South Batemans Bay Link Road

Water Monitoring Report

30/11/2023

SBBLR - Water Monitoring Report

Revision History		
Version	**Release date**	**Description**
0	10/06/2022	First issue water monitoring report EOM May 2022
1	14/07/2022	Updated with data to end of June 2022
2	08/08/2022	Updated with data to end of July 2022
3	05/09/2022	Updated with data to end of Aug 2022
4	05/10/2022	Updated with data to end of Sep 2022
5	07/11/2022	Updated with data to end of Oct 2022
6	02/12/2022	Updated with data to end of Nov 2022
7	16/01/2023	Updated with data to end of Dec 2022
8	06/02/2023	Updated with data to end of Jan 2023
9	03/03/2023	Updated with data to end of Feb 2023
10	04/04/2023	Updated with date to end of Mar 2023
11	01/05/2023	Updated with date to end of Apr 2023
12	05/06/2023	Updated with date to end of May 2023
13	04/07/2023	Updated with date to end of Jun 2023
14	25/10/2023	Updated to 25/10/2023
15	30/11/2023	Updated to end of Nov 2023

Contents

1 Environmental Monitoring

1.1 Background

The South Batemans Bay Link Road operates under an Environmental Protection Licence (EPL21590). Under the conditions of the licence the project is required to monitor water quality at specified locations near the project.

1.2 Methodology

To maintain compliance with the Licence the project team has developed a Water Monitoring Program and Response Plan.

Water monitoring is completed by taking samples at specified locations following a rainfall event that exceeds the 5 days 85th percentile event as noted in the Blue Book which is 37.4mm in Batemans Bay. If a breach of the Erosion and Sediment Controls is identified, water monitoring will also be undertaken and an Environmental Report Raised.

Water samples are tested on site for Oil and Grease, pH, Total Suspended Solids Turbidity and Conductivity and results are recorded in a register. ½ litre of water samples are sent to a laboratory to confirm the Total Suspended Solids result.

2 Project Rainfall and Monitoring Update

2.1 Project to Date (June 2023 to October 2023)

Between the commencement of the project in **October 2021 and November 2023** the project has experienced a significant amount of rainfall.

Total rainfall recorded on site during this period is **2724 mm**

The Water Monitoring program was implemented in November 2021 when the Erosion and Sediment Controls were installed, vegetation clearing, and earthworks activities commence.

Between October 2021 and November 2023, the water monitoring requirement was triggered 23 times. Water samples have been assessed by a laboratory for Total Suspended Solids. Test reports are attached in Section 5 of this report.

2.2 Project Update November 2023

For the month of November 2023, there was a total of **212 mm** of rain fall recorded on site with the largest rainfall event of 128mm occurring between 28-29th November.

The Water Monitoring requirement was triggered on two occasions.

On this first occasion following a rain event between 24-28th November, the monitoring points showed no flow, as such no samples were able to be taken for analysis.

On the second occasion following a further 128mm of rain, samples were taken at the monitoring points and sent to the lab for analysis.

