CBased Environmental Pty Limited
ABN 62 611 924 264

25 May 2017

Hanson Calga Quarry Products
Hanson Calga Quarry
Mr Pat McCue
PO Box 36
GUILDFORD NSW 2161

Dear Pat,

Six Monthly Hanson Calga Quarry Major Cations and Dissolved Metals Environmental Monitoring Report – April 2017

Please find enclosed the six-monthly detailed groundwater monitoring report for 25 groundwaters at the Hanson Calga site. This report contains the six-monthly detailed water analysis for major cations and dissolved metals that is required by the Site Water Management Plan.

17 sites were able to be collected and analysed on 3 April 2017, while 8 samples were unable to be sampled. Groundwater sites CQ6, CQ9 and CP3 have been demolished, CP4's pump was out of service and sites MW10, MW13, MW16 and MW17 were unable to be safely accessed due to an eroded track. Comparison of results between the 4 October 2016 and the 3 April 2017 shows little apparent change in water quality; apart from the following; slight variations in pH at CQ8 (+ 1.62 pH) and CP7 (+ 1.15 pH) and in Nitrate at CQ8 (-4.16 mg/L) and CP5 (-3.38 mg/L)

Please do not hesitate to contact me if further information is required.

Yours Faithfully

Colin Davies
Environmental Scientist / Company Director

Table 1: Comparison of analysis results between October 2016 and April 2017 sampling events.

Species	Units	CQ3	CQ4	CQ5	CQ6	CQ7	CQ8	CQ9	CQ10	CQ11S	CQ11D	CQ12	CQ13
pH Value	pH units	-0.19	0.03	0.47		-0.09	1.62		-0.41	0.37	0.00	0.02	-0.99
Electrical Conductivity @ 25°C	µS/cm	19	4	-19		11	3		18	14	8	9	8
Hydroxide Alkalinity as $CaCO_3$	ppm	0	0	0		0	0		0	0	0	0	0
Carbonate Alkalinity as $CaCO_3$	ppm	0	0	0		0	0		0	0	0	0	0
Bicarbonate Alkalinity as $CaCO_3$	ppm	13	4	0		0	20		0	7	0	0	0
Total Alkalinity as $CaCO_3$	ppm	13	4	0		0	20		0	7	0	0	0
Sulphate as SO_4^{2-}	ppm	-1.0	-1.0	-3.0		0.0	0.0		-3.0	-2.0	-1.0	-3.0	0.0
Chloride	ppm	1.0	1.0	-1.0		2.0	2.0		2.0	2.0	3.0	2.0	4.0
Calcium	ppm	0	0	2		0	0		1	0	0	0	0
Magnesium	ppm	1	0	0		0	1		1	0	1	1	1
Sodium	ppm	2	3	-1		2	3		3	3	5	3	3
Potassium	ppm	1	0	2		0	0		0	1	0	0	1
Aluminium	ppm	0.00	-0.18	0.01		-0.33	-0.41		0.21	-0.46	-0.20	-0.24	-0.28
Arsenic	ppm	0.002	0	0		0	0		0	0	0	0	0
Cadmium	ppm	0.005	0	0		0	0		0	0	0	0	0
Chromium	ppm	0.002	0	0		0	0		0	0	0	0	0
Copper	ppm	0.002	-0.003	0.002		-0.001	0.001		0.014	0	-0.001	-0.001	-0.002
Lead	ppm	-0.003	-0.001	0		0	0		-0.001	0	-0.001	0	0
Manganese	ppm	0.000	-0.003	0.002		0	0		0.002	-0.002	-0.001	0.001	-0.003
Nickel	ppm	0.01	-0.054	0.144		0.029	0.028		0.015	0.029	0.035	0.035	-0.026
Selenium	ppm	-0.06	-0.007	0.017		0.001	0.006		0.007	0.008	0.004	0.003	-0.004
Zinc	ppm	0.000	0.000	0.000		0.000	0.000		0.000	0.000	0.000	0.000	0.000
Boron	ppm	0	0	0		0	0		0	0	0	0	0
Iron	ppm	0.80	-0.13	0		-0.16	0.02		0.33	0.34	0.11	-0.09	0.03
Mercury	ppm	0	0	0		0	0		0	0	0	0	0
Fluoride	ppm	0	0	0		0	0		0	0	0	0	0
Nitrite as N	ppm	0	-0.01	0		0.01	0		0	0	0	0	0
Nitrate as N	ppm	-0.03	-0.94	0.03		0.72	-4.16		0.81	0	-0.05	0.18	0.35
Nitrite + Nitrate as N	ppm	-0.03	-0.95	0.09		0.74	-4.16		0.81	0	-0.05	0.18	0.35

