5		1.0-1.1			DSP		✓	✓	✓	✓		YES
6		2.0-2.1			DSP		✓	✓	✓	✓		YES
7	TP-20	0.0-0.1	31/10/2011		DSP		✓	✓	✓	✓		YES
8		0.5-0.6			DSP		✓	✓	✓	✓		YES
9		1.5-1.6			DSP		✓	✓	✓	✓		YES
10	TP-37	0.0-0.1	1/11/2011		DSP		✓	✓	✓	✓		YES
11		1.0-1.1			DSP		✓	✓	✓	✓		YES
12		2.0-2.1			DSP		✓	✓	✓	✓		YES

Relinquished by: ER  
 Signature: ER  
 Date: 4/11/2011

Received by: Suba  
 Signature: Suba  
 Date: 04/11/11 2:30 pm

Legend:  
 W/G Water sample, glass bottle  
 W/P Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \*Purge & Trap @ mole H<sup>2</sup>/tonne  
 # Geotechnique Screen



Lemko Place  
 PENRITH NSW 2750  
 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

**TO: SGS ENVIRONMENTAL SERVICES**  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

**PH: 02 8594 0400**  
**ATTN: MS ANGELA MAMALICOS**

**FAX: 02 8594 0499**  
**Project Manager: ER**  
**Location: Northwest Growth Centre, Marsden Park**

**Sampling By: AN**  
**Job No: 12576/1**  
**Project: Marsden Park Precinct**

### Results required by:

Location	Depth (m)	Date	Time	Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
				Soil	Water						
13 TP-38	0.0-0.1	1/11/2011		DSP		✓	✓				YES
14	0.5-0.6			DSP		✓	✓	✓	✓		YES
15	1.5-1.6			DSP		✓	✓				YES
16 TP-39	0.0-0.1	1/11/2011		DSP		✓	✓				YES
17	1.0-1.1			DSP		✓	✓	✓	✓		YES
18	2.0-2.1			DSP		✓	✓				YES
19 TP-40	0.0-0.1	1/11/2011		DSP		✓	✓				YES
20	0.5-0.6			DSP		✓	✓				YES
21	1.5-1.6			DSP		✓	✓	✓	✓		YES
22 TP-41	0.0-0.1			DSP		✓	✓				YES
23	1.0-1.1			DSP		✓	✓				YES
24	2.0-2.1			DSP		✓	✓	✓	✓		YES

Relinquished by: \_\_\_\_\_ Signature: ER Date: 4/11/2011  
 Received by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: 2/3/11

**Legend:**  
 WG Water sample, glass bottle      USG Undisturbed soil sample (glass jar)      DSP Disturbed soil sample (small plastic bag)      \* Purge & Trap      @ mole H/Tonne  
 WP Water sample, plastic bottle      DSG Disturbed soil sample (glass jar)      ✓ Test required      # Geotechnique Screen

Lenko Place  
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TO: SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS  
 FAX: 02 8594 0499

Project Manager: ER

Location: Northwest Growth Centre, Marsden Park

Project: Marsden Park Precinct

Sampling By: AN

Job No: 12576/1

**Results required by:**

Location	Sampling details			Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water						
25 TP-42	0.0-0.1	1/11/2011		DSP		✓	✓	✓	✓		YES
26	0.5-0.6			DSP		✓	✓				YES
27	1.5-1.6			DSP		✓	✓				YES
28 TP-43	0.0-0.1	1/11/2011		DSP		✓	✓				YES
29	1.0-1.1			DSP		✓	✓	✓	✓		YES
30	2.0-2.1			DSP		✓	✓				YES
31 TP-44	0.0-0.1	1/11/2011		DSP		✓	✓	✓	✓		YES
32	0.5-0.6			DSP		✓	✓				YES
33	1.5-1.6			DSP		✓	✓				YES
34 TP-45	0.0-0.1	1/11/2011		DSP		✓	✓				YES
35	1.0-1.1			DSP		✓	✓				YES
36	2.0-2.1			DSP		✓	✓	✓	✓		YES

Relinquished by

Name: Emged Rizkalla  
 Signature: ER

Date: 4/11/2011

Received by

Name: Suba  
 Signature: [Signature]

Date: 04/11/2011

Legend:  
 WG Water sample, glass bottle  
 WP Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \* Purge & Trap @ mole H<sup>2</sup>/tonne  
 # Geotechnique Screen

Lemko Place  
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 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

Project Manager: ER  
 Location: Northwest Growth Centre, Marsden Park  
 Sampling By: AN  
 Job No: 12576/1  
 Project: Marsden Park Precinct  
 Page 4 of 9

TO: SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS  
 FAX: 02 8594 0499

### Results required by:

Location	Sampling details			Sample type	Soil	Water	Results required by:					KEEP SAMPLE	
	Depth (m)	Date	Time				EC	pH	Sulphate	Chloride	ESP		
37 TP-46	0.0-0.1	1/11/2011		DSP			✓						YES
38	0.5-0.6			DSP			✓						YES
39	1.5-1.6			DSP			✓	✓					YES
40 TP-47	0.0-0.1	1/11/2011		DSP			✓						YES
41	1.0-1.1			DSP			✓						YES
42	2.0-2.1			DSP			✓	✓					YES
43 TP-48	0.0-0.1	1/11/2011		DSP			✓						YES
44	0.5-0.6			DSP			✓						YES
45	1.0-1.1			DSP			✓	✓					YES
46 TP-49	0.0-0.1	1/11/2011		DSP			✓		✓				YES
47	1.0-1.1			DSP			✓						YES
48	2.0-2.1			DSP			✓						YES

