



NGH



Pre-construction Water Quality Monitoring Report

Event 13 2023

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1. Introduction

In 2020 Snowy Hydro Limited (Snowy Hydro) obtained approval (application number SSI 9208 and EPBC 2018/8322) to expand the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme), by linking the existing Tantangara and Talbingo reservoirs through a series of underground tunnels and constructing a new underground hydro-electric power station (referred to as 'Snowy 2.0').

To connect Snowy 2.0 to the National Energy Market (NEM), a new transmission connection is required. NSW Electricity Networks Operations Pty Ltd as a trustee for NSW Electricity Operations Trust (known as TransGrid and the Proponent) will construct a substation and overhead transmission lines (the Project) to facilitate the connection of Snowy 2.0 to the existing electrical transmission network. The Project location is approximately 27 kilometres (km) east of Tumbarumba, New South Wales (NSW). UGL has been engaged on behalf of the Proponent to undertake the Project.

The purpose of the pre-construction water quality monitoring is to address the requirements of the Environmental Impact Statement (EIS) (Jacobs 2020) that was prepared by the Proponent under Part 5, Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* to assess the environmental impacts of the proposed Project. Subsequently, an Amendment Report (TransGrid 2021b) was submitted with the Response to Submissions (TransGrid 2021a) to the Department of Planning and Environment (DPE) with updated mitigation measures for the Project.

The objective of the pre-construction surface water quality monitoring is to collect baseline data prior to Project construction works. Baseline data will be compared to ANZG (2018) guidelines to characterise the existing surface water quality. The data will be compared to the water quality objectives (WQO) for the Project area.

2. Program and methodology

The Pre-construction Water Quality Monitoring Program and Methodology (the Program) (NGH 2022) has been prepared to detail the WQOs for the Project, the location of the monitoring locations and the methodology for water sampling.

The Project area within Kosciuszko National Park is an area of high conservation value. Therefore, the water quality objectives for physical and chemical stressors includes **no change beyond natural variability** (ANZG 2018). The Default Guideline Values (DGV) for Upland Rivers has been provided for physical and chemical stressors and is detailed in the Program (NGH 2022).

The location of the sampling points in relation to the Project footprint is provided in Figure 2-1.

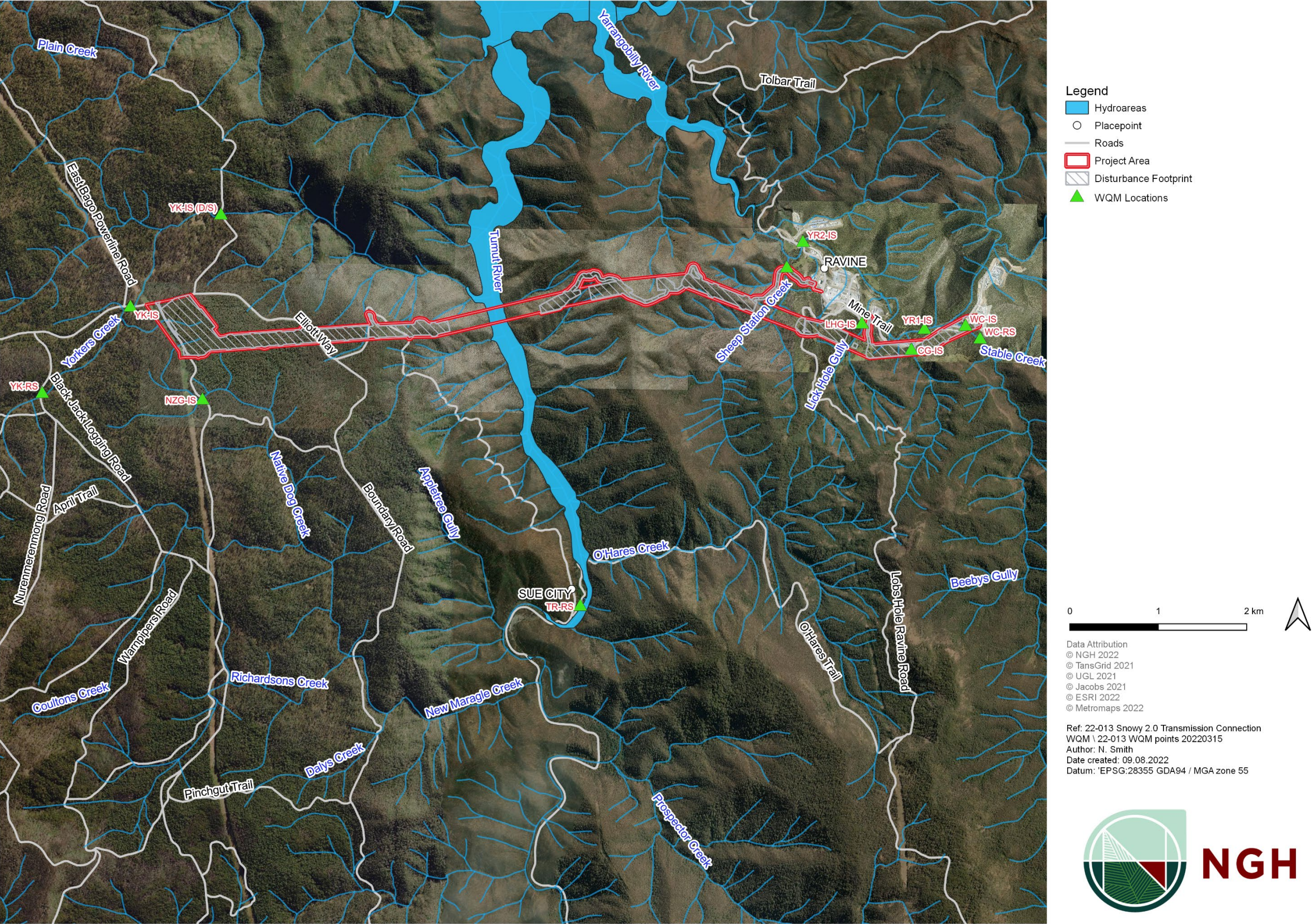


Figure 2-1 WQM locations

3. Monitoring event observations and results

Images for Cave Gully, Talbingo Reservoir and Yorkers Creek are provided as Figure 3-1 to Figure 3-3. Water quality results for each site and are provided in Appendix A. Results are highlighted where they exceed the default guideline value (refer to the Program (NGH 2022)). Table 3-1 identifies exceedances of the DGVs for metals, cyanide and nutrients. Physico-chemical results have been provided in Figure 3-4 to Figure 3-33. Field data and observations are provided in Appendix B.

3.1. Event 13

NGH conducted the first, second and third rounds of sampling in March (Event 1), April (Event 2), May and early June (Event 3), late June (Event 4), July (Event 5), August (Event 6), early October (Event 7), late October (Event 8), November (Event 9), December (Event 10) 2022, January (Event 11) 2023 and February (Event 13). Reports for each event were prepared following receipt of the laboratory results (NGH 2022a; 2022b; 2022c; 2022d; 2022e, 2022f, 2022g, 2022h, 2022i, 2022j, 2023a, 2023b). The results of Event 1 through to Event 12 have been compared in this report to the results of Event 13.

NGH Environmental Scientist, Nicola Smith, conducted the Event 13 monitoring event with a UGL representative on 15 and 16 March 2023. The weather was sunny with a slight breeze. Data from the Cabramurra SMHEA automatic weather station on 15 March 2023 (Station ID 072161) indicates that wind speeds were from the west, with speeds of 13 km/hr in the morning and 50 km/hr in the afternoon. Temperatures on the day included a low of 11°C and a high of 20.2°C. Data from the Tumbarumba weather station for 16 March 2023 (Station ID 072043) indicates that the weather was calm, with temperatures ranging from a low of 13°C to a high of 29.5°C.

Generally, low, clear water flows were observed. Water was observed to be cloudy at YK-IS (D/S) and YK-IS. No hydrocarbon sheen or odours were noted. The banks of each channel were well vegetated with the vegetation matrix weedier in some locations. Evidence of bank erosion from hooved animals was observed at the New Zealand Gully site, the Yorkers Creek impact site and Yorkers Creek reference site. Flows were observed to have decreased, in comparison to recent sampling events.