Note: Results shown as below the limit of detection (<) have been taken as zero for the purposes of the comparison.

Table 1 continued.

Species	Units	CP3	CP4	CP5	CP6	CP7	CP8	MW7	MW8	MW9	MW10	MW13	MW16	MW17
pH Value	pH units			0.02	-0.54	1.15	-0.40	-0.18	0.06	-0.37				
Electrical Conductivity @ 25°C	µS/cm			-25	-1	-21	9	3	-10	7				
Hydroxide Alkalinity as $CaCO_3$	ppm			0	0	0	0	0	0	0				
Carbonate Alkalinity as $CaCO_3$	ppm			0	0	0	0	0	0	0				
Bicarbonate Alkalinity as $CaCO_3$	ppm			0	0	9	0	0	0	0				
Total Alkalinity as $CaCO_3$	ppm			0	0	9	0	0	0	0				
Sulphate as SO_4^{2-}	ppm			2.0	3.0	-7.0	0.0	0.0	0.0	0.0				
Chloride	ppm			1.0	5.0	-6.0	2.0	3.0	2.0	2.0				
Calcium	ppm			1	0	0	0	0	0	0				
Magnesium	ppm			-2	0	-1	0	0	0	0				
Sodium	ppm			0	3	-2	3	2	1	2				
Potassium	ppm			1	0	6	0	0	0	0				
Aluminium	ppm			-0.18	0.01	0.54	-0.23	-0.06	0.04	-0.01				
Arsenic	ppm			0	0	0	0	0	0	0				
Cadmium	ppm			0	0	0	0	0	0	0				
Chromium	ppm			0	0	0	0	0	0	0				
Copper	ppm			-0.007	0.007	0.014	0.001	0	-0.003	0				
Lead	ppm			0	0	0	0	0	0	0				
Manganese	ppm			-0.001	0.003	0	0	0	0	0				
Nickel	ppm			-0.047	0.003	0.027	-0.007	0.007	-0.006	0.022				
Selenium	ppm			-0.001	0.003	0.013	-0.002	-0.004	-0.001	-0.002				
Zinc	ppm			0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Boron	ppm			0	0	0	0	0	0	0				
Iron	ppm			0.00	0.00	-0.08	0.08	0.06	0.04	-0.04				
Mercury	ppm			0	0	0	0	0	0	0				
Fluoride	ppm			0	0	0	0	0	0	0				
Nitrite as N	ppm			0	0	0	0	0	0	0				
Nitrate as N	ppm			-3.38	-1.85	-0.04	0.11	-0.06	-0.91	0				
Nitrite + Nitrate as N	ppm			-3.38	-1.85	-0.04	0.11	-0.06	-0.91	0				

Note: Results shown as below the limit of detection (<) have been taken as zero for the purposes of the comparison.