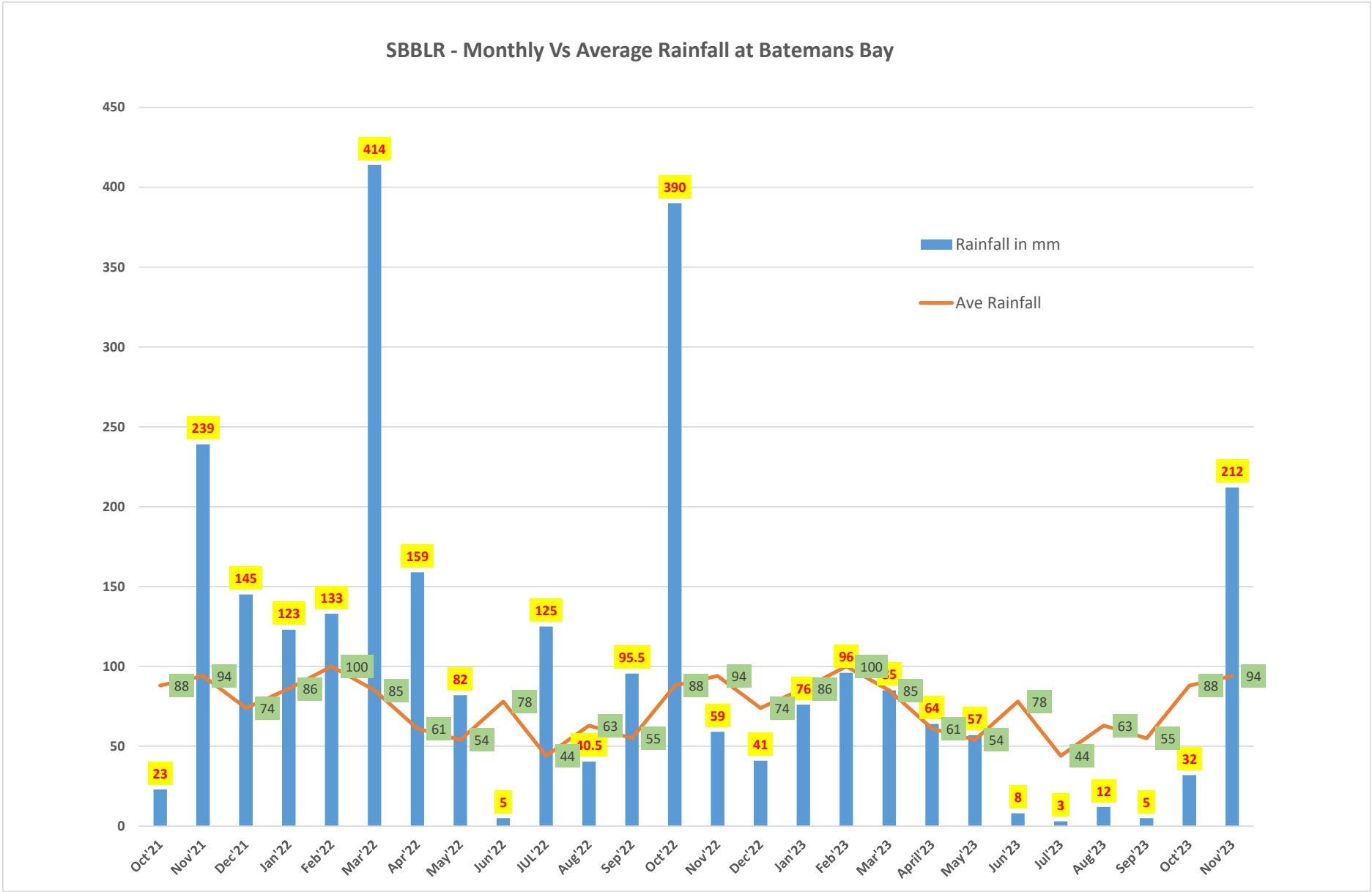
PHOTO: No Flow condition at monitoring point 28/11/2023

3 SBBLR RAINFALL RECORD

4 SBBLR WATER MONITORING REGISTER

5 LAB REPORTS

6 PIRMP Summary


SBBLR - Monthly Vs Average Rainfall at Batemans Bay
Rainfall in mm
Ave Rainfall
450
400
350
300
250
200
150
100
50
0
Oct'21
Nov'21
Dec'21
Jan'22
Feb'22
Mar'22
Apr'22
May'22
Jun'22
JUL'22
Aug'22
Sep'22
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April'23
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Nov'23
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145
123
133
414
159
82
5
125
10.5
95.5
390
59
41
76
96
64
57
8
3
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Water Quality Monitoring Program

Project South Batemans Bay Link Road Project
Project No P.0056316
EPL No. 21590
Instruments Turbidity Meter Serial No. B05203 / **HORIBA**

* TSS interpolated in accordance with parameters specified in the Water Monitoring Program