Figure 3-1 Cave Gully impact site (CG-IS)



Figure 3-2 Talbingo Reservoir reference site (TR-RS)



Figure 3-3 Yorkers Creek reference site (YK-RS)

3.1.1. Results

The results indicate that the water quality in the locations where samples were taken generally meets the DGVs for Upland Rivers with a 99% species protection level for toxicants. Locations where a laboratory result was returned for a physical or chemical stressor was above the DGV are provided in Table 3-1.

Table 3-1 Results above the DGV for Upland Rivers with 99% species protection level

Site identification	Analyte	DGV	Result	Comment
TR-RS	Nitrogen Oxides mg/L	0.015	0.1	
CG-IS	Zinc mg/L	0.0024	0.005	Always returns a high total dissolved solid result. Results for Zinc and TSS are consistent with prior sampling events.
	Total Nitrogen mg/L	0.25	2	
	Total Dissolved Solids (TDS) mg/L		271	
	Total Suspended Solids (TSS) mg/L	0.2	2	
LHG-IS	Aluminium mg/L	0.027	0.13	Always returns a high total dissolved solid result. Results for Zinc and TSS are consistent with prior sampling events.
	Zinc mg/L	0.0024	0.005	
	Total Dissolved Solids (TDS) mg/L		293	
	Total Suspended Solids (TSS) mg/L	0.2	3	
WC-IS	Zinc mg/L	0.0024	0.02	This is consistent with prior sampling events.
YK-IS (D/S)	Aluminium mg/L	0.027	0.26	Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken upstream of culvert.
	Iron mg/L	0.3	0.31	
	Total Nitrogen mg/L	0.25	9	
	Nitrogen Oxides mg/L	0.015	0.1	
	Total Suspended Solids (TSS) mg/L	0.2	9	
NZG-IS	Aluminium mg/L	0.027	0.11	Located within Bago State Forest. Sample taken upstream of timber supported

Site identification	Analyte	DGV	Result	Comment
				unsealed track bridge. Banks heavily vegetated, shallow channel.
YK-RS	Aluminium mg/L	0.027	0.36	Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken downstream of culvert under unsealed track. Flow through culvert is restricted upstream causing a wetland environment.
	Iron mg/L	0.3	0.37	
	Total Nitrogen mg/L	0.25	6	
	Nitrogen Oxides mg/L	0.015	0.1	
	Total Suspended Solids (TSS) mg/L	0.2	6	
YK-IS	Aluminium mg/L	0.027	0.32	Located within Bago State Forest and adjacent to Elliott Way (road). Unknown activities within the State Forest upstream.
	Iron mg/L	0.3	0.35	
	Total Nitrogen mg/L	0.25	5	
	Total Suspended Solids (TSS) mg/L	0.2	5	

CG-IS and LHG-IS displayed elevated values for total dissolved solids compared to the other sampling locations. Total suspended solids (TSS) at CG-IS, LHG-IS, YK-IS (D/S), YK-RS and YK-IS were above the 0.2 mg/L assigned DGV (refer to Figure 3-18).

Water temperatures ranged from 12.9 degrees Celsius at YK-IS (D/S) to 20.9 degrees Celsius at YR2-RS.

Many of the results are recorded as below (<) the limit of detection. To enable calculation of the statistics, the *Limit of Detection Divided by Two (LOD/2) Method* (Cohen and Ryan 1989) has been applied. This data is provided in Appendix A.

The following time series, Figure 3-4 to Figure 3-23, display physico-chemical water quality through time for monitoring Event 1 (March), Event 2 (April), Event 3 (May/June), Event 4 (June), Event 5 (July), Event 6 (August), Event 7 (early October), Event 8 (late October), Event 9 (November), Event 10 (December), Event 11 (January), Event 12 (February) and Event 13 (March). Where a DGV is available, these values are shown on the graph and have been included for dissolved oxygen (%), conductivity, pH and turbidity.

No flows were present at SSC-IS for Event 13 at the time of sampling. No data was available for collection at this location.

In addition to this, no data was obtained for Dissolved Oxygen (%) or Specific Conductance (uS/cm) during Event 13, due to technical issues with the Water Quality Meter (WQM).

Temperatures within the Talbingo Reservoir catchment have generally decreased since Event 12, refer to Figure 3-4. TR-RS registered the greatest decrease in temperature, from 19.3°C during Event 12 to 14.6°C in Event 13. YK-RS and YK-IS, within the Yorkers Creek catchment, both registered slight increases in temperature, when compared to Event 12, refer to Figure 3-5.

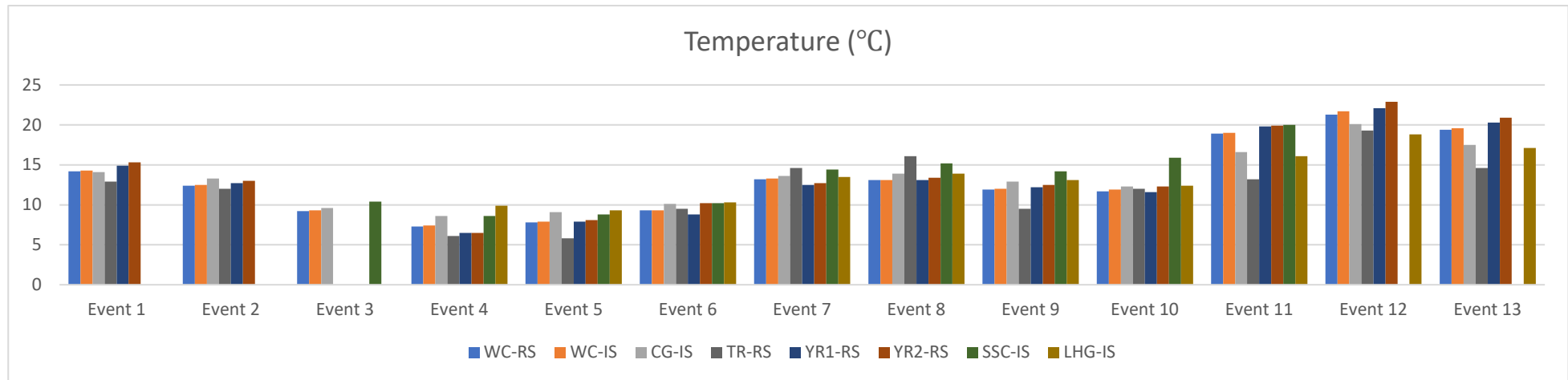


Figure 3-4 Temperature for Talbingo Reservoir catchment

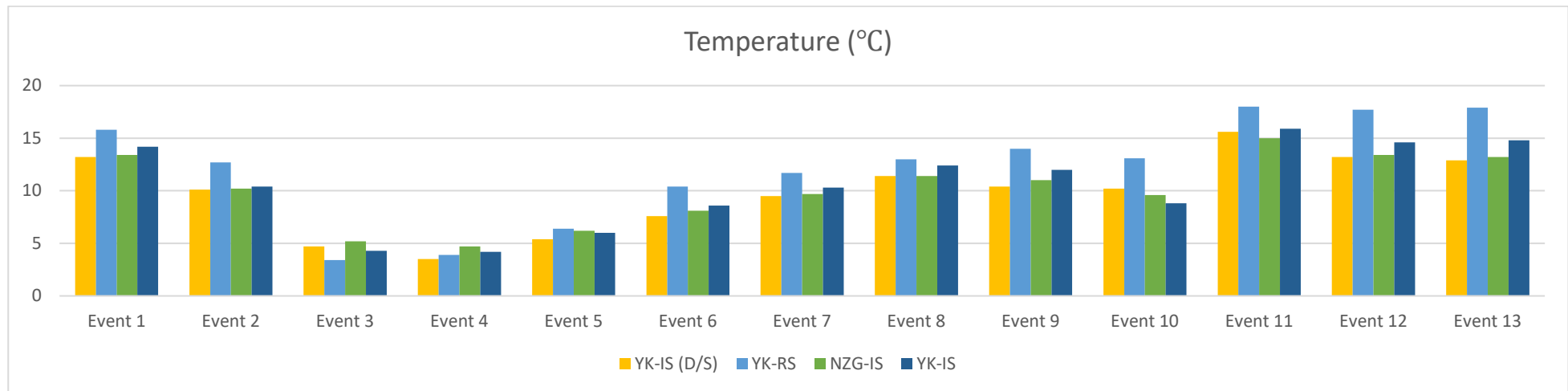


Figure 3-5 Temperature for Yorkers Creek catchment

The results for DO (ppm) for the Talbingo Reservoir catchment have generally decreased, when compared with results for Event 12, refer to Figure 3-8. WC-RS registered a slight increase, from 8.92 ppm during Event 12, to 9.11 ppm during Event 13. Results for DO (ppm) within the Yorkers Creek catchment have also decreased, refer to Figure 3-9. The highest reading for DO (ppm) was recorded within the Talbingo catchment at CG-IS (9.56 ppm).