Carbon Based Environmental Pty Limited

Todays Collection	
Time Start:	9-00
Time Finish:	13:30

Date: 3.4.17

GROUNDWATERS

Client : Hanson Calga

Project :

Site	DEPTH	Odour	Water Turbidity	Water Colour	1		2		Bottles (Apr/Oct)	Downloaded Logger? (Y/N)
					pH	EC	pH	EC		
CQ3	10-41	NO	C S T	C LO O B G	6-10	167-8us	6-07	164-2us	1x 250ml GP, 1x 500mL GP, 1RP	yes
CQ4	10.46	N	C S T	C LO O B G	5.33	104.8uS	5.36	104.8uS	1x 250ml GP, 1x 500mL GP, 1RP	N
CQ5	5.57	~~YES~~ NO	C S T	C LO O B G	4-93	133-4us	4-89	134-7us	1x 250ml GP, 1x 500mL GP, 1RP	
CQ6			C S T	C LO O B G	Covered over in Paddock.				~~1x 250ml GP, 1x 500mL GP, 1RP~~	
CQ7	5.62	NO	C S T	C LO O B G	4-75	82-6us	4.66	89.0uS	1x 250ml GP, 1x 500mL GP, 1RP	yes
CQ8	5-26	NO	C S T	C LO O B G	5-81	128-7us	5-80	130-1us	1x 250ml GP, 1x 500mL GP, 1RP	NO
CQ9			C S T	C LO O B G	STAND PIPE BENT /		BLOCKED		~~1x 250ml GP, 1x 500mL GP, 1RP~~	
CQ10	25.37	N	C S T	C LO O B G	4.52	129.5uS	4.45	129.4uS	1x 250ml GP, 1x 500mL GP, 1RP	Y
CQ11S	10.38	Y N	C S T	C LO O B G	5-26	136.5uS	5.27	135.7uS	1x 250ml GP, 1x 500mL GP, 1RP	N
CQ11D	11.48	N	C S T	C LO O B G	4.79	142.9uS	4.82	141.6uS	1x 250ml GP, 1x 500mL GP, 1RP	Y
CQ12	2-61	N	C S T	C LO O B G	4-40	113-6us	4-38	114-3us	1x 250ml GP, 1x 500mL GP, 1RP	N
CQ13	12.16	N	C S T	C LO O B G	4.54	173.6uS	4.51	174.1uS	1x 250ml GP, 1x 500mL GP, 1RP	
CP3			C S T	C LO O B G		GONE			1x 250ml GP, 1x 500mL GP, 1RP	
CP4			C S T	C LO O B G	Pump Not Working.			SHED COLLAPSED	1x 250ml GP, 1x 500mL GP, 1RP	
CP5	5.42	N N	C S T	C LO O B G	4.52	117.0uS	4.49	116.9uS	1x 250ml GP, 1x 500mL GP, 1RP	
CP6	8.46	N N	C S T	C LO O B G	4.53	149.9uS	4.57	150.6uS	1x 250ml GP, 1x 500mL GP, 1RP	
CP7	0.92	N N	C S T	C LO O B G	5.64	74.2uS	5.71	76.1uS	1x 250ml GP, 1x 500mL GP, 1RP	
CP8	20.80	N N	C S T	C LO O B G	4.37	114.2uS	4.39	113.9uS	1x 250ml GP, 1x 500mL GP, 1RP	
MW7	14.48	N N	C S T	C LO O B G	4.53	98.9uS	4.53	99.8uS	1x 250ml GP, 1x 500mL GP, 1RP	Y
MW8	7.16	N N	C S T	C LO O B G	4.65	65.7uS	4.66	65.8uS	1x 250ml GP, 1x 500mL GP, 1RP	N
MW9	23.57	N	C S T	C LO O B G	4.62	77.5uS	4.58	77.9uS	1x 250ml GP, 1x 500mL GP, 1RP	N
MW10			C S T	C LO O B G	No Access - Bad Tracks				~~1x 250ml GP, 1x 500mL GP, 1RP~~	
MW13			C S T	C LO O B G	"		"		1x 250ml GP, 1x 500mL GP, 1RP	
MW16			C S T	C LO O B G	"		"		1x 250ml GP, 1x 500mL GP, 1RP	
MW17			C S T	C LO O B G	No Access - Trees over track.				1x 250ml GP, 1x 500mL GP, 1RP	

Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)

Colour: C=Clear, LO=Light Orange, O=Orange, B=Brown, G=Green (CIRCLE)

pH/EC meter #: 12

Signed: _____

Sampled by: Leesa + Hamish

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Carbon Based Environmental Pty Ltd