Relinquished by: Signature ER Date 4/11/2011  
 Received by: Signature *[Signature]* Date *[Signature]*

Legend:  
 WG Water sample, glass bottle USG Undisturbed soil sample (glass jar) DSP Disturbed soil sample (small plastic bag) \* Purge & Trap @ mole H<sup>2</sup>tonne  
 WP Water sample, plastic bottle DSG Disturbed soil sample (glass jar) ✓ Test required # Geotechnique Screen

Lemko Place  
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Page 5 of 9  
 Job No: 12576/1

**TO: SGS ENVIRONMENTAL SERVICES**  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

Project: Marsden Park Precinct  
 Project Manager: ER

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS  
 FAX: 02 8594 0499

Location: Northwest Growth Centre, Marsden Park

### Results required by:

Location	Sampling details			Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water						
49 TP-50	0.0-0.1	1/11/2011		DSP		✓	✓				YES
50	0.5-0.6			DSP		✓	✓				YES
51	1.5-1.6			DSP		✓	✓	✓			YES
52 TP-51	0.0-0.1	1/11/2011		DSP		✓	✓		✓		YES
53	1.0-1.1			DSP		✓	✓	✓			YES
54	2.0-2.1			DSP		✓	✓		✓		YES
55 TP-52	0.0-0.1	1/11/2011		DSP		✓	✓				YES
56	0.5-0.6			DSP		✓	✓				YES
57	1.5-1.6			DSP		✓	✓	✓			YES
58 TP-53	0.0-0.1	2/11/2011		DSP		✓	✓			✓	YES
59	1.0-1.1			DSP		✓	✓		✓		YES
60	2.0-2.1			DSP		✓	✓				YES

Relinquished by: ER  
 Signature: ER  
 Date: 4/11/2011  
 Received by: *[Signature]*  
 Signature: *[Signature]*  
 Date: *04/11/2011*

Legend:  
 WG Water sample, glass bottle  
 WP Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \* Purge & Trap  
 # Geotechnique Screen  
 @ mole H<sup>+</sup>/tonne

Lemko Place  
PENRITH NSW 2750

P O Box 880  
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**TO: SGS ENVIRONMENTAL SERVICES**  
UNIT 16  
33 MADDOX STREET  
ALEXANDRIA NSW 2015

**FAX: 02 8594 0499**

**Project Manager: ER**

**Location: Northwest Growth Centre, Marsden Park**

**PH: 02 8594 0400**  
**ATTN: MS ANGELA MAMALICOS**

**FAX: 02 8594 0499**

**Project Manager: ER**

**Location: Northwest Growth Centre, Marsden Park**

**Sampling By: AN**

**Job No: 12576/1**

**Project: Marsden Park Precinct**

**Results required by:**

Location	Sampling details			Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water						
61 TP-54	0.0-0.1	2/11/2011		DSP		✓	✓				YES
62	0.5-0.6			DSP		✓	✓			✓	YES
63	1.5-1.6			DSP		✓	✓				YES
64 TP-55	0.0-0.1	2/11/2011		DSP		✓	✓			✓	YES
65	1.0-1.1			DSP		✓	✓				YES
66	2.0-2.1			DSP		✓	✓				YES
67 TP-56	0.0-0.1	2/11/2011		DSP		✓	✓				YES
68	0.5-0.6			DSP		✓	✓				YES
69	1.5-1.6			DSP		✓	✓			✓	YES
70 TP-57	0.0-0.1	2/11/2011		DSP		✓	✓				YES
71	1.0-1.1			DSP		✓	✓				YES
72	2.0-2.1			DSP		✓	✓			✓	YES

Relinquished by

Name: Emerged Rizkalla  
Signature: ER

Date: 4/11/2011

Name: Sara

Signature: [Signature]

Date: 04/11/2011

<p>Legend:</p> <p>WG Water sample, glass bottle</p> <p>WP Water sample, plastic bottle</p>	<p>USG Undisturbed soil sample (glass jar)</p> <p>DSG Disturbed soil sample (glass jar)</p> <p>DSP Disturbed soil sample (small plastic bag)</p> <p>* Purge &amp; Trap @ mole H<sup>2</sup> Konne</p>
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Lemko Place  
 PENRITH NSW 2750  
 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

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**TO:** SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

**PH:** 02 8594 0400  
**ATTN:** MS ANGELA MAMALICOS

**Project Manager:** ER  
**Location:** Northwest Growth Centre, Marsden Park  
**Project:** Marsden Park Precinct  
**Job No:** 12576/1

**FAX:** 02 8594 0499

Location		Sampling details			Sample type		Results required by:					KEEP SAMPLE
		Depth (m)	Date	Time	Soil	Water	EC	pH	Sulphate	Chloride	ESP	
73	TP-58	0.0-0.1	2/11/2011		DSP		✓	✓	✓	✓		YES
74		0.5-0.6			DSP		✓					YES
75		1.5-1.6			DSP		✓					YES
76	TP-59	0.0-0.1	2/11/2011		DSP		✓					YES
77		1.0-1.1			DSP		✓	✓	✓	✓		YES
78		2.0-2.1			DSP		✓					YES
79	TP-60	0.0-0.1	3/11/2011		DSP		✓					YES
80		0.5-0.6			DSP		✓	✓	✓	✓		YES
81		1.0-1.1			DSP		✓					YES
82	TP-61	0.0-0.1	3/11/2011		DSP		✓					YES
83		1.0-1.1			DSP		✓					YES
84		2.0-2.1			DSP		✓	✓	✓	✓		YES