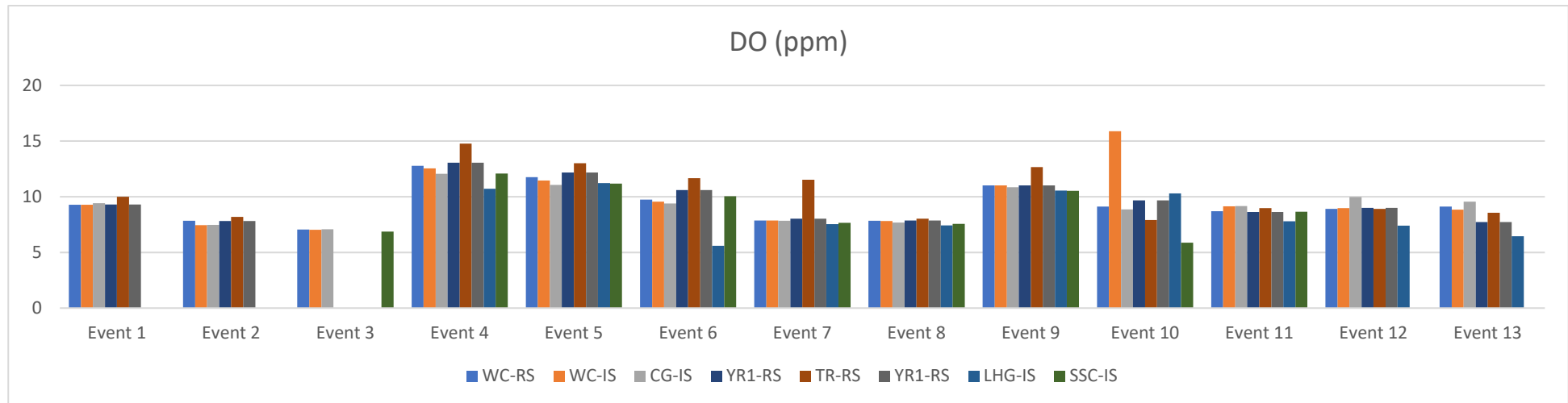


Figure 3-6 Dissolved Oxygen (ppm) for Talbingo Reservoir catchment

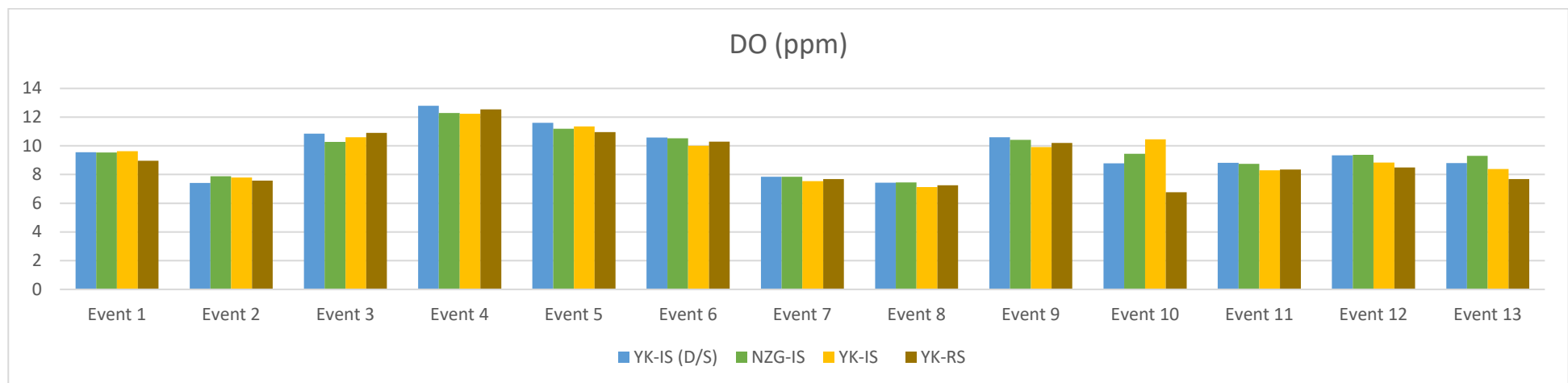


Figure 3-7 Dissolved Oxygen (ppm) for Yorkers Creek catchment

Conductivity within the Talbingo Reservoir catchment has slightly increased during Event 13, when compared with results from Event 12, refer to Figure 3-12. Conductivity at LHG-IS recorded the most significant increase within the Talbingo Reservoir with a reading of 445.6 $\mu\text{S}/\text{cm}$ for Event 13, up from 399.3 $\mu\text{S}/\text{cm}$ during Event 12. Results for the Yorkers Creek catchment continue to return relatively low conductivity readings, refer to Figure 3-13. This is considered likely a result of the geology upstream. Conductivity at NZG-IS (39.2 $\mu\text{S}/\text{cm}$) has increased, when compared with results from Event 12 (31.6 $\mu\text{S}/\text{cm}$). Conductivity results from NZG-IS continues to be greater than the conductivity recorded at the Yorkers Creek sites, with the result 9.2 $\mu\text{S}/\text{cm}$ above the lower DGV threshold. The pattern between sites is mostly reflective of the pattern for specific conductance.

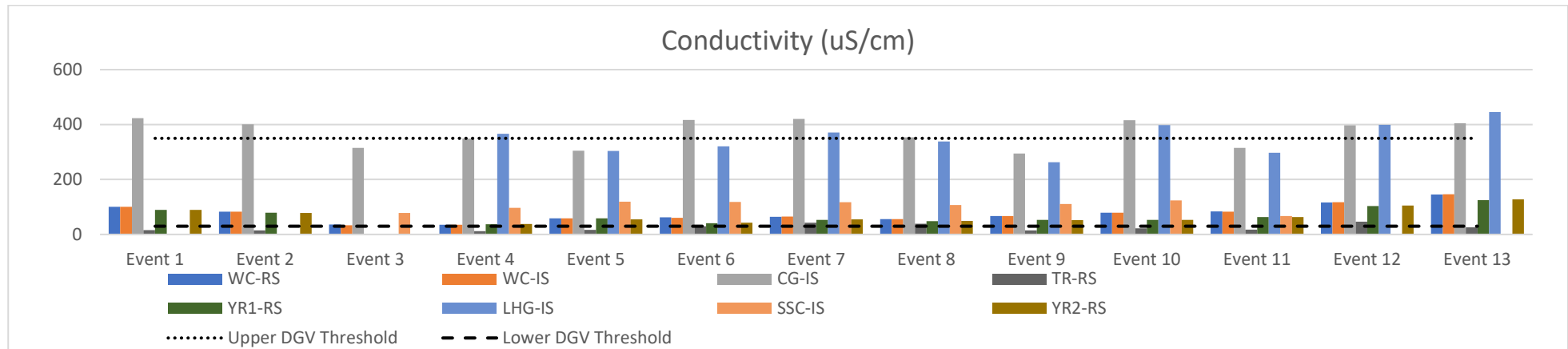


Figure 3-8 Conductivity ($\mu\text{S}/\text{cm}$) for Talbingo Reservoir catchment