POSTAL ADDRESS: 47 Boomerang St CESSNOCK NSW 2325

SEND REPORT TO: monitoringresults@cbased.com.au

SEND INVOICE TO: cbased@bigpond.com, renae.mikka@cbased.com.au

DATA NEEDED BY: 7 working days — REPORT NEEDED BY: 7 working days

PROJECT ID: Hanson G Waters — QUOTE NO.: SYBQ-222-15

P.O. NO.:

COMMENTS/SPECIAL HANDLING/STORAGE OR DIPOSAL: **also email results to cbased1@bigpond.com**

Total unless specified

FOR LAB USE ONLY
COOLER SEAL
Yes ...... No ...✓
Broken ...... Intact ...
COOLER TEMP: 22.2 deg.C

LABORATORY BATCH NO.:

SAMPLERS: Carbon Based Environmental Pty Ltd

Australian Laboratory Services Pty Ltd

PHONE: 0265713334 FAX: 0249904442 E-MAIL: monitoringresults@cbased.com.au

REPORT FORMAT: HARD: Yes FAX: DISK: BULLETIN BOARD: E-MAIL: Yes

QC LEVEL: QCS1: QCS2: QCS3: Yes QCS4:

ANALYSIS REQUIRED

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	NO.	pH	EC	Ca, Mg, K, Na	Alkalinity	Sulfate	Chloride	Fluoride	Nitrate	Al, As, B, Cd	Cr, Cu, Fe, Hg	Mn, Ni, Pb, Se, Zn	NOTES
CQ3	Water	3.4.17	9:00	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ4	Water	〃	10:50	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ5	Water	〃	11:00	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
~~CQ6~~	~~Water~~			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	x	
CQ7	Water	〃	11:05	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ8	Water	〃	11:55	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
~~CQ9~~	~~Water~~			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	
CQ10	Water	〃	9:25	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ11s	Water	〃	10:35	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ11d	Water	〃	10:30	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ12	Water	〃	11:45	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CQ13	Water	〃	12:10	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
~~CP3~~	~~Water~~			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	
~~CP4~~	~~Water~~			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	
CP5	Water	〃	12:15	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CP6	Water	〃	12:45	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CP7	Water	〃	12:40	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
CP8	Water	〃	12:50	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
MW7	Water	〃	10:20	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
MW8	Water	〃	10:15	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
MW9	Water	〃	9:40	1x500mlGP, 1x250mlGP,1xRP		x	x	x	x	x	x	x	x	x	x	x	
~~MW10~~	Water			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	x	x	
~~MW13~~	Water			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	x	x	
~~MW16~~	~~Water~~			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	x	
~~MW17~~	Water			~~1x500mlGP, 1x250mlGP,1xRP~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	x	

Environmental Division
Sydney
Work Order Reference
ES1707839

Telephone : + 61-2-8784 8555

RELINQUISHED BY:

NAME : Colin Davies — Leesa King — DATE: 3.4.17
OF: Carbon Based Environmental — TIME: 14:30
NAME : — DATE:
OF: — TIME:

RECEIVED BY

NAME : [signature] — DATE: 3/4/17
OF: ALS — TIME: 14:30
NAME : — DATE:
OF: — TIME:

METHOD OF SHIPMENT

CONSIGNMENT NOTE NO.

TRANSPORT CO. NAME.

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; O = Other.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1707839**	Page	: 1 of 10
Client	: **CBASED ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN DAVIES (cbased)	Contact	: Customer Services ES
Address	: 47 BOOMERANG ST CESSNOCK NSW, AUSTRALIA 2325	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 49904443	Telephone	: +61-2-8784 8555
Project	: HANSON G WATER	Date Samples Received	: 03-Apr-2017 14:31
Order number	: ----	Date Analysis Commenced	: 03-Apr-2017
C-O-C number	: ----	Issue Date	: 06-Apr-2017 14:21
Sampler	: CARBON BASED ENVIRONMENTAL PTY LTD		
Site	:		
Quote number	: SYBQ/222/16		
No. of samples received	: 17		
No. of samples analysed	: 17		

ilac-MRA NATA

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Neil Martin	Team Leader - Chemistry	Chemistry, Newcastle West, NSW
Raymond Commodore	Instrument Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

