

23 January 2019

Commercial-in-Confidence

Michael Lloyd
National Manufacturing Manager
Downer Mining
Lot 2, 8 Melva Place
Mt Thorley NSW 2330

Dear Michael

Effluent Water Quality Monitoring - Downer Blasting Service, Mt Thorley – December 2018

AECOM Australia Pty Ltd was appointed by Downer Blasting Services (DBS) to undertake quarterly effluent water quality monitoring at their Mt Thorley facility during December 2018.

Sampling was carried out in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales (DEC, 2004, Approved Methods), with reference to the following standards:

- AS/NZS 5667.1:1998(R2016) Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples; and
- AS/NZS 5667.4:1998(R2016) Guidance on sampling from lakes, natural and manmade.

Effluent is required to be sampled on a quarterly basis from the site Waste Water Treatment Plant (WWTP) as per the requirements of EPL Licence 12325. Due to reduced manning levels at the Downer Thorley facility insufficient treated effluent was available to enable sampling from the effluent outlet hose so the final tank discharge /pumping tank cell was sampled directly using a decontaminated sampling pole and opened ended sample cup. The sample was transported to the ALS Water NATA accredited laboratory on the same day for pH and faecal coliforms analysis.

Laboratory analysis on water samples was carried out in accordance with the Approved Methods, with specific standards nominated on individual analytical and quality control reports.

Results Summary

The December quarter sampling of the WWTP Effluent Tap was conducted by AECOM staff on 10 December 2018. The analytical results from this event and previous monitoring events are displayed in **Table 1** below.

Table 1 Table 1 Effluent Water Quality Monitoring Results

Parameter	WWTP Effluent Tap			
Event	March 2018	June 2018	September 2018	December 2018
pH	6.93	4.00	7.49	7.58
Faecal coliforms (CFU/100mL)	<9	<2	62	~400*

* ~ indicates an estimated value.

Please find enclosed the documentation for the monitoring conducted including laboratory certificates of analysis, field sheets and chain of custody documentation.

Discussion

There are no limits set in EPL Licence 12325 for the WWTP Effluent sample for pH or faecal coliforms; however, the faecal coliform result (~400 CFU/100mL) was significantly elevated when compared to previous results. The observed water quality is recorded as brown in colour and the pH result is in the neutral range.

Quarterly monitoring is next scheduled for March 2019.

If you require any further information, please contact our Singleton office on (02) 6575 9000.

Kind regards



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encl: Analytical Reports, Field Sheets, Chain of Custody documentation.

CERTIFICATE OF ANALYSIS

Work Order : **WN1807498**
Client : **AECOM Australia Pty Ltd**
Contact : **SGNALS ANALYTICAL RESULTS**
Address : **PO BOX 3148**
SINGLETON NSW, AUSTRALIA 2330
Telephone : **----**
Project : **60515151 / 1.1 DBS STP Quarterly**
Order number : **60515151 / 1.1**
C-O-C number : **S3618**
Sampler : **AECOM**
Site : **----**
Quote number : **EN/004/16**
No. of samples received : **1**
No. of samples analysed : **1**

Page : 1 of 2
Laboratory : ALS Water - Newcastle
Contact : Hayley Worthington
Address : 5/585 Maitland Road Newcastle West NSW Australia 2304
Telephone : +612 4014 2500
Date Samples Received : 10-Dec-2018 16:10
Date Analysis Commenced : 10-Dec-2018
Issue Date : 13-Dec-2018 12:52



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Neil Martin	Team Leader - Chemistry	Chemistry, Newcastle West, NSW
Suzanne Meldrum	Technical Officer	Microbiology, Newcastle West, 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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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

				STP - WWTP Effluent Tap	----	----	----	----
				Client sampling date / time	10-Dec-2018 09:00	----	----	----
Compound	CAS Number	LOR	Unit	WN1807498-001	-----	-----	-----	-----
				Result	----	----	----	----
EA005: pH								
pH Value	----	0.01	pH Unit	7.58	----	----	----	----
MW006.WN: Thermotolerant Coliforms & E.coli (MF)								
Faecal Coliforms	----	1	CFU/100mL	~400	----	----	----	----

Water Sampling Field Sheet – STP Quarterly

Client Downer Blasting Services Project Number 60515151
 Collection Date 10-12-18 Collection Time 0845 Sampled By (Name) S. Bewshaw

Site	Frequency	Time	Flow Rate	Colour	Odour	Turbidity	Comments
STP - WWTP Effluent Tap	Quarterly	0900	Tank	Brown	nil	c	Sml GP, Bacto

C – Clear, ST – slightly turbid, T – turbid, VT – very turbid

Chris Melmeth – 0429 477 674 (Site Supervisor);
 Contact details for Heat Plant on poster near outside phone (office) if unable to contact site supervisor

Samplers Initials SB