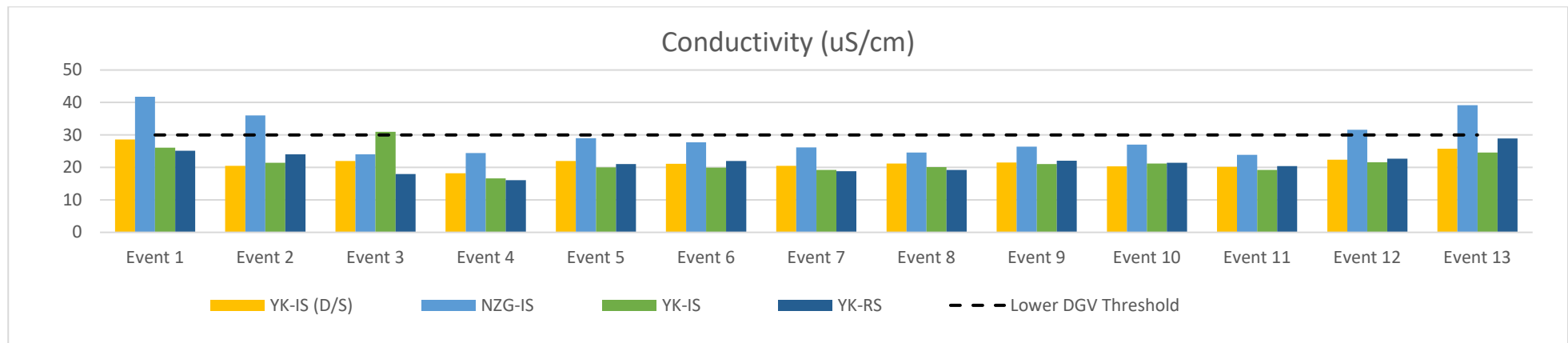


Figure 3-9 Conductivity ($\mu\text{S}/\text{cm}$) for Yorkers Creek catchment

Turbidity values were below the lower DGV threshold (2 NTU) within the Talbingo Reservoir catchment for Event 13. Turbidity readings within the Talbingo Reservoir catchment have notably decreased since Event 8, refer to Figure 3-14 and Figure 3-15. Note that the results for CG-IS have been provided in Figure 3-15 in this report to more accurately display the other sampling locations in the Talbingo reservoir catchment.

Turbidity readings within the Yorkers Creek catchment have remained relatively consistent, with the exception of YK-IS (D/S), which recorded a reading of 12 NTU during Event 13, down from 20.22 NTU during Event 12, refer to Figure 3-16.