Rainfall Event																							
Start Date	**End Date**	**Total (mm)**	**Test Location**	**Sample Date**	**Time**	**Sampled By**	**Oil & Grease**	**pH**	**NTU**	**TSS***	**TSS (LAB)**	**TSS Compliance Tol <50 mg/L**	**ORPmV**	**Conductivity mS/cm**	**mg/L DO**	**g/L TDS**	**ppt**	**ot**	**Lab Test Ref**	**Date Lab Report Received**	**Compliance Date for Publishing (+14 WDs)**	**Comments**	**I-Aud 245_ #**
10/12/2021	13/12/2021	99	MCU 35°43'55" S 150°10'03" E - West	13/12/2021	9:20 AM	Chris & Sri	None	6.6	29.1	14.55		Pass	*	*	*	*	*	*					N/A
10/12/2021	13/12/2021	99	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	13/12/2021	9:50 AM	Chris & Sri	None	8	11.7	5.85		Pass	*	*	*	*	*	*					N/A
HORIBA - Water Quality Display																							
13/12/2021	16/12/2021	59	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	16/12/2021	11:45 AM	CB; SN; BM	None	4.95	81.8	40.9	**24**	Pass	392	0.208	11.68	0.135	0.1	0	258756-1				**2**
13/12/2021	16/12/2021	59	MCU 35°43'55" S 150°10'03" E - West	16/12/2021	10:51 AM	CB; SN; BM	None	6.01	20.7	10.35	**10**	Pass	262	0.222	11.6	0.147	0.1	0	258756-3				**2**
6/01/2022	10/01/2022	70	MCU 35°43'55" S 150°10'03" E - West	10/01/2022	1:30 PM	SN; BM	None	7.37	3.4	1.7	**210**	Fail	141	0.188	9.73	0.122	0.09	0				No construction impact on stream west of Princes Hwy	**3**
6/01/2022	10/01/2022	70	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	10/01/2022	2:15 PM	SN; BM	None	7.36	17.6	8.8	**<5**	Pass	181	0.654	10.02	0.418	0.32	0					**3**
8/01/2022	12/01/2022	41	MCU 35°43'55" S 150°10'03" E - West	12/01/2022	11:10 AM	SN; CB	None	6.4	8.7	4.35	**<5**	Pass	255	0.509	10.37	0.326	0.24	0	286793-4			Refer EER-003	**4**
8/01/2022	12/01/2022	41	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	12/01/2022	11:45 AM	SN; CB	None	5.53	41.2	20.6	**18**	Pass	310	0.344	10.29	0.224	0.16	0	286793-5			Refer EER-003	**4**
7/02/2022	11/02/2022	42	MCU 35°43'55" S 150°10'03" E - West	11/02/2022	10:10 AM	SN; PB	None	4.93	1.4	0.7	**6**	Pass	253	0.982	10.98	0.954	0.46	0	291208-1				**5**
7/02/2022	11/02/2022	42	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	11/02/2022	10:30 AM	SN; PB	None	5.37	0	0	**14**	Pass	282	0.291	10.13	0.189	0.14	0	291208-2				**5**
23/02/2022	27/02/2022	83	MCU 35°43'55" S 150°10'03" E - West	27/02/2022	8:30 AM	BM	None	5.61	11.5	5.75	**24**	Pass	255	0.322	9.79	0.21	0.15	0	291208-4			Refer EER-004	**6**
23/02/2022	27/02/2022	83	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	27/02/2022	8:45 AM	BM	None	5.56	54.8	27.4	**36**	Pass	276	0.27	9.62	0.176	0.13	0	291208-5			Refer EER-004	**6**
1/03/2022	4/03/2022	152	MCU 35°43'55" S 150°10'03" E - West	4/03/2022	10:30 AM	SN; CB	None	5.87	24.6	12.3	**23**	Pass	261	0.498	10.08	0.323	0.24	0	291208-7			Refer EER-005	**7**
1/03/2022	4/03/2022	152	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	4/03/2022	10:00 AM	SN; CB	None	5.74	63	31.5	**26**	Pass	265	0.18	9.69	0.117	0.08	0	291208-8			Refer EER-005	**7**
8/03/2022	9/03/2022	193	MCU 35°43'55" S 150°10'03" E - West	9/03/2022	9:08 AM	SN; CB	None	5.77	11	5.5	**6**	Pass	272	0.092	10.69	0.06	0.04	0	293689-1			Refer EER-005	**8**
8/03/2022	9/03/2022	193	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	9/03/2022	8:05 AM	SN; CB	None	5.7	48	24	**14**	Pass	239	0.128	10.23	0.084	0.06	0	293689-2			Refer EER-005	**8**
7/04/2022	11/04/2022	125	MCU 35°43'55" S 150°10'03" E - West	10/04/2022	11:50	BM	None	6.19	8.9	4.45	**8**	Pass	321	0.182	10.31	0.118	0.09	0	295871-1			Refer EER-006	**9**
7/04/2022	11/04/2022	125	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	10/04/2022	12:10	BM	None	5.85	23.5	11.75	**14**	Pass	322	0.163	10.38	0.106	0.08	0	295871-2			Refer EER-006	**9**
4/07/2022	4/07/2022	54	MCU 35°43'55" S 150°10'03" E - West	4/07/2022	10:30	SN; PB	None	6.27	8.6	4.3	**<5**	Pass	345	0.274	11.21	0.178	0.13	0	300859-1				**11**
4/07/2022	4/07/2022	54	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	4/07/2022	10:45	SN; PB	None	8.06	313	156.5	**290**	Fail	178	0.437	11.49	0.284	0.21	0	300859-2			NCR 029; EER-009	**11**
23/09/2022	26/09/2022	40	MCU 35°43'55" S 150°10'03" E - West	26/09/2022	10:25	SN	None	7.59	38.7	19.35	**<5**	Pass	221	0.781	9.56	0.486	0.38	0	307191-1				**12**