**Relinquished by:** Enged Rizkalla  
**Signature:** ER  
**Date:** 4/11/2011

**Received by:** *[Signature]*  
**Signature:** *[Signature]*  
**Date:** 04/11/2011

**Legend:**  
 WG Water sample, glass bottle      USG Undisturbed soil sample (glass jar)      DSP Disturbed soil sample (small plastic bag)      \* Purge & Trap      @ mole H<sup>1</sup>tonne  
 W/P Water sample, plastic bottle      DSG Disturbed soil sample (glass jar)      ✓ Test required

Lemko Place  
 PENRITH NSW 2750  
 P O Box 880  
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 Fax: (02) 4722 6161  
 email: info@geotech.com.au

Page 8 of 9  
 Job No: 12576/1  
 Project: Marsden Park Precinct

TO: SGS ENVIRONMENTAL SERVICES  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

FAX: 02 8594 0499

Project Manager: ER

Location: Northwest Growth Centre, Marsden Park

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS

### Results required by:

Location	Sampling details			Sample type		EC	pH	Sulphate	Chloride	ESP	KEEP SAMPLE
	Depth (m)	Date	Time	Soil	Water						
TP-62	0.0-0.1	3/11/2011		DSP		✓	✓				YES
TP-62	0.5-0.6			DSP		✓	✓			✓	YES
TP-63	1.5-1.6			DSP		✓	✓				YES
TP-63	0.0-0.1	3/11/2011		DSP		✓	✓				YES
TP-63	0.5-0.6			DSP		✓	✓			✓	YES
TP-64	1.0-1.1			DSP		✓	✓				YES
TP-64	0.0-0.1	3/11/2011		DSP		✓	✓				YES
TP-65	1.0-1.1			DSP		✓	✓				YES
TP-65	2.0-2.1			DSP		✓	✓			✓	YES
TP-65	0.0-0.1	3/11/2011		DSP		✓	✓				YES
TP-65	0.5-0.6			DSP		✓	✓				YES
TP-65	1.5-1.6			DSP		✓	✓			✓	YES

Relinquished by: Emged Rizkalla  
 Signature: ER  
 Date: 4/11/2011

Received by: *Suba*  
 Signature: *[Signature]*  
 Date: *04/11/2011*

Legend:  
 WG Water sample, glass bottle  
 WP Water sample, plastic bottle  
 USG Undisturbed soil sample (glass jar)  
 DSG Disturbed soil sample (glass jar)  
 DSP Disturbed soil sample (small plastic bag)  
 \* Purge & Trap @ mole H<sup>2</sup>/tonne  
 # Geotechnique Screen

Lemko Place  
 PENRITH NSW 2750  
 P O Box 880  
 PENRITH NSW 2751  
 Tel: (02) 4722 2700  
 Fax: (02) 4722 6161  
 email: info@geotech.com.au

Project: Marsden Park Precinct  
 Job No: 12576/1  
 Page 9 of 9

**TO: SGS ENVIRONMENTAL SERVICES**  
 UNIT 16  
 33 MADDOX STREET  
 ALEXANDRIA NSW 2015

PH: 02 8594 0400  
 ATTN: MS ANGELA MAMALICOS  
 FAX: 02 8594 0499

Project Manager: ER  
 Location: Northwest Growth Centre, Marsden Park

### Results required by:

Location	Sampling details			Soil	Water	Results required by:					KEEP SAMPLE
	Depth (m)	Date	Time			EC	pH	Sulphate	Chloride	ESP	
TP-66	0.0-0.1	3/11/2011		DSP		✓					YES
TP-66	1.0-1.1			DSP		✓					YES
TP-66	2.0-2.1			DSP		✓		✓			YES
TP-67	0.0-0.1	3/11/2011		DSP		✓			✓		YES
TP-67	0.5-0.6			DSP		✓			✓		YES
TP-68	1.5-1.6			DSP		✓					YES
TP-68	0.0-0.1	3/11/2011		DSP		✓		✓			YES
TP-68	1.0-1.1			DSP		✓			✓		YES
TP-68	2.0-2.1			DSP		✓					YES
TP-69	0.0-0.1	3/11/2011		DSP		✓					YES
TP-69	0.5-0.6			DSP		✓					YES
TP-69	1.5-1.6			DSP		✓			✓		YES

Relinquished by: ER Signature: [Signature] Date: 4/11/2011  
 Received by: [Signature] Signature: [Signature] Date: 04/11/2011

Legend: W/G Water sample, glass bottle USG Undisturbed soil sample (glass jar) DSP Disturbed soil sample (small plastic bag) \*Purge & Trap @mole H<sup>2</sup>/tonne  
 W/P Water sample, plastic bottle DSG Disturbed soil sample (glass jar) ✓ Test required # Geotechnique Screen





## SAMPLE RECEIPT ADVICE

SE103092

### CLIENT DETAILS

Contact Emged Rizkalla  
Client Geotechnique  
Address P.O. Box 880  
PENRITH NSW 2751

Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email Emged@geotech.com.au

Project **12576/1 - Marsden Park Precinct**  
Order Number (Not specified)  
Samples 108

### LABORATORY DETAILS

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

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

Samples Received Fri 4/11/2011  
Report Due Wed 16/11/2011  
SGS Reference **SE103092**