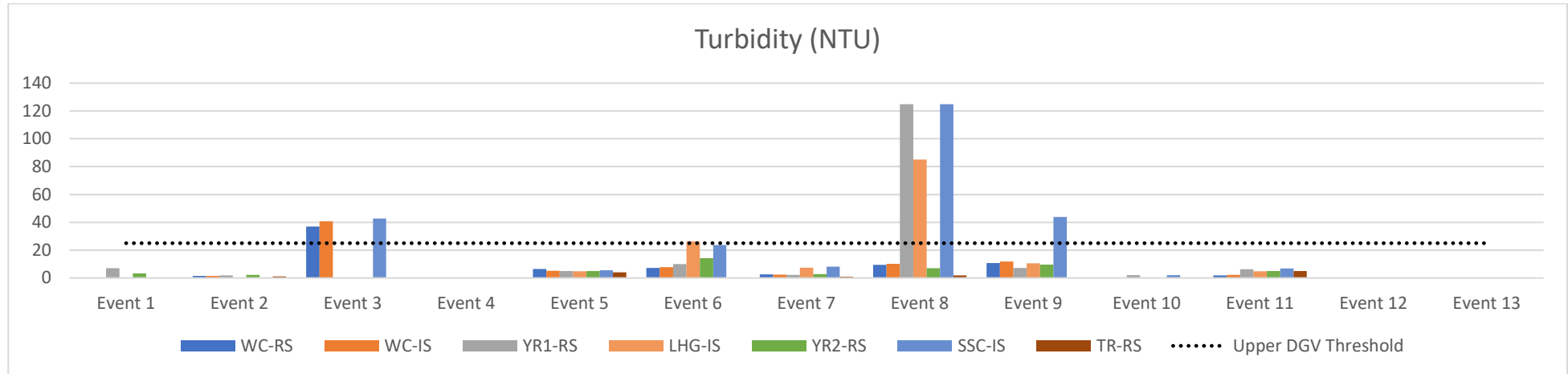


Figure 3-10 Turbidity (NTU) for the Talbingo Reservoir catchment

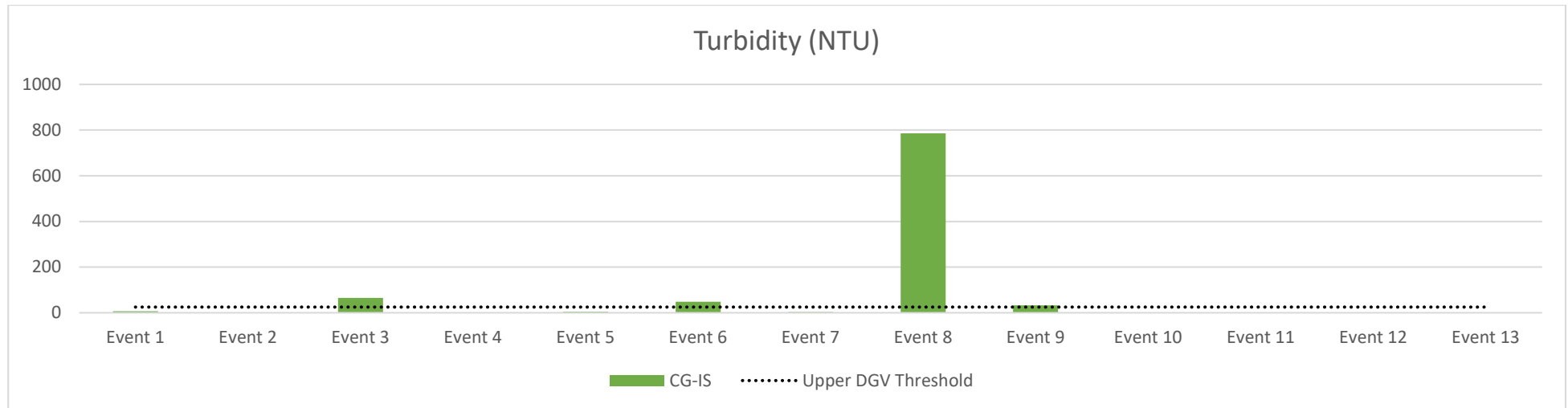


Figure 3-11 Turbidity (NTU) for CG-IS, within the Talbingo Reservoir catchment

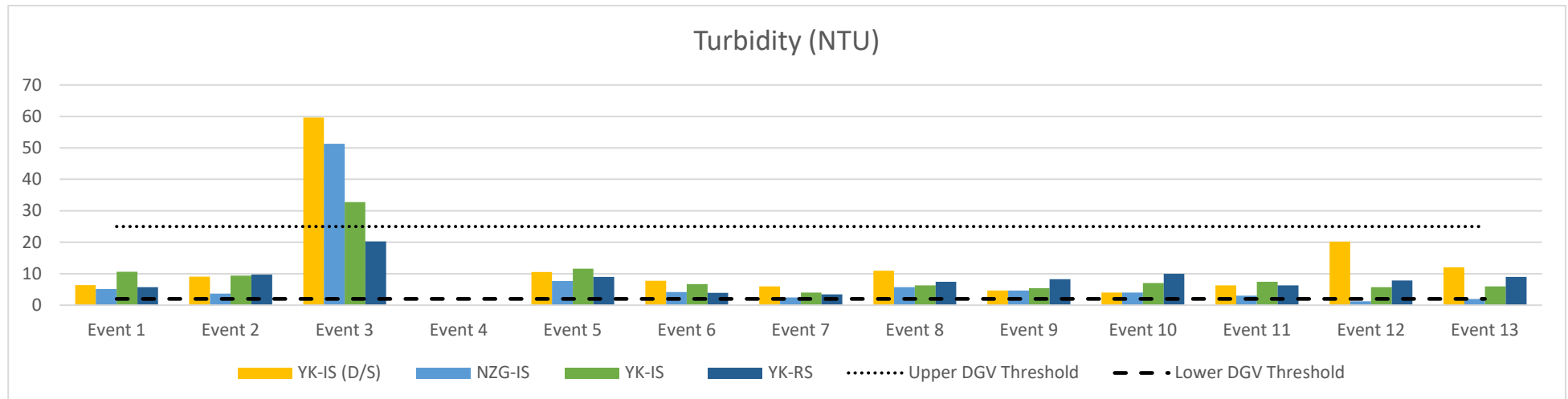


Figure 3-12 Turbidity (NTU) for the Yorkers Creek catchment

Total suspended solids (TSS) have decreased within the Talbingo Reservoir catchment since Event 12, refer to Figure 3-17. Total suspended solids remain low at CG-IS for Event 13, refer to Figure 3-18. Total suspended solids have also decreased within Yorkers Creek, with YK-IS (D/S) decreasing from 28 mg/L during Event 12, to 9 mg/L during Event 13, refer to Figure 3-19.

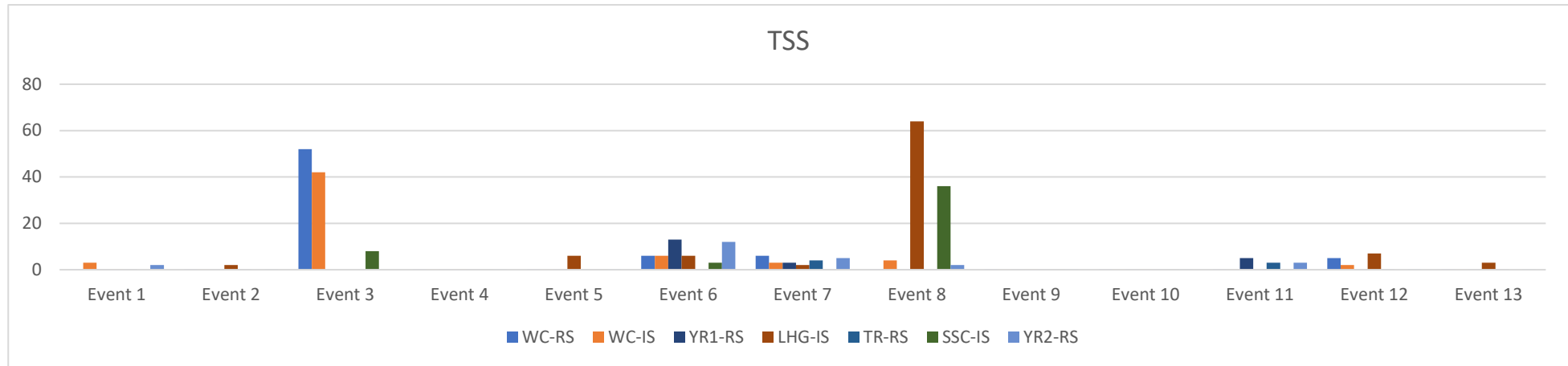


Figure 3-13 Total Suspended Solids for the Talbingo Reservoir catchment

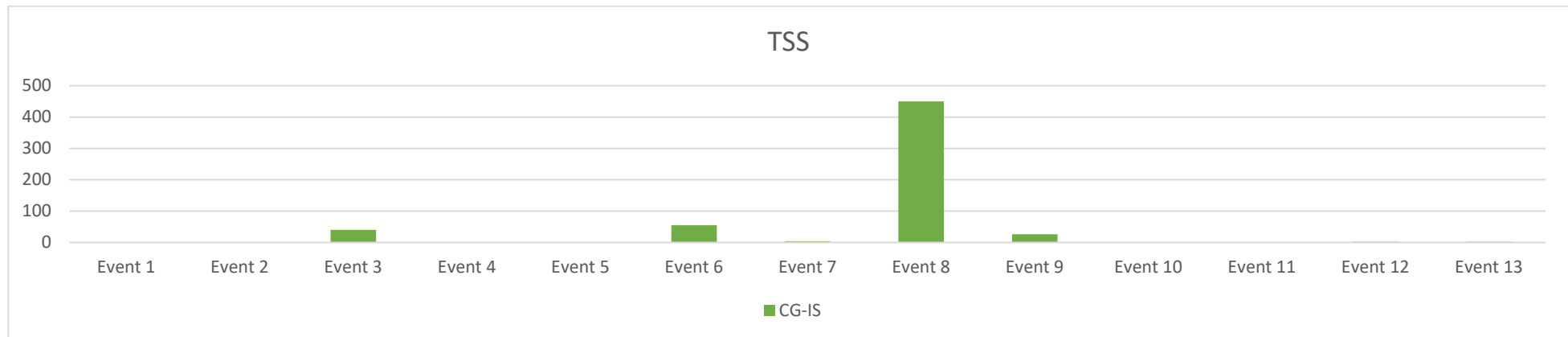


Figure 3-14 Total Suspended Solids for CG-IS, within the Talbingo Reservoir catchment

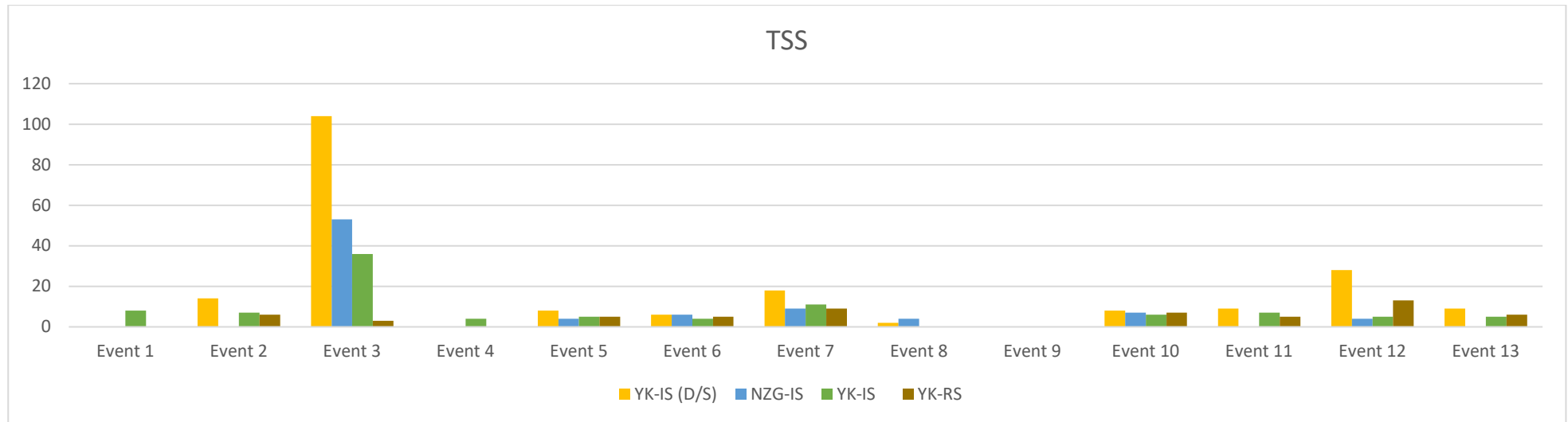


Figure 3-15 Total Suspended Solids for the Yorkers Creek catchment

Values of pH for the Talbingo Reservoir catchment have slightly increased since Event 12. Five sites (WC-RS, WC-IS, CG-IS, YR2-RS and YR1-RS) had values of pH that fell above the upper DGV range of 8 pH units, refer to Figure 3-20.

Values of pH for the Yorkers Creek catchment have also increased since Event 12, refer to Figure 3-21. All readings fell within the DGV range for values of pH (6.5 – 8 pH units).