23/09/2022	26/09/2022	40	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	26/09/2022	10:50	SN	None	7.72	518	259	**510**	Fail	222	0.364	9.5	0.218	0.17	0	307191-2			NCR 032; EER-010	**12**
26/09/2022	30/09/2022	46	MCU 35°43'55" S 150°10'03" E - West	30/09/2022	9:30	SN; BM	None	6.93	6	3	**<5**	Pass	311	0.445	11.29	0.274	0.21	0	307652-1				**13**
26/09/2022	30/09/2022	46	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	30/09/2022	9:50	SN; BM	None	6.8	60.5	30.25	**45**	Pass	278	0.513	10.63	0.328	0.25	0	307652-2				**13**
1/10/2022	1/10/2022	75	MCU 35°43'55" S 150°10'03" E - West	1/10/2022	8:55	BM	None	6.26	18	9	**<5**	Pass	340	0.312	11.2	0.193	0.15	0	307652-4				**14**
1/10/2022	1/10/2022	75	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	1/10/2022	8:55	BM	None	6.24	19.3	9.65	**11**	Pass	333	0.321	11.24	0.209	0.15	0	307652-5				**14**
5/10/2022	7/10/2022	94	MCU 35°43'55" S 150°10'03" E - West	7/10/2022	8:20	SN; PB	None	8.57	9.6	4.8	**7**	Pass	192	0.134	10.32	0.087	0.06	0	307851-1				**15**
5/10/2022	7/10/2022	94	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	7/10/2022	8:35	SN; PB	None	8.5	35.7	17.85	**14**	Pass	205	0.263	10.45	0.166	0.12	0	307851-2				**15**
10/10/2022	10/10/2022	52	MCU 35°43'55" S 150°10'03" E - West	10/10/2022	9:00	SN; BM	None	4.67	12.1	6.05	**6**	Pass	357	0.114	10.64	0.074	0.05	0	307931-1				**16**
10/10/2022	10/10/2022	52	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	10/10/2022	9:15	SN; BM	None	5.79	32.5	16.25	**18**	Pass	332	0.183	10.47	0.119	0.09	0	307931-2				**16**
21/10/2022	24/10/2022	46	MCU 35°43'55" S 150°10'03" E - West	24/10/2022	8:00	SN; BM	None	6.29	8.5	4.25	**12**	Pass	302	0.297	10.39	0.193	0.14	0	309073-1				**17**
21/10/2022	24/10/2022	46	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	24/10/2022	8:15	SN; BM	None	8.52	90.2	45.1	**60**	Fail	184	0.586	9.2	0.375	0.28	0	309073-2			EPA notified 08/11/2022	**17**
25/10/2022	25/10/2022	89	MCU 35°43'55" S 150°10'03" E - West	25/10/2022	7:49	SN;CB	None	5.19	23.7	11.85	**18**	Pass	379	0.091	10.13	0.059	0.04	0	309073-4				**18**
25/10/2022	25/10/2022	89	HRCD (1) 35°43'47" S 150°10'33" E - Bridge	25/10/2022	7:52	SN;CB	None	5.13	91.1	45.55	**69**	Fail	386	0.121	9.4	0.079	0.06	0	309073-5			EPA notified 08/11/2022	**18**
10/02/2023	10/02/2023	54	MCU 35°43'55" S 150°10'03" E - West	10/02/2023	7:45	**SN; PB**	None	6.37	8.3	4.15	**<5**	Pass	246	0.79	11.15	0.505	0.39	0	316398-1			Report date: 20/02/2023	**19**
10/02/2023	10/02/2023	54	HRCD 35°43'47" S 150°10'33" E - Bridge	10/02/2023	7:30	**SN; PB**	None	5.68	10.3	5.15	**9**	Pass	268	0.371	9.53	0.227	0.18	0	316398-2			Report date: 20/02/2023	**19**
2/03/2023	7/03/2023	39	MCU 35°43'55" S 150°10'03" E - West	7/03/2023	11:40	SN; CB	None	5.26	0.9	0.45	**<5**	Pass	294	0.53	6.17	0.336	0.25	0	318393-1			Report date: 21/03/2023	**20**
2/03/2023	7/03/2023	39	HRCD 35°43'47" S 150°10'33" E - Bridge	7/03/2023	11:55	SN; CB	None	5.35	7	3.5	**6**	Pass	269	0.507	6.15	0.325	0.24	0	318393-2			Report date: 21/03/2023	**20**
13/04/2023	14/04/2023	43	MCU 35°43'55" S 150°10'03" E - West	14/04/2023	7:45	SN; PB	None	5.29	15.9	7.95	**10**	Pass	291	0.287	7.61	0.178	0.14	0	323075/1			Report date: 22/05/2024	**21**
13/04/2023	14/04/2023	43	HRCD 35°43'47" S 150°10'33" E - Bridge	14/04/2023	8:04	SN; PB	None	5.95	115	57.5	**64**	Fail	259	0.491	8.61	0.319	0.24	0	323075/2			Ref EER 14 DATED 14/04/2023	**21**
24/11/2023	28/11/2023	49	MCU 35°43'55" S 150°10'03" E - West	28/11/2023	11:45	CB	None	N/A	N/A	N/A	N/A	Pass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No flow at monitoring point. Unable to sample. Refer photos	**N/A**
24/11/2023	28/11/2023	49	HRCD 35°43'47" S 150°10'33" E - Bridge	28/11/2023	12:45	CB	None	N/A	N/A	N/A	N/A	Pass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No flow at monitoring point. Unable to sample. Refer photos	**N/A**
28/11/2023	30/11/2023	128	MCU 35°43'55" S 150°10'03" E - West	29/11/2023	12:05	CB	None	5.17	7.4	3.7	**6**	Pass	423	0.178	5.53	0.115	0.08	0	TBA	8/12/2023	28/12/2023		**22**
28/11/2023	30/11/2023	128	HRCD 35°43'47" S 150°10'33" E - Bridge	29/11/2023	11:39	CB	None	5.58	32.5	16.25	**16**	Pass	404	0.232	5.78	0.151	0.11	0	TBA	8/12/2023	28/12/2023		**22**

