

## CERTIFICATE OF ANALYSIS

**Work Order** : **EW2102146**  
**Client** : **WOLLONGONG CITY COUNCIL**  
**Contact** : DELLA KUTZNER  
**Address** : 41 BURELLI STREET  
 WOLLONGONG NSW, AUSTRALIA 2500

**Telephone** : +61 02 4227 7111  
**Project** : Whytes Gully Storm Water Overflow  
**Order number** : 1021509  
**C-O-C number** : ----  
**Sampler** : Megan Gould  
**Site** : ----  
**Quote number** : WO/005/18 TENDER  
**No. of samples received** : 3  
**No. of samples analysed** : 3

**Page** : 1 of 4  
**Laboratory** : Environmental Division NSW South Coast  
**Contact** : Aneta Prosaroski  
**Address** : 1/19 Ralph Black Dr, North Wollongong 2500  
 4/13 Geary Pl, North Nowra 2541  
 Australia NSW Australia

**Telephone** : 02 42253125  
**Date Samples Received** : 13-May-2021 15:40  
**Date Analysis Commenced** : 13-May-2021  
**Issue Date** : 21-May-2021 08:37



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, unless the sampling was conducted by ALS. 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>
Aneta Prosaroski	Client Liaison Officer	Laboratory - Wollongong, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



## General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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 work for this work order will be conducted at ALS Sydney.**
- pH performed by ALS Wollongong via in-house method EA005FD and EN67 PK.
- Electrical conductivity performed by ALS Wollongong via in-house method EA010FD and EN67 PK.
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.6 Rivers and Streams.
- Temperature performed by ALS Wollongong via in-house method EA016 and EN67 PK.
- Dissolved oxygen (DO) performed by ALS Wollongong via in-house method EA025FD and EN67 PK.
- All field analysis performed by ALS Wollongong were completed at the time of sampling.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		Point 1 (Point 1)	Point 4 (Point 33)	Point 6 (Point 34)	----	----
Sampling date / time		13-May-2021 14:45		13-May-2021 15:05		13-May-2021 14:35		----
Compound	CAS Number	LOR	Unit	EW2102146-001	EW2102146-002	EW2102146-003	-----	-----
				Result	Result	Result	----	----
<b>EA005FD: Field pH</b>								
pH	----	0.1	pH Unit	8.2	7.5	7.7	----	----
<b>EA010FD: Field Conductivity</b>								
Electrical Conductivity (Non Compensated)	----	1	µS/cm	589	337	411	----	----
<b>EA025: Total Suspended Solids dried at 104 ± 2°C</b>								
Suspended Solids (SS)	----	5	mg/L	32	<5	<5	----	----
<b>EA116: Temperature</b>								
Temperature	----	0.1	°C	18.8	17.2	17.5	----	----
<b>ED037P: Alkalinity by PC Titrator</b>								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	202	92	84	----	----
Total Alkalinity as CaCO3	----	1	mg/L	202	92	84	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	17	18	26	----	----
<b>ED045G: Chloride by Discrete Analyser</b>								
Chloride	16887-00-6	1	mg/L	55	40	52	----	----
<b>ED093T: Total Major Cations</b>								
Calcium	7440-70-2	1	mg/L	37	25	33	----	----
Magnesium	7439-95-4	1	mg/L	18	12	16	----	----
Sodium	7440-23-5	1	mg/L	60	26	31	----	----
Potassium	7440-09-7	1	mg/L	11	2	2	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>								
Iron	7439-89-6	0.05	mg/L	0.14	0.16	<0.05	----	----
<b>EK040P: Fluoride by PC Titrator</b>								
Fluoride	16984-48-8	0.1	mg/L	0.3	0.1	0.2	----	----
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
Ammonia as N	7664-41-7	0.01	mg/L	2.32	0.09	<0.01	----	----
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
Nitrite as N	14797-65-0	0.01	mg/L	0.05	<0.01	<0.01	----	----
<b>EK058G: Nitrate as N by Discrete Analyser</b>								
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.19	0.18	----	----
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Point 1 (Point 1)	Point 4 (Point 33)	Point 6 (Point 34)	----	----
Sampling date / time					13-May-2021 14:45	13-May-2021 15:05	13-May-2021 14:35	----	----
Compound	CAS Number	LOR	Unit		EW2102146-001	EW2102146-002	EW2102146-003	-----	-----
					Result	Result	Result	----	----
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser - Continued</b>									
Nitrite + Nitrate as N	----	0.01	mg/L		0.07	0.19	0.18	----	----
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L		9	2	<1	----	----
<b>EP025FD: Field Dissolved Oxygen</b>									
Dissolved Oxygen	----	0.01	mg/L		8.04	8.60	9.53	----	----
<b>EP035G: Total Phenol by Discrete Analyser</b>									
Phenols (Total)	----	0.05	mg/L		<0.05	<0.05	<0.05	----	----

## Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP005: Total Organic Carbon (TOC)

(WATER) EP035G: Total Phenol by Discrete Analyser

(WATER) EK058G: Nitrate as N by Discrete Analyser

(WATER) EK057G: Nitrite as N by Discrete Analyser

(WATER) EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser

(WATER) EK055G: Ammonia as N by Discrete Analyser

(WATER) EG020F: Dissolved Metals by ICP-MS

(WATER) EA025: Total Suspended Solids dried at 104 ± 2°C

(WATER) ED045G: Chloride by Discrete Analyser

(WATER) ED037P: Alkalinity by PC Titrator

(WATER) EK040P: Fluoride by PC Titrator

(WATER) ED041G: Sulfate (Turbidimetric) as SO<sub>4</sub><sup>2-</sup> by DA

(WATER) ED093T: Total Major Cations