### SUBMISSION DETAILS

This is to confirm that 108 samples were received on Friday 4/11/2011. Results are expected to be ready by Wednesday 16/11/2011. Please quote SGS reference SE103092 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	108 Soils	Type of documentation received	COC
Date documentation received	7/11/11@1:42pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	20°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

### COMMENTS

Site: Northwest Growth Centre, Marsden Park  
ESP subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
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SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
001	TP-3 0.0-0.1	1	11	1	1	2
002	TP-3 0.5-0.6	1	-	1	1	-
003	TP-3 1.5-1.6	1	-	1	1	-
004	TP-17 0.0-0.1	1	-	1	1	-
005	TP-17 1.0-1.1	1	11	1	1	2
006	TP-17 2.0-2.1	1	-	1	1	-
007	TP-20 0.0-0.1	1	-	1	1	-
008	TP-20 0.5-0.6	1	11	1	1	2
009	TP-20 1.5-1.6	1	-	1	1	-
010	TP-37 0.0-0.1	1	-	1	1	-
011	TP-37 1.0-1.1	1	-	1	1	-
012	TP-37 2.0-2.1	1	11	1	1	2
013	TP-38 0.0-0.1	1	-	1	1	-
014	TP-38 0.5-0.6	1	11	1	1	2
015	TP-38 1.5-1.6	1	-	1	1	-
016	TP-39 0.0-0.1	1	-	1	1	-
017	TP-39 1.0-1.1	1	11	1	1	2
018	TP-39 2.0-2.1	1	-	1	1	-
019	TP-40 0.0-0.1	1	-	1	1	-
020	TP-40 0.5-0.6	1	-	1	1	-
021	TP-40 1.5-1.6	1	11	1	1	2
022	TP-41 0.0-0.1	1	-	1	1	-
023	TP-41 1.0-1.1	1	-	1	1	-
024	TP-41 2.0-2.1	1	11	1	1	2

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
025	TP-42 0.0-0.1	1	11	1	1	2
026	TP-42 0.5-0.6	1	-	1	1	-
027	TP-42 1.5-1.6	1	-	1	1	-
028	TP-43 0.0-0.1	1	-	1	1	-
029	TP-43 1.0-1.1	1	11	1	1	2
030	TP-43 2.0-2.1	1	-	1	1	-
031	TP-44 0.0-0.1	1	-	1	1	-
032	TP-44 0.5-0.6	1	11	1	1	2
033	TP-44 1.5-1.6	1	-	1	1	-
034	TP-45 0.0-0.1	1	-	1	1	-
035	TP-45 1.0-1.1	1	-	1	1	-
036	TP-45 2.0-2.1	1	11	1	1	2
037	TP-46 0.0-0.1	1	-	1	1	-
038	TP-46 0.5-0.6	1	-	1	1	-
039	TP-46 1.5-1.6	1	11	1	1	2
040	TP-47 0.0-0.1	1	-	1	1	-
041	TP-47 1.0-1.1	1	-	1	1	-
042	TP-47 2.0-2.1	1	11	1	1	2
043	TP-48 0.0-0.1	1	-	1	1	-
044	TP-48 0.5-0.6	1	-	1	1	-
045	TP-48 1.0-1.1	1	11	1	1	2
046	TP-49 0.0-0.1	1	11	1	1	2
047	TP-49 1.0-1.1	1	-	1	1	-
048	TP-49 2.0-2.1	1	-	1	1	-

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
049	TP-50 0.0-0.1	1	-	1	1	-
050	TP-50 0.5-0.6	1	-	1	1	-
051	TP-50 1.5-1.6	1	11	1	1	2
052	TP-51 0.0-0.1	1	-	1	1	-
053	TP-51 1.0-1.1	1	11	1	1	2
054	TP-51 2.0-2.1	1	-	1	1	-
055	TP-52 0.0-0.1	1	-	1	1	-
056	TP-52 0.5-0.6	1	-	1	1	-
057	TP-52 1.5-1.6	1	11	1	1	2
058	TP-53 0.0-0.1	1	-	1	1	-
059	TP-53 1.0-1.1	1	11	1	1	2
060	TP-53 2.0-2.1	1	-	1	1	-
061	TP-54 0.0-0.1	1	-	1	1	-
062	TP-54 0.5-0.6	1	11	1	1	2
063	TP-54 1.5-1.6	1	-	1	1	-
064	TP-55 0.0-0.1	1	11	1	1	2
065	TP-55 1.0-1.1	1	-	1	1	-
066	TP-55 2.0-2.1	1	-	1	1	-
067	TP-56 0.0-0.1	1	-	1	1	-
068	TP-56 0.5-0.6	1	-	1	1	-
069	TP-56 1.5-1.6	1	11	1	1	2
070	TP-57 0.0-0.1	1	-	1	1	-
071	TP-57 1.0-1.1	1	-	1	1	-
072	TP-57 2.0-2.1	1	11	1	1	2