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CERTIFICATE OF ANALYSIS 285756

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	20/12/2021
Date completed instructions received	20/12/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	04/01/2022
Date of Issue	24/12/2021

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		285756-1	285756-2	285756-3
Your Reference	UNITS	HRCD1	HRCD2	MCU2
Date Sampled		16/12/2021	16/12/2021	16/12/2021
Type of sample		Water	Water	Water
Date prepared	-	23/12/2021	23/12/2021	23/12/2021
Date analysed	-	23/12/2021	23/12/2021	23/12/2021
Total Suspended Solids	mg/L	24	12	10

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/12/2021	1	23/12/2021	23/12/2021		23/12/2021	[NT]
Date analysed	-			23/12/2021	1	23/12/2021	23/12/2021		23/12/2021	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	24	28	15	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 286793

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	6 Water
Date samples received	17/01/2022
Date completed instructions received	17/01/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	24/01/2022
Date of Issue	27/01/2022

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics						
Our Reference		286793-1	286793-2	286793-3	286793-4	286793-5
Your Reference	UNITS	HRCD1	HRCD2	MCU2	HRCD1	HRCD2
Date Sampled		06/01/2022	06/01/2022	06/01/2022	12/01/2022	12/01/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/01/2022	18/01/2022	18/01/2022	18/01/2022	18/01/2022
Date analysed	-	18/01/2022	18/01/2022	18/01/2022	18/01/2022	18/01/2022
Total Suspended Solids	mg/L	<5	18	210	<5	18

Miscellaneous Inorganics		
Our Reference		286793-6
Your Reference	UNITS	MCU2
Date Sampled		12/01/2022
Type of sample		Water
Date prepared	-	18/01/2022
Date analysed	-	18/01/2022
Total Suspended Solids	mg/L	20

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			18/01/2022	1	18/01/2022	18/01/2022		18/01/2022	[NT]
Date analysed	-			18/01/2022	1	18/01/2022	18/01/2022		18/01/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	<5	<5	0	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples received in good order: Holding time exceedance

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CERTIFICATE OF ANALYSIS 291208

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto, Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	9 Water
Date samples received	17/03/2022
Date completed instructions received	17/03/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	24/03/2022
Date of Issue	23/03/2022

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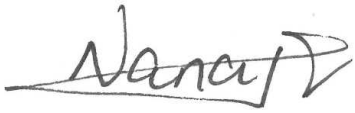
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics						
Our Reference		291208-1	291208-2	291208-3	291208-4	291208-5
Your Reference	UNITS	MCU - West PHWY	HRCD1 - Bridge	HRCD2 - Track	MCU - West PHWY	HRCD1 - Bridge
Date Sampled		27/02/2022	27/02/2022	27/02/2022	04/03/2022	04/03/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Total Suspended Solids	mg/L	24	36	30	23	26