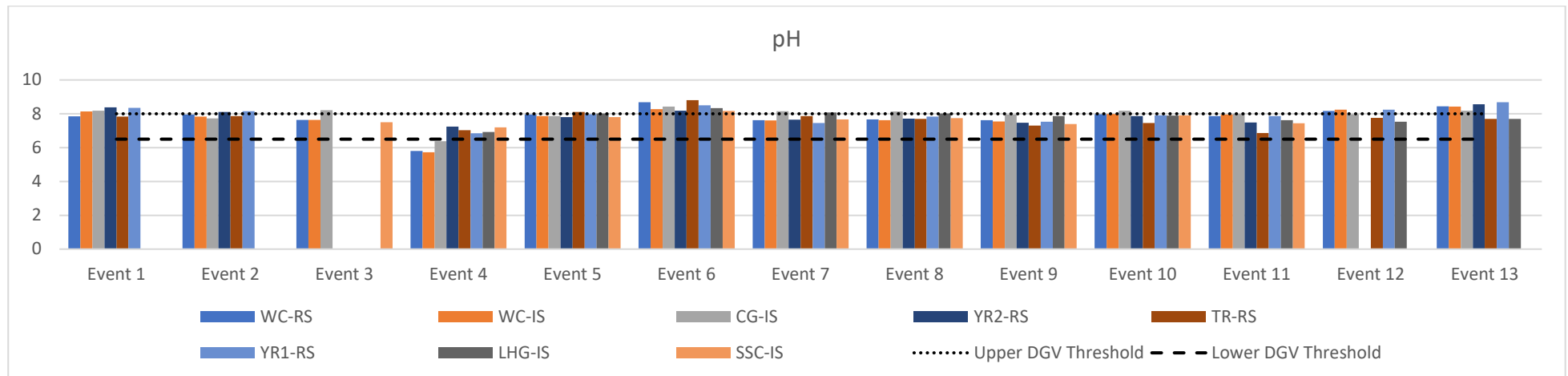


Figure 3-16 Potential of Hydrogen (pH) for Talbingo Reservoir catchment

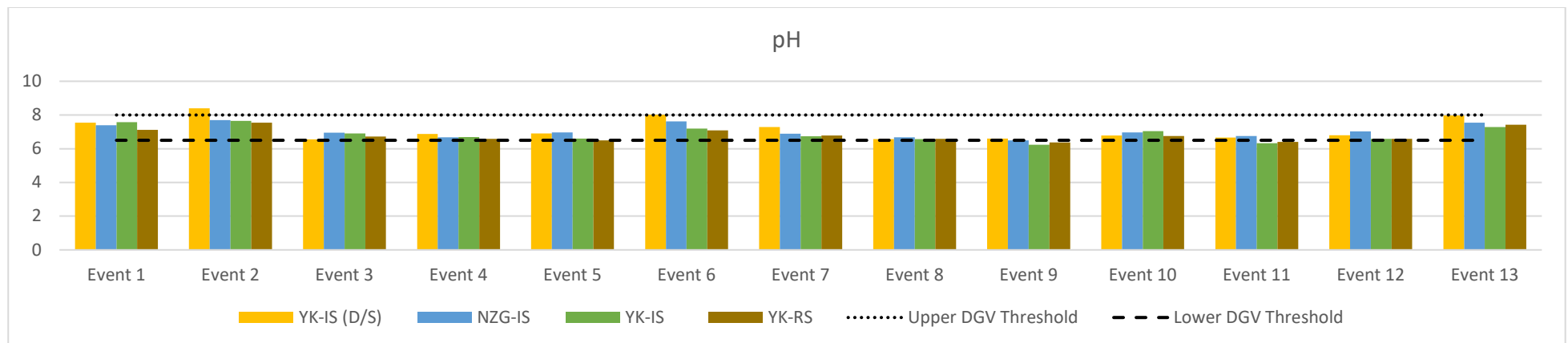


Figure 3-17 Potential of Hydrogen (pH) for Yorkers Creek catchment

The values for oxygen redox potential within the Talbingo Reservoir catchment have decreased since Event 12, with the exception of LHG-IS, which increased from a negative value of -19.1 mV in Event 12, to 6 mV during Event 13, refer to Figure 3-22. Oxygen redox potential has also notably decreased within the Yorkers Creek catchment, refer to Figure 3-23.

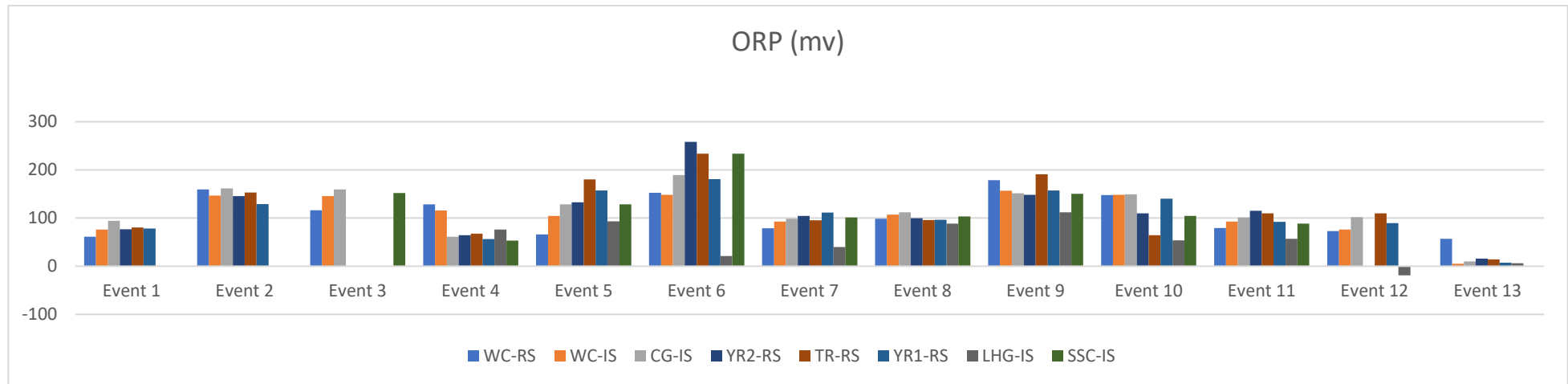


Figure 3-18 Oxygen Redox Potential (ORP) for Talbingo Reservoir catchment

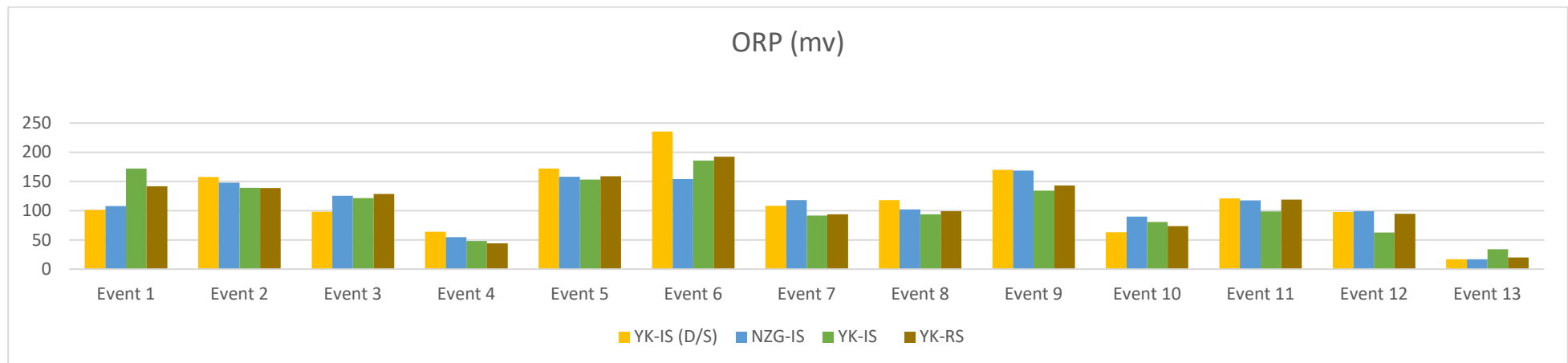


Figure 3-19 Oxygen Redox Potential (ORP) for Yorkers Creek catchment

Ammonia (mg/L) levels were below the limit of reporting for all sites within the Talbingo and Yorkers Creek catchments for Event 13, with the exception of YR2-RS, which registered a reading of 0.2 mg/L, refer to Figure 3-24 and Figure 3-25.