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

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

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

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

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CQ3	CQ4	CQ5	CQ7	CQ8
				Client sampling date / time	03-Apr-2017 09:00	03-Apr-2017 10:50	03-Apr-2017 11:00	03-Apr-2017 11:05	03-Apr-2017 11:55
Compound	CAS Number	LOR	Unit		ES1707839-001	ES1707839-002	ES1707839-003	ES1707839-004	ES1707839-005
					Result	Result	Result	Result	Result
EA005: pH									
pH Value	----	0.01	pH Unit		6.28	5.25	4.66	4.58	6.01
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		181	134	169	123	155
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		51	7	<1	<1	21
Total Alkalinity as CaCO3	----	1	mg/L		51	7	<1	<1	21
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		2	5	24	3	8
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		23	23	20	24	20
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		2	<1	4	1	<1
Magnesium	7439-95-4	1	mg/L		5	2	5	2	5
Sodium	7440-23-5	1	mg/L		15	21	14	16	17
Potassium	7440-09-7	1	mg/L		2	<1	3	1	1
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.03	0.15	1.59	0.21	0.11
Arsenic	7440-38-2	0.001	mg/L		0.003	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		0.0006	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.003	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		0.003	0.002	0.005	0.002	0.002
Lead	7439-92-1	0.001	mg/L		<0.001	0.002	0.003	0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		1.42	0.011	0.023	0.006	0.007
Nickel	7440-02-0	0.001	mg/L		0.007	0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L		0.019	0.027	0.156	0.046	0.044
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L		13.5	0.15	0.40	0.08	0.07
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Client sample ID	CQ3	CQ4	CQ5	CQ7	CQ8
				Client sampling date / time	03-Apr-2017 09:00	03-Apr-2017 10:50	03-Apr-2017 11:00	03-Apr-2017 11:05	03-Apr-2017 11:55
Compound	CAS Number	LOR	Unit		ES1707839-001	ES1707839-002	ES1707839-003	ES1707839-004	ES1707839-005
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.01**	**0.06**	**0.02**	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	**1.53**	**2.58**	**2.01**	**1.30**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**1.54**	**2.64**	**2.03**	**1.30**
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**1.71**	**0.89**	**1.06**	**0.74**	**1.15**
Total Cations	----	0.01	meq/L		**1.21**	**1.08**	**1.30**	**0.94**	**1.18**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	CQ10	CQ11S	CQ11D	CQ12	CQ13
			Client sampling date / time	03-Apr-2017 09:25	03-Apr-2017 10:35	03-Apr-2017 10:30	03-Apr-2017 11:45	03-Apr-2017 12:10
Compound	CAS Number	LOR	Unit	ES1707839-006	ES1707839-007	ES1707839-008	ES1707839-009	ES1707839-010
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	4.35	5.20	4.77	4.44	4.37
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	167	175	181	149	224
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	8	<1	<1	<1
Total Alkalinity as CaCO3	----	1	mg/L	<1	8	<1	<1	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	18	24	29	22	<1
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	25	23	24	17	34
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	<1	<1	<1	<1
Magnesium	7439-95-4	1	mg/L	4	4	5	6	7
Sodium	7440-23-5	1	mg/L	19	22	23	13	24
Potassium	7440-09-7	1	mg/L	<1	3	2	<1	2
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.11	0.26	1.16	0.83	0.69
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	0.038	<0.001	0.002	0.001	<0.001
Lead	7439-92-1	0.001	mg/L	0.004	<0.001	0.009	0.002	0.001
Manganese	7439-96-5	0.001	mg/L	0.035	0.013	0.016	0.005	0.002
Nickel	7440-02-0	0.001	mg/L	0.002	<0.001	0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	0.064	0.060	0.102	0.057	0.014
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L	0.45	0.41	0.29	0.07	<0.05
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Client sample ID	CQ10	CQ11S	CQ11D	CQ12	CQ13
				Client sampling date / time	03-Apr-2017 09:25	03-Apr-2017 10:35	03-Apr-2017 10:30	03-Apr-2017 11:45	03-Apr-2017 12:10