Miscellaneous Inorganics					
Our Reference		291208-6	291208-7	291208-8	291208-9
Your Reference	UNITS	HRCD2 - Track	MCU - West PHWY	HRCD1 - Bridge	HRCD2 - Track
Date Sampled		04/03/2022	09/03/2022	09/03/2022	09/03/2022
Type of sample		Water	Water	Water	Water
Date prepared	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Total Suspended Solids	mg/L	6	6	14	24

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	[NT]
Date analysed	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	24	21	13	85	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 293689

Client Details

Client	Transport of NSW
Attention	Chris Bearzatto, Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	20/04/2022
Date completed instructions received	20/04/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	28/04/2022
Date of Issue	02/05/2022

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		293689-1	293689-2	293689-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		10/04/2022	10/04/2022	10/04/2022
Type of sample		Water	Water	Water
Date prepared	-	27/04/2022	27/04/2022	27/04/2022
Date analysed	-	27/04/2022	27/04/2022	27/04/2022
Total Suspended Solids	mg/L	8	14	22

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			27/04/2022	1	27/04/2022	27/04/2022		27/04/2022	[NT]
Date analysed	-			27/04/2022	1	27/04/2022	27/04/2022		27/04/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	8	9	12	91	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples were out of the recommended holding time for this analysis.

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CERTIFICATE OF ANALYSIS 295871

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	19/05/2022
Date completed instructions received	19/05/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	26/05/2022
Date of Issue	26/05/2022

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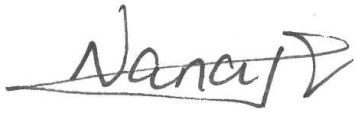
Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		295871-1	295871-2	295871-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		13/05/2022	13/05/2022	13/05/2022
Type of sample		Water	Water	Water
Date prepared	-	25/05/2022	25/05/2022	25/05/2022
Date analysed	-	25/05/2022	25/05/2022	25/05/2022
Total Suspended Solids	mg/L	<5	56	110

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			25/05/2022	1	25/05/2022	25/05/2022		25/05/2022	[NT]
Date analysed	-			25/05/2022	1	25/05/2022	25/05/2022		25/05/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	<5	<5	0	92	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

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Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Total suspended solids have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)

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CERTIFICATE OF ANALYSIS 300859

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	20/07/2022
Date completed instructions received	20/07/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	27/07/2022
Date of Issue	27/07/2022

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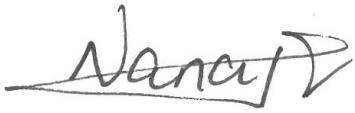
Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		300859-1	300859-2	300859-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		4/07/2022	4/07/2022	4/07/2022
Type of sample		Water	Water	Water
Date prepared	-	25/07/2022	25/07/2022	25/07/2022
Date analysed	-	25/07/2022	25/07/2022	25/07/2022
Total Suspended Solids	mg/L	<5	290	340

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			25/07/2022	3	25/07/2022	25/07/2022		25/07/2022	[NT]
Date analysed	-			25/07/2022	3	25/07/2022	25/07/2022		25/07/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	3	340	340	0	118	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 307191

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	04/10/2022
Date completed instructions received	04/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	11/10/2022
Date of Issue	11/10/2022

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Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		307191-1	307191-2	307191-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Depth		0.1	0.1	0.1
Date Sampled		26/09/2022	26/09/2022	26/09/2022
Type of sample		Water	Water	Water
Date prepared	-	11/10/2022	11/10/2022	11/10/2022
Date analysed	-	11/10/2022	11/10/2022	11/10/2022
Total Suspended Solids	mg/L	<5	330	510

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			11/10/2022	2	11/10/2022	11/10/2022		11/10/2022	[NT]
Date analysed	-			11/10/2022	2	11/10/2022	11/10/2022		11/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	2	330	360	9	87	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

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The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 307652

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	6 Water
Date samples received	10/10/2022
Date completed instructions received	10/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	17/10/2022
Date of Issue	24/10/2022