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
073	TP-58 0.0-0.1	1	11	1	1	2
074	TP-58 0.5-0.6	1	-	1	1	-
075	TP-58 1.5-1.6	1	-	1	1	-
076	TP-59 0.0-0.1	1	-	1	1	-
077	TP-59 1.0-1.1	1	11	1	1	2
078	TP-59 2.0-2.1	1	-	1	1	-
079	TP-60 0.0-0.1	1	-	1	1	-
080	TP-60 0.5-0.6	1	11	1	1	2
081	TP-60 1.0-1.1	1	-	1	1	-
082	TP-61 0.0-0.1	1	-	1	1	-
083	TP-61 1.0-1.1	1	-	1	1	-
084	TP-61 2.0-2.1	1	11	1	1	2
085	TP-62 0.0-0.1	1	-	1	1	-
086	TP-62 0.5-0.6	1	11	1	1	2
087	TP-62 1.5-1.6	1	-	1	1	-
088	TP-63 0.0-0.1	1	-	1	1	-
089	TP-63 0.5-0.6	1	-	1	1	-
090	TP-63 1.0-1.1	1	11	1	1	2
091	TP-64 0.0-0.1	1	-	1	1	-
092	TP-64 1.0-1.1	1	-	1	1	-
093	TP-64 2.0-2.1	1	11	1	1	2
094	TP-65 0.0-0.1	1	-	1	1	-
095	TP-65 0.5-0.6	1	-	1	1	-
096	TP-65 1.5-1.6	1	11	1	1	2

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

CLIENT DETAILS

Client	Geotechnique	Project	12576/1 - Marsden Park Precinct
--------	--------------	---------	---------------------------------

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	Exchangeable Cations and Cation Exchange Capacity	Moisture Content	pH in soil (1:5)	Soluble Anions in Soil by Ion Chromatography
097	TP-66 0.0-0.1	1	-	1	1	-
098	TP-66 1.0-1.1	1	-	1	1	-
099	TP-66 2.0-2.1	1	11	1	1	2
100	TP-67 0.0-0.1	1	-	1	1	-
101	TP-67 0.5-0.6	1	11	1	1	2
102	TP-67 1.5-1.6	1	-	1	1	-
103	TP-68 0.0-0.1	1	-	1	1	-
104	TP-68 1.0-1.1	1	11	1	1	2
105	TP-68 2.0-2.1	1	-	1	1	-
106	TP-69 0.0-0.1	1	-	1	1	-
107	TP-69 0.5-0.6	1	-	1	1	-
108	TP-69 1.5-1.6	1	11	1	1	2

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

## CLIENT DETAILS

Contact **Emged Rizkalla**  
 Geotechnique  
 Client Address **P.O. Box 880  
 PENRITH NSW 2751**

Telephone **02 4722 2700**  
 Facsimile **02 4722 6161**  
 Email **Emged@geotech.com.au**

Project **12576/1 - Marsden Park Precinct**  
 Order Number **(Not specified)**  
 Samples **15**

## LABORATORY DETAILS

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

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

SGS Reference **SE103128 R0**  
 Report Number **0000012040**  
 Date Reported **17 Nov 2011**  
 Date Received **07 Nov 2011**

## COMMENTS

The document is issued in accordance with NATA's accreditation requirements.  
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

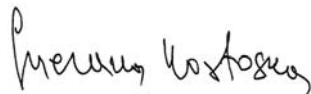
ESP subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146, CE74851

Site: Northwest Growth Centre, Marsden Park.

## SIGNATORIES



**Dong Liang**  
 Inorganics Metals Team Leader



**Snezana Kostoska**  
 Inorganics Chemist

Parameter	Units	LOR	SE103128.001	SE103128.002	SE103128.003	SE103128.004	SE103128.005
Sample Number			SE103128.001	SE103128.002	SE103128.003	SE103128.004	SE103128.005
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011
Sample Name			TP-70 0.0-0.1	TP-70 1.5-1.6	TP-71 0.5-0.6	TP-71 2.0-2.1	TP-72 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	140	910	1100	220	630
-------------------------------------	-------	---	-----	-----	------	-----	-----

**pH in soil (1:5) Method: AN101**

pH	pH Units	-	6.5	4.8	8.2	8.0	4.6
----	----------	---	-----	-----	-----	-----	-----

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	840	-	-	-
Sulphate	mg/kg	0.5	-	400	-	-	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	13.1	16.6	17.3	9.9	16.5
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Parameter	Units	LOR	SE103128.006	SE103128.007	SE103128.008	SE103128.009	SE103128.010
Sample Number			SE103128.006	SE103128.007	SE103128.008	SE103128.009	SE103128.010
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011
Sample Name			TP-73 1.5-1.6	TP-74 0.0-0.1	TP-75 0.5-0.6	TP-75 1.5-1.6	TP-76 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	1100	830	500	640	780
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**pH in soil (1:5) Method: AN101**

pH	pH Units	-	4.6	6.3	4.8	4.5	4.6
----	----------	---	-----	-----	-----	-----	-----

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	1100	-	-	500	-
Sulphate	mg/kg	0.5	290	-	-	340	-

**Moisture Content Method: AN234**

% Moisture	%	0.5	20.0	25.1	16.9	19.0	22.2
------------	---	-----	------	------	------	------	------

Parameter	Units	LOR	SE103128.011	SE103128.012	SE103128.013	SE103128.014	SE103128.015
Sample Number			SE103128.011	SE103128.012	SE103128.013	SE103128.014	SE103128.015
Sample Matrix			Soil	Soil	Soil	Soil	Soil
Sample Date			04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011
Sample Name			TP-77 0.0-0.1	TP-77 1.5-1.6	TP-78 0.0-0.1	TP-79 0.5-0.6	TP-80 1.0-1.1

**Conductivity and TDS by Calculation - Soil Method: AN106**

Conductivity (1:5 dry sample basis)	µS/cm	1	150	240	160	310	830
-------------------------------------	-------	---	-----	-----	-----	-----	-----

**pH in soil (1:5) Method: AN101**

pH	pH Units	-	5.3	4.9	5.5	4.9	4.4
----	----------	---	-----	-----	-----	-----	-----