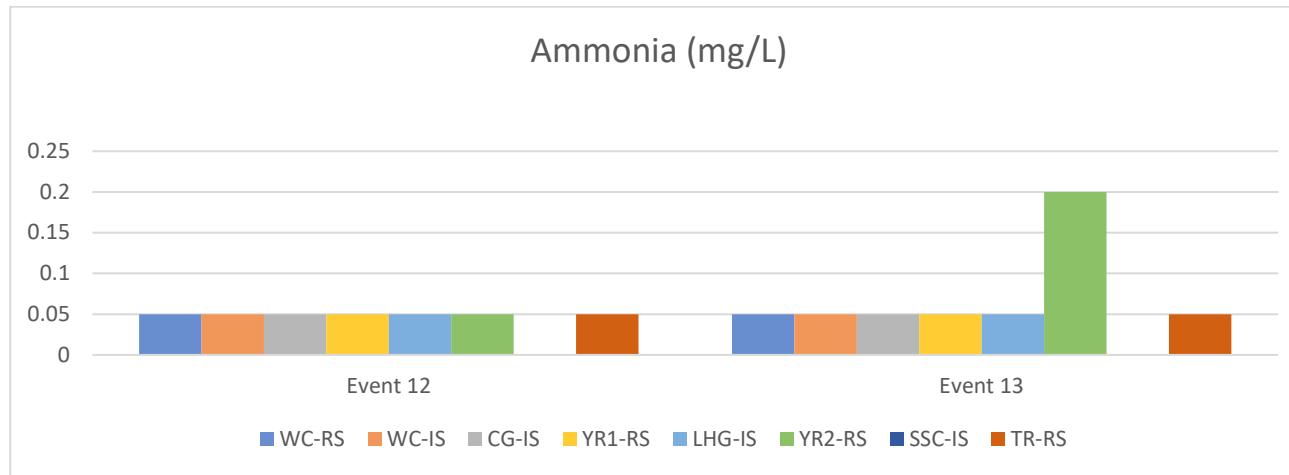


Figure 3-20 Ammonia (mg/L) for the Talbingo Reservoir catchment

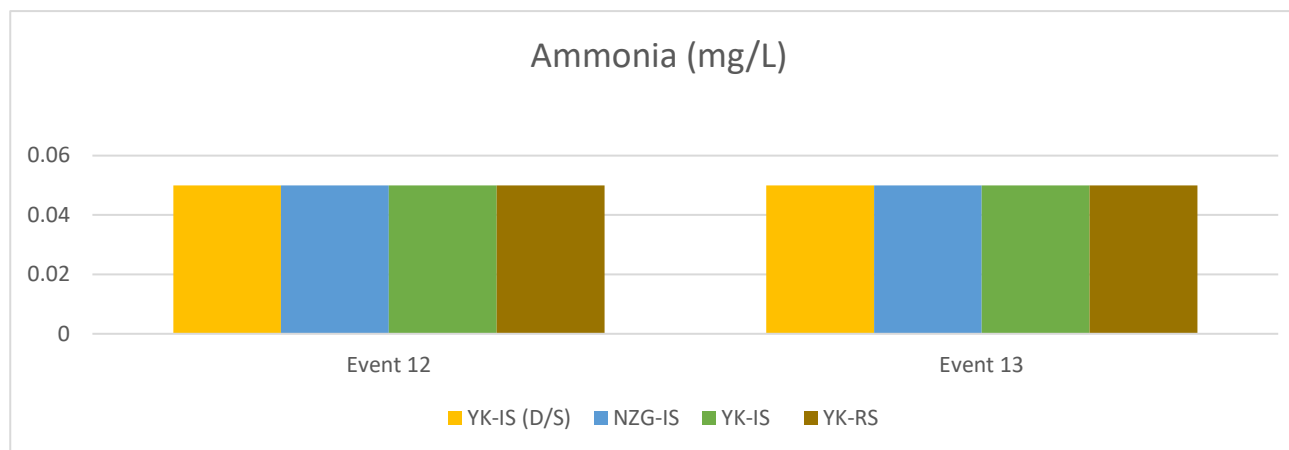


Figure 3-21 Ammonia (mg/L) for the Yorkers Creek catchment

Nitrogen Oxides (mg/L) have remained consistent within the Talbingo Reservoir, with the exception of TR-RS, which returned a reading of 0.1 mg/L during Event 13, refer to Figure 3-26. Similarly, Nitrogen Oxides (mg/L) within the Yorkers Creek catchment have remained relatively consistent, with the exception of YK-IS (D/S) and YK-RS, which returned readings of 0.1 mg/L during Event 13, refer to Figure 3-27.

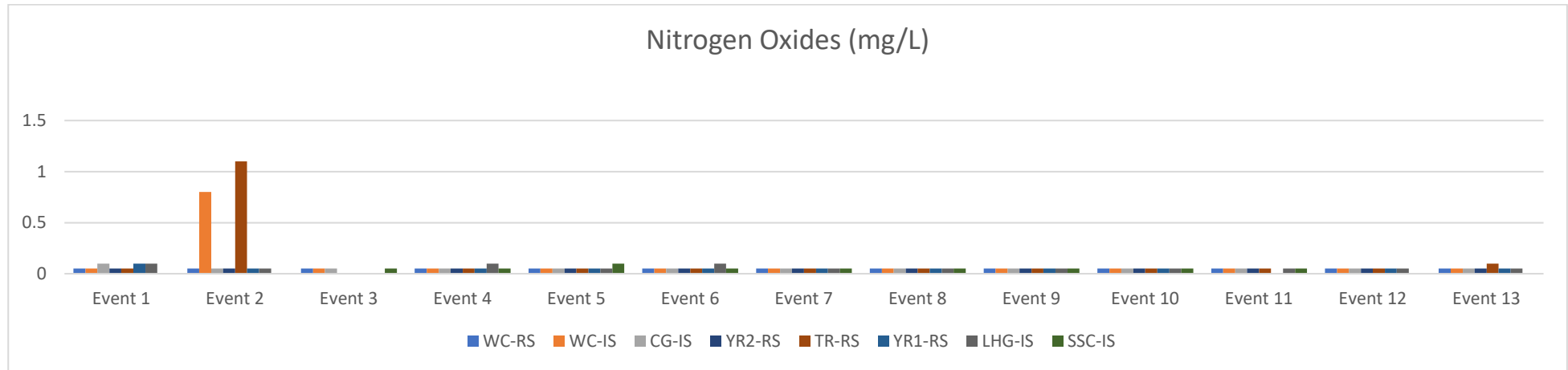


Figure 3-22 Nitrogen Oxides (mg/L) for the Talbingo Reservoir catchment

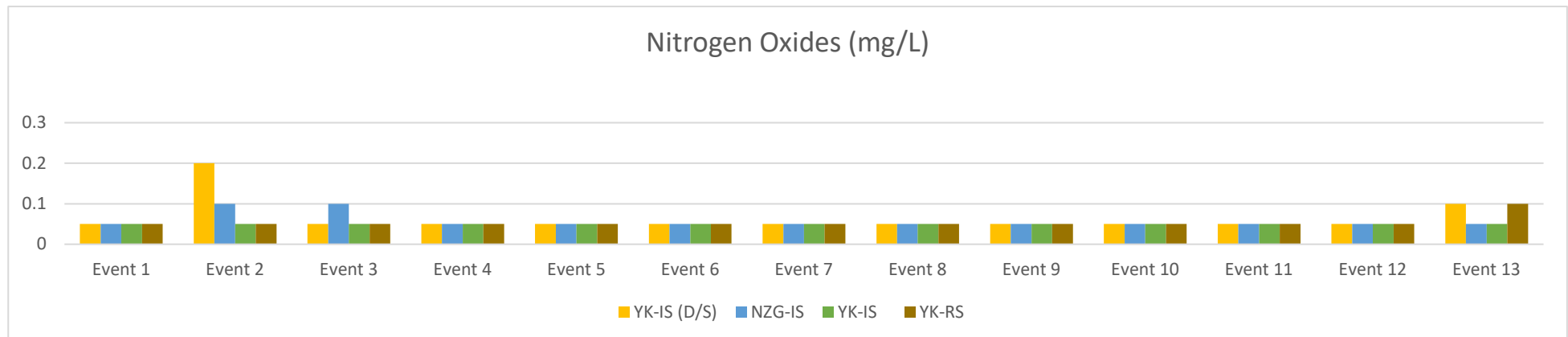


Figure 3-23 Nitrogen Oxides (mg/L) for the Yorkers Creek catchment

Reactive Phosphorous (mg/L) varied across the Talbingo Reservoir catchment, refer to Figure 3-28. Reactive Phosphorous was highest at WC-IS (0.05 mg/L) during Event 13. Reactive Phosphorous was below the limit of reporting within the Yorkers Creek catchment for Event 13, refer to Figure 3-29