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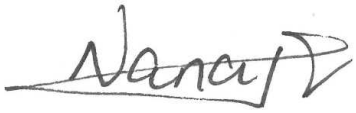
Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics						
Our Reference		307652-1	307652-2	307652-3	307652-4	307652-5
Your Reference	UNITS	MCU-West PHWY	HRCD1- Bridge	HRCD2- Track	MCU- West PHWY	HRCD1- Bridge
Depth		100	100	100	100	100
Date Sampled		30/09/2022	30/09/2022	30/09/2022	02/10/2022	02/10/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	17/10/2022	17/10/2022	17/10/2022	17/10/2022	17/10/2022
Date analysed	-	17/10/2022	17/10/2022	17/10/2022	17/10/2022	17/10/2022
Total Suspended Solids	mg/L	<5	45	15	<5	11

Miscellaneous Inorganics		
Our Reference		307652-6
Your Reference	UNITS	HRCD2- Track
Depth		100
Date Sampled		02/10/2022
Type of sample		Water
Date prepared	-	17/10/2022
Date analysed	-	17/10/2022
Total Suspended Solids	mg/L	8

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			17/10/2022	4	17/10/2022	17/10/2022		17/10/2022	[NT]
Date analysed	-			17/10/2022	4	17/10/2022	17/10/2022		17/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	4	<5	5	0	88	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
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Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 307931

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	3 Water
Date samples received	13/10/2022
Date completed instructions received	13/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	20/10/2022
Date of Issue	20/10/2022

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		307931-1	307931-2	307931-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Depth		100	100	100
Date Sampled		10/10/2022	10/10/2022	10/10/2022
Type of sample		Water	Water	Water
Date prepared	-	20/10/2022	20/10/2022	20/10/2022
Date analysed	-	20/10/2022	20/10/2022	20/10/2022
Total Suspended Solids	mg/L	6	18	22

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/10/2022	1	20/10/2022	20/10/2022		20/10/2022	[NT]
Date analysed	-			20/10/2022	1	20/10/2022	20/10/2022		20/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	6	6	0	86	[NT]

Result Definitions

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

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CERTIFICATE OF ANALYSIS 309073

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	6 Water
Date samples received	27/10/2022
Date completed instructions received	27/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

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Report Details

Date results requested by	03/11/2022
Date of Issue	03/11/2022

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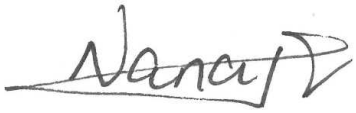
Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics						
Our Reference		309073-1	309073-2	309073-3	309073-4	309073-5
Your Reference	UNITS	MCU	HRCD1	HRCD2	MCU	HRCD1
Depth		100	100	100	100	100
Date Sampled		24/10/2022	24/10/2022	24/10/2022	25/10/2022	25/10/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Date analysed	-	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Total Suspended Solids	mg/L	12	60	69	18	69

Miscellaneous Inorganics		
Our Reference		309073-6
Your Reference	UNITS	HRCD2
Depth		100
Date Sampled		25/10/2022
Type of sample		Water
Date prepared	-	03/11/2022
Date analysed	-	03/11/2022
Total Suspended Solids	mg/L	56

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			03/11/2022	5	03/11/2022	03/11/2022		03/11/2022	[NT]
Date analysed	-			03/11/2022	5	03/11/2022	03/11/2022		03/11/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	5	69	80	15	91	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

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Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 316398

Client Details

Client	Transport for NSW
Attention	Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	2 Water
Date samples received	13/02/2023
Date completed instructions received	13/02/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	20/02/2023
Date of Issue	20/02/2023

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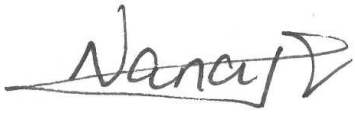
Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics			
Our Reference		316398-1	316398-2
Your Reference	UNITS	MCU	HRCD1
Depth		70	70
Date Sampled		10/02/2023	26/09/2022
Type of sample		Water	Water
Date prepared	-	16/02/2023	16/02/2023
Date analysed	-	16/02/2023	16/02/2023
Total Suspended Solids	mg/L	9	<5

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			16/02/2023	[NT]	[NT]	[NT]	[NT]	16/02/2023	[NT]
Date analysed	-			16/02/2023	[NT]	[NT]	[NT]	[NT]	16/02/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
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The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 318393

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	2 Water
Date samples received	10/03/2023
Date completed instructions received	10/03/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	17/03/2023
Date of Issue	17/03/2023