**Soluble Anions in Soil by Ion Chromatography Method: AN245**

Chloride	mg/kg	0.25	-	140	-	310	-
Sulphate	mg/kg	0.5	-	73	-	140	-





# ANALYTICAL REPORT

SE103128 R0

Sample Number	SE103128.011	SE103128.012	SE103128.013	SE103128.014	SE103128.015
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011	04 Nov 2011
Sample Name	TP-77 0.0-0.1	TP-77 1.5-1.6	TP-78 0.0-0.1	TP-79 0.5-0.6	TP-80 1.0-1.1

Parameter

Units

LOR

Moisture Content Method: AN234

% Moisture	%	0.5	11.8	17.1	8.5	14.2	15.1
------------	---	-----	------	------	-----	------	------

MB blank results are compared to the Limit of Reporting  
 LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.  
 DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

**Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Conductivity (1:5 dry sample basis)	LB008540	µS/cm	1	<1	1 - 3%	NA

**Moisture Content Method: ME-(AU)-[ENV]AN234**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB008518	%	0.5	0 - 3%

**pH in soil (1:5) Method: ME-(AU)-[ENV]AN101**

Parameter	QC Reference	Units	LOR	DUP %RPD	LCS %Recovery
pH	LB008543	pH Units	-	1 - 2%	99%

**Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chloride	LB008556	mg/kg	0.25	<0.25	104%
Sulphate	LB008556	mg/kg	0.5	<0.5	104%

METHOD

METHODOLOGY SUMMARY

AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as $\mu\text{mhos/cm}$ or $\mu\text{S/cm @ 25}^\circ\text{C}$ . For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2520 B.
AN234	The test is carried out by drying (at either $40^\circ\text{C}$ or $105^\circ\text{C}$ ) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO <sub>2</sub> , NO <sub>3</sub> and SO <sub>4</sub> are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B

FOOTNOTES

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

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

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:  
<http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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# STATEMENT OF QA/QC PERFORMANCE AGAINST DATA QUALITY OBJECTIVES

SE103128 R0

## CLIENT DETAILS

Contact Emged Rizkalla  
Client Geotechnique  
Address P.O. Box 880  
PENRITH NSW 2751

Telephone 02 4722 2700  
Facsimile 02 4722 6161  
Email Emged@geotech.com.au

Project **12576/1 - Marsden Park Precinct**  
Order Number (Not specified)  
Samples 15

## LABORATORY DETAILS

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

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

SGS Reference SE103128 R0  
Report Number 0000012041  
Date Reported 17 Nov 2011

## COMMENTS

All the laboratory data for each environmental matrix was compared to the SGS Environmental Services' stated data quality objectives (DQO).

Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the chain of custody document and was supplied by the client.

This QA/QC statement must be read in conjunction with the referenced analytical report.

The statement and the analytical report must not be reproduced except in full.

All Data Quality Objectives were met.

## SAMPLE SUMMARY

Sample counts by matrix	15 Soils	Type of documentation received	Email
Date documentation received	8/11/11@3:35pm	Samples received in good order	Yes
Samples received without headspace	N/A	Sample temperature upon receipt	2.7°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
<b>Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106</b>								
TP-70 0.0-0.1	SE103128.001	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-70 1.5-1.6	SE103128.002	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-71 0.5-0.6	SE103128.003	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-71 2.0-2.1	SE103128.004	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-72 1.0-1.1	SE103128.005	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-73 1.5-1.6	SE103128.006	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-74 0.0-0.1	SE103128.007	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-75 0.5-0.6	SE103128.008	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-75 1.5-1.6	SE103128.009	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-76 1.0-1.1	SE103128.010	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-77 0.0-0.1	SE103128.011	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-77 1.5-1.6	SE103128.012	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-78 0.0-0.1	SE103128.013	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-79 0.5-0.6	SE103128.014	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011
TP-80 1.0-1.1	SE103128.015	LB008540	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	11 Nov 2011	11 Nov 2011

**Moisture Content Method: ME-(AU)-[ENV]AN234**

TP-70 0.0-0.1	SE103128.001	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-70 1.5-1.6	SE103128.002	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-71 0.5-0.6	SE103128.003	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-71 2.0-2.1	SE103128.004	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-72 1.0-1.1	SE103128.005	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-73 1.5-1.6	SE103128.006	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-74 0.0-0.1	SE103128.007	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-75 0.5-0.6	SE103128.008	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-75 1.5-1.6	SE103128.009	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-76 1.0-1.1	SE103128.010	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-77 0.0-0.1	SE103128.011	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-77 1.5-1.6	SE103128.012	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-78 0.0-0.1	SE103128.013	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-79 0.5-0.6	SE103128.014	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011
TP-80 1.0-1.1	SE103128.015	LB008518	04 Nov 2011	07 Nov 2011	18 Nov 2011	10 Nov 2011	15 Nov 2011	11 Nov 2011

**pH in soil (1:5) Method: ME-(AU)-[ENV]AN101**

TP-70 0.0-0.1	SE103128.001	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-70 1.5-1.6	SE103128.002	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-71 0.5-0.6	SE103128.003	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-71 2.0-2.1	SE103128.004	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-72 1.0-1.1	SE103128.005	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-73 1.5-1.6	SE103128.006	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-74 0.0-0.1	SE103128.007	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-75 0.5-0.6	SE103128.008	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-75 1.5-1.6	SE103128.009	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-76 1.0-1.1	SE103128.010	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-77 0.0-0.1	SE103128.011	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-77 1.5-1.6	SE103128.012	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-78 0.0-0.1	SE103128.013	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-79 0.5-0.6	SE103128.014	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011
TP-80 1.0-1.1	SE103128.015	LB008543	04 Nov 2011	07 Nov 2011	11 Nov 2011	10 Nov 2011	12 Nov 2011	11 Nov 2011