Compound	*CAS Number*	*LOR*	*Unit*		**ES1707839-006**	**ES1707839-007**	**ES1707839-008**	**ES1707839-009**	**ES1707839-010**
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.83**	<0.01	**0.01**	**0.70**	**8.56**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.83**	<0.01	**0.01**	**0.70**	**8.56**
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**1.08**	**1.31**	**1.28**	**0.94**	**0.96**
Total Cations	----	0.01	meq/L		**1.26**	**1.36**	**1.46**	**1.06**	**1.67**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CP5	CP6	CP7	CP8	MW7
				Client sampling date / time	03-Apr-2017 12:15	03-Apr-2017 12:45	03-Apr-2017 12:40	03-Apr-2017 12:50	03-Apr-2017 10:20
Compound	CAS Number	LOR	Unit		ES1707839-011	ES1707839-012	ES1707839-013	ES1707839-014	ES1707839-015
					Result	Result	Result	Result	Result
EA005: pH									
pH Value	----	0.01	pH Unit		4.40	4.26	6.20	4.31	4.55
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		149	192	103	151	129
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		<1	<1	10	<1	<1
Total Alkalinity as CaCO3	----	1	mg/L		<1	<1	10	<1	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		5	8	14	8	3
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		18	26	7	27	30
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		2	<1	4	<1	<1
Magnesium	7439-95-4	1	mg/L		6	7	2	2	2
Sodium	7440-23-5	1	mg/L		10	18	5	20	18
Potassium	7440-09-7	1	mg/L		3	<1	12	<1	<1
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.43	0.75	0.71	0.40	0.25
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		0.013	0.013	0.015	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		0.001	0.005	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		0.002	0.005	0.033	0.001	0.007
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L		0.007	0.037	0.040	<0.005	0.033
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	0.54	<0.05	<0.05
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Client sample ID	CP5	CP6	CP7	CP8	MW7
				Client sampling date / time	03-Apr-2017 12:15	03-Apr-2017 12:45	03-Apr-2017 12:40	03-Apr-2017 12:50	03-Apr-2017 10:20
Compound	CAS Number	LOR	Unit		ES1707839-011	ES1707839-012	ES1707839-013	ES1707839-014	ES1707839-015
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**6.72**	**7.12**	**1.18**	**1.43**	**0.11**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**6.72**	**7.12**	**1.18**	**1.43**	**0.11**
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**0.61**	**0.90**	**0.69**	**0.93**	**0.91**
Total Cations	----	0.01	meq/L		**1.10**	**1.36**	**0.89**	**1.03**	**0.95**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	MW8	MW9	----	----	----
			Client sampling date / time	03-Apr-2017 10:15	03-Apr-2017 09:40	----	----	----
Compound	CAS Number	LOR	Unit	ES1707839-016	ES1707839-017	--------	--------	--------
				Result	Result	---	---	---
EA005: pH								
pH Value	----	0.01	pH Unit	**4.55**	**4.46**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**88**	**103**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**4**	**3**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**18**	**22**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	<1	<1	----	----	----
Magnesium	7439-95-4	1	mg/L	**2**	**1**	----	----	----
Sodium	7440-23-5	1	mg/L	**11**	**14**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.20**	**0.22**	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.001**	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.007**	**0.006**	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.044**	**0.035**	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.11**	**0.07**	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW8	MW9	----	----	----
				Client sampling date / time	03-Apr-2017 10:15	03-Apr-2017 09:40	----	----	----
Compound	CAS Number	LOR	Unit		ES1707839-016	ES1707839-017	--------	--------	--------
					Result	Result	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.17**	**0.20**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.17**	**0.20**	----	----	----
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**0.59**	**0.68**	----	----	----
Total Cations	----	0.01	meq/L		**0.64**	**0.69**	----	----	----