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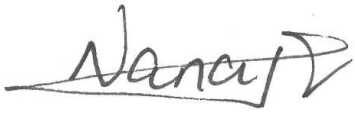
Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics			
Our Reference		318393-1	318393-2
Your Reference	UNITS	MCU	HRCD1
Depth		100	50
Date Sampled		07/03/2023	07/03/2023
Type of sample		Water	Water
Date prepared	-	16/03/2023	16/03/2023
Date analysed	-	16/03/2023	16/03/2023
Total Suspended Solids	mg/L	<5	6

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			16/03/2023	[NT]	[NT]	[NT]	[NT]	16/03/2023	[NT]
Date analysed	-			16/03/2023	[NT]	[NT]	[NT]	[NT]	16/03/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	112	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

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In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 323075

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	2 Water
Date samples received	15/05/2023
Date completed instructions received	15/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	22/05/2023
Date of Issue	22/05/2023

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics			
Our Reference		323075-1	323075-2
Your Reference	UNITS	MCU	HRCD1
Depth		100mm	100mm
Date Sampled		14/04/2023	14/04/2023
Type of sample		Water	Water
Date prepared	-	17/05/2023	17/05/2023
Date analysed	-	17/05/2023	17/05/2023
Total Suspended Solids	mg/L	10	64

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			17/05/2023	[NT]	[NT]	[NT]	[NT]	17/05/2023	[NT]
Date analysed	-			17/05/2023	[NT]	[NT]	[NT]	[NT]	17/05/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	108	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
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The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples were out of the recommended holding time for this analysis.

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CERTIFICATE OF ANALYSIS 339188

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	**Transport for NSW - Batemans Bay Link Road**
Number of Samples	2 Water
Date samples received	01/12/2023
Date completed instructions received	01/12/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	08/12/2023
Date of Issue	08/12/2023

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Results Approved By
Nick Sarlamis, Assistant Operation Manager

Authorised By
Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics			
Our Reference		339188-1	339188-2
Your Reference	UNITS	MCU	HRCD1
Depth		100mm	100mm
Date Sampled		29/11/2023	29/11/2023
Type of sample		Water	Water
Date prepared	-	06/12/2023	06/12/2023
Date analysed	-	06/12/2023	06/12/2023
Total Suspended Solids	mg/L	6	16

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			06/12/2023	[NT]	[NT]	[NT]	[NT]	06/12/2023	[NT]
Date analysed	-			06/12/2023	[NT]	[NT]	[NT]	[NT]	06/12/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	99	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Transport for NSW

South Batemans Bay Link Road

Pollution Incident Response Management Plan - Summary

EPL 21590

Under Part 5.7 of the *Protection of the Environment Operations Act 1997*, there is a duty to notify each relevant authority (identified below) of a pollution incident, where material harm to the environment is caused or threatened. Material harm includes actual or potential harm to the health or safety of human beings or to ecosystems, that is not trivial or that results in actual or potential loss or property damage of an amount over $10,000.

In the event of a potential pollution incident causing or threatening material harm, and in accordance with the Pollution Incident Response Management Plan project staff will seek immediate assistance from the Works Supervisor and Senior Project Engineer in consultation with the Environment and Sustainability Manager to determine whether notification to the relevant authorities is required. If the site staff listed above are not available, staff will contact the District Works Manager in Bega and the Senior Environment and Sustainability Manager to determine whether notification to the relevant authorities is required. If none of the listed contacts are available, the most senior staff member available will determine whether notification to the relevant authorities is required. If an incident is determined to be Material Harm, the most senior staff member available will advise who will make notification to the relevant authorities, as detailed below.

Relevant Authority Notification	
If the incident presents an immediate threat to human health or property, notification will be undertaken in the following order:	
Fire and Rescue NSW	000
EPA	131 555
Ministry of Health Southern Health District	1800 999 880
Safe Work NSW	131 050
Eurobodalla Shire	02 4474 1000
If there is not an immediate threat to human health or the environment, notification will be undertaken in the following order:	
EPA Environment Line	131 555
Eurobodalla Shire	02 4474 1000
Ministry of Health Southern Health District	1800 999 880
Safe Work NSW	131 050
Fire and Rescue NSW	1300 729 579

Community Advice Mechanisms

Early warnings for affected or potentially affected community members for any pollution incident are to be communicated by methods such as door knocking, letters, signs, notices, local papers, leaflets, etc. (minimum of letter box drop and a clearly visible sign on premises). For air pollution incidents that may affect community members, those community members may be asked to either close their doors and windows and stay indoors until further notice or to vacate the premises. For water pollution incidents that may affect community members, those community members may be asked to avoid use of the water until further notice.

Transport for NSW will provide regular updates of any pollution incidents either via letterbox drop, notices in local papers and/or via door knocks as required.