## HOLDING TIMES

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

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

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

Sample Name	Sample Number	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
<b>Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245</b>								
TP-70 1.5-1.6	SE103128.002	LB008556	04 Nov 2011	07 Nov 2011	02 Dec 2011	10 Nov 2011	02 Dec 2011	14 Nov 2011
TP-73 1.5-1.6	SE103128.006	LB008556	04 Nov 2011	07 Nov 2011	02 Dec 2011	10 Nov 2011	02 Dec 2011	14 Nov 2011
TP-75 1.5-1.6	SE103128.009	LB008556	04 Nov 2011	07 Nov 2011	02 Dec 2011	10 Nov 2011	02 Dec 2011	14 Nov 2011
TP-77 1.5-1.6	SE103128.012	LB008556	04 Nov 2011	07 Nov 2011	02 Dec 2011	10 Nov 2011	02 Dec 2011	14 Nov 2011
TP-79 0.5-0.6	SE103128.014	LB008556	04 Nov 2011	07 Nov 2011	02 Dec 2011	10 Nov 2011	02 Dec 2011	14 Nov 2011

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

No Surrogates were required for this job.



Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, which is typically 2.5 times the statistically determined method detection limit (MDL).  
Result is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Units	Control LOR	BLK MB
-----------	-------	-------------	--------

Soluble Anions In Soil by Ion Chromatography Method: ME-(AU)-ENVJAN245  
LB008556.001

Chloride	mg/kg	0.25	<0.25
Sulphate	mg/kg	0.5	<0.5



Duplicates are calculated as relative percent difference (RPD) using the formula  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times StatisticalDetectionLimit / Mean + LimitingRepeatability$   
 Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.  
 RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Sample Name			SE103128.001-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008540.003

Conductivity (1:5 dry sample basis)	µS/cm	1	140	140	31	3
-------------------------------------	-------	---	-----	-----	----	---

pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008543.003

pH	pH Units	-	6.5	6.7	32	2
----	----------	---	-----	-----	----	---

Sample Name			SE103128.010-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Molsture Content Method: ME-(AU)-[ENV]AN234  
 LB008518.011

% Moisture	%	0.5	22.2	22.1	32	0
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Sample Name			SE103128.013-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Conductivity and TDS by Calculation - Soil Method: ME-(AU)-[ENV]AN106  
 LB008540.016

Conductivity (1:5 dry sample basis)	µS/cm	1	160	160	31	1
-------------------------------------	-------	---	-----	-----	----	---

pH In soil (1:5) Method: ME-(AU)-[ENV]AN101  
 LB008543.016

pH	pH Units	-	5.5	5.5	32	1
----	----------	---	-----	-----	----	---

Sample Name			SE103128.015-DUP			
Parameter	Units	LOR	Original Result	Duplicate Result	Criteria %	RPD %

Molsture Content Method: ME-(AU)-[ENV]AN234  
 LB008518.017

% Moisture	%	0.5	15.1	15.5	33	3
------------	---	-----	------	------	----	---

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report.  
 Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

Parameter	Control		LCS STD			
	Units	LOR	Result	Expected Result	Criteria %	Recovery %
<p><b>pH in soil (1:5) Method: ME-(AU)-[ENV]AN101</b>                      LB008543.001</p>						
pH	pH Units	-	7.4	7.41	98 - 102	<b>99</b>
<p><b>Soluble Anions in Soil by Ion Chromatography Method: ME-(AU)-[ENV]AN245</b>                      LB008556.002</p>						
Chloride	mg/kg	0.25	100	100	70 - 130	<b>104</b>
Sulphate	mg/kg	0.5	100	100	70 - 130	<b>104</b>

Matrix spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report. Recovery is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spikes were required for this job.

Matrix spike duplicates are calculated as relative percent difference using the formula  $RPD = \frac{|OriginalResult - ReplicateResult|}{Mean} \times 100$

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

The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula:  $MaxAllowableDifference = 100 \times \frac{StatisticalDetectionLimit}{Mean} + LimitingRepeatability$

RPD is shown in **Green** when within suggested criteria or **Bold** with an appended dagger symbol and **Red†** when outside suggested criteria.

No Matrix Spike Duplicates were required for this job.

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	NATA Accreditation does not cover this analysis.	NA	The sample was not analysed for this analyte
^	Performed by outside laboratory.		
LOR	Limit of Reporting		

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: <http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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**LABORATORY REPORT COVERSHEET**

**Date:** 17 November 2011

**To:** Geotechnique Pty Ltd  
PO Box 880  
PENRITH NSW 2015

**Attention:** Emged Rizkalla

**Your Reference:** SE103128 - 12576/1 - Marsden Park Precinct  
**Laboratory Report No:** CE74851

**Samples Received:** 9/11/2011  
**Samples / Quantity:** 5 Soils

The above samples were received intact and analysed according to your written instructions. Unless otherwise stated, solid samples are reported on a dry weight basis and liquid samples as received.



**Jon Dicker**  
Manager  
CAIRNS



**Shey Goddard**  
Administration Manager  
CAIRNS

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103128 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74851

**LABORATORY REPORT**

<b>Cation Exchange Capacity Suite</b>	<b>Units</b>	<b>CE74851-1 TP-70 1.5-1.6 Soil 4/11/2011</b>	<b>CE74851-2 TP-73 1.5-1.6 Soil 4/11/2011</b>	<b>CE74851-3 TP-75 1.5-1.6 Soil 4/11/2011</b>
Date Extracted		9/11/2011	9/11/2011	9/11/2011
Date Analysed		15/11/2011	15/11/2011	15/11/2011
Sodium, Na	mg/kg	960	2,300	1,200
Sodium (meq%)	meq%	4.2	10	5.2
Exchangeable Sodium	%	34	38	31
Potassium, K	mg/kg	550	280	310
Potassium (meq%)	meq%	1.4	0.72	0.79
Exchangeable Potassium	%	11	3	5
Calcium, Ca	mg/kg	19	24	78
Calcium (meq%)	meq%	0.10	0.12	0.39
Exchangeable Calcium	%	<1	<1	2
Magnesium, Mg	mg/kg	810	1,900	1,300
Magnesium (meq%)	meq%	6.6	16	11
Exchangeable Magnesium	%	54	59	62
CEC	meq%	12	26	17

**CLIENT:** Geotechnique Pty Ltd

**PROJECT:** SE103128 - 12576/1 - Marsden Park Precinct

**Laboratory Report No:** CE74851

### LABORATORY REPORT

<b>Cation Exchange Capacity Suite</b> <b>Our Reference</b> <b>Your Reference</b> <b>Type of Sample</b> <b>Date Sampled</b>	<b>Units</b>	<b>CE74851-4</b> <b>TP-77 1.5-1.6</b> <b>Soil</b> <b>4/11/2011</b>	<b>CE74851-5</b> <b>TP-79 0.5-0.6</b> <b>Soil</b> <b>4/11/2011</b>
Date Extracted		9/11/2011	9/11/2011
Date Analysed		15/11/2011	15/11/2011
Sodium, Na	mg/kg	610	630
Sodium (meq%)	meq%	2.6	2.7
Exchangeable Sodium	%	22	23
Potassium, K	mg/kg	210	150
Potassium (meq%)	meq%	0.54	0.38
Exchangeable Potassium	%	4	3
Calcium, Ca	mg/kg	12	5
Calcium (meq%)	meq%	0.06	0.02
Exchangeable Calcium	%	<1	<1
Magnesium, Mg	mg/kg	1,100	1,100
Magnesium (meq%)	meq%	9.0	9.0
Exchangeable Magnesium	%	74	74
CEC	meq%	12	12

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### LABORATORY REPORT

TEST PARAMETERS	UNITS	LOR	METHOD
Date Extracted			
Date Analysed			
Sodium, Na	mg/kg	2	AN122 / AN320 RL15D3
Sodium (meq%)	meq%	0.01	Calculation
Exchangeable Sodium	%	1	Calculation
Potassium, K	mg/kg	2	AN122 / AN320 RL15D3
Potassium (meq%)	meq%	0.01	Calculation
Exchangeable Potassium	%	1	Calculation
Calcium, Ca	mg/kg	2	AN122 / AN320 RL15D3
Calcium (meq%)	meq%	0.01	Calculation
Exchangeable Calcium	%	1	Calculation
Magnesium, Mg	mg/kg	2	AN122 / AN320 RL15D3
Magnesium (meq%)	meq%	0.01	Calculation
Exchangeable Magnesium	%	1	Calculation
CEC	meq%	0.01	AN122 / AN320 RL15D3



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**LABORATORY REPORT**

QUALITY CONTROL	UNITS	Blank	Duplicate Sm#	Duplicate Sample  Duplicate	Spike Sm#	Spike Recovery
Date Extracted		09/11/11	CE74851-1	9/11/2011    9/11/2011	Batch Spike	-
Date Analysed		15/11/11	CE74851-1	15/11/2011    15/11/2011	Batch Spike	-
Sodium, Na	mg/kg	<2	CE74851-1	960    930    RPD: 3	Batch Spike	90%
Sodium (meq%)	meq%	-	CE74851-1	4.2    4.0    RPD: 5	Batch Spike	-
Exchangeable Sodium	%	-	CE74851-1	34    34    RPD: 0	Batch Spike	-
Potassium, K	mg/kg	<2	CE74851-1	550    530    RPD: 4	Batch Spike	90%
Potassium (meq%)	meq%	-	CE74851-1	1.4    1.4    RPD: 0	Batch Spike	-
Exchangeable Potassium	%	-	CE74851-1	11    11    RPD: 0	Batch Spike	-
Calcium, Ca	mg/kg	<2	CE74851-1	19    19    RPD: 0	Batch Spike	93%
Calcium (meq%)	meq%	-	CE74851-1	0.10    0.10    RPD: 0	Batch Spike	-
Exchangeable Calcium	%	-	CE74851-1	<1    <1	Batch Spike	-
Magnesium, Mg	mg/kg	<2	CE74851-1	810    790    RPD: 2	Batch Spike	91%
Magnesium (meq%)	meq%	-	CE74851-1	6.6    6.5    RPD: 2	Batch Spike	-
Exchangeable Magnesium	%	-	CE74851-1	54    54    RPD: 0	Batch Spike	-
CEC	meq%	-	CE74851-1	12    12    RPD: 0	Batch Spike	-



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## LABORATORY REPORT

### NOTES:

LOR - Limit of Reporting.

The significance of all reported results are defined by their analytical limit of reporting.

**Analysis Date:** Between 9/11/11 and 17/11/11

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