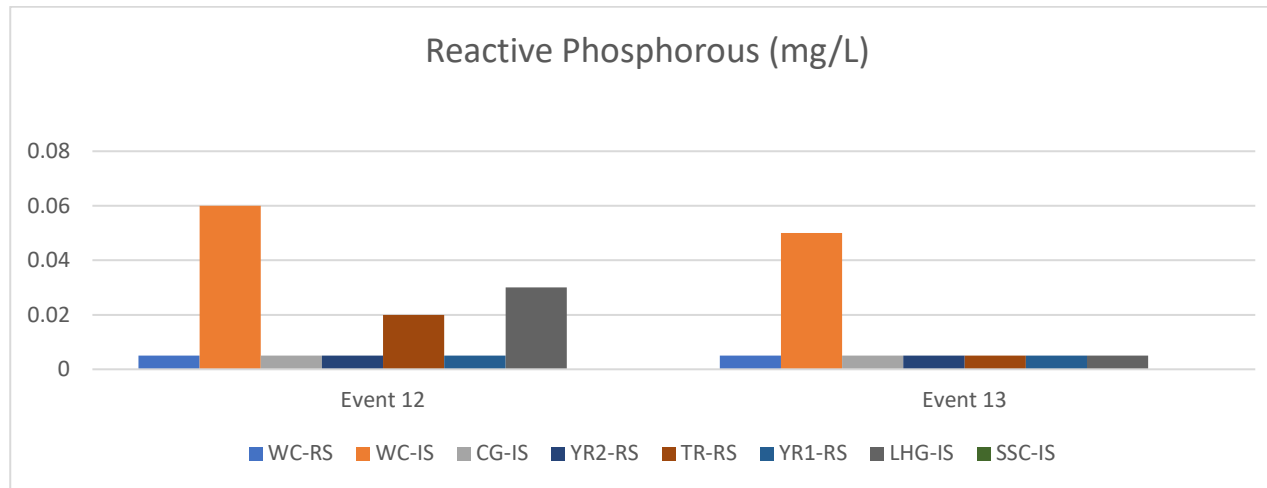


Figure 3-24 Reactive Phosphorous (mg/L) for the Talbingo Reservoir catchment

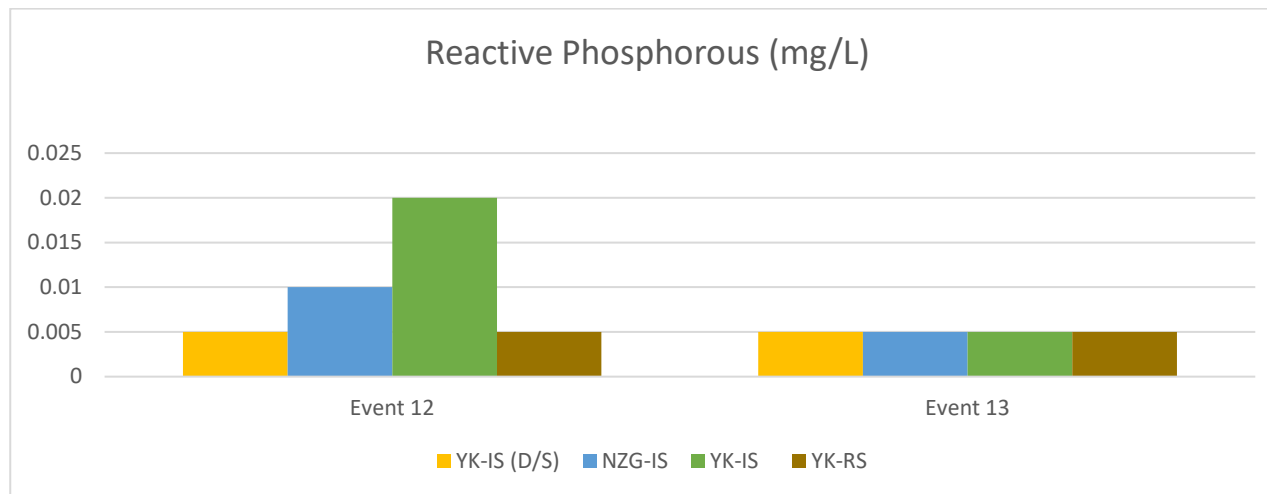


Figure 3-25 Reactive Phosphorous (mg/L) for the Yorkers Creek catchment

Total Hardness (CaCO_3 , mg/L) within the Talbingo Reservoir catchment for Event 13 varied from very soft at TR-RS (6 mg/L) to hard at LHG-IS (270 mg/L), refer to Figure 3-30. Total Hardness (CaCO_3 , mg/L) within the Yorkers Creek catchment was generally very soft, ranging from 1 – 10 mg/L, refer to Figure 3-31.

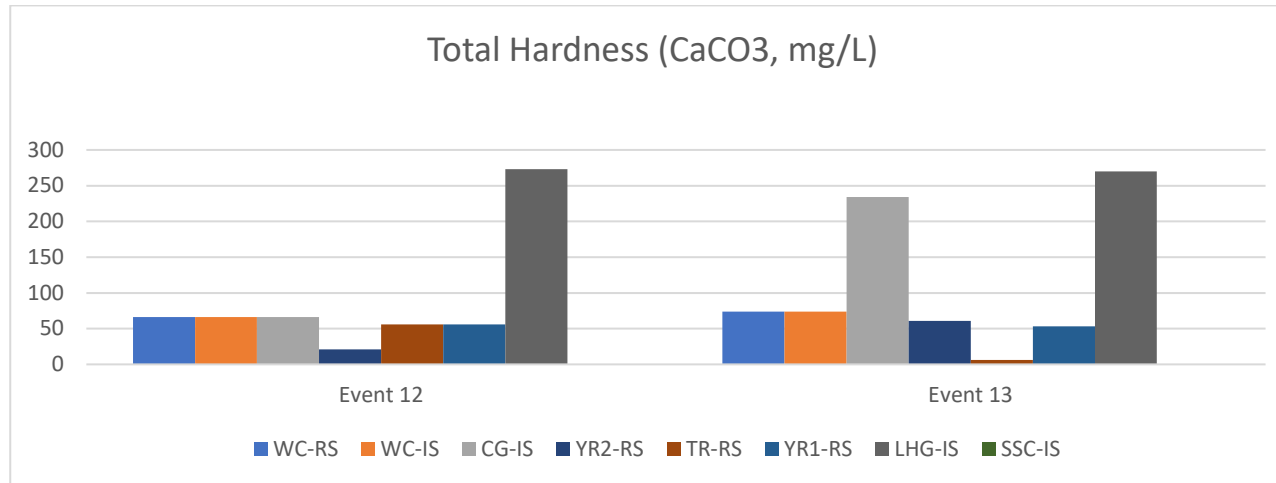


Figure 3-26 Total Hardness (CaCO_3) for the Talbingo Reservoir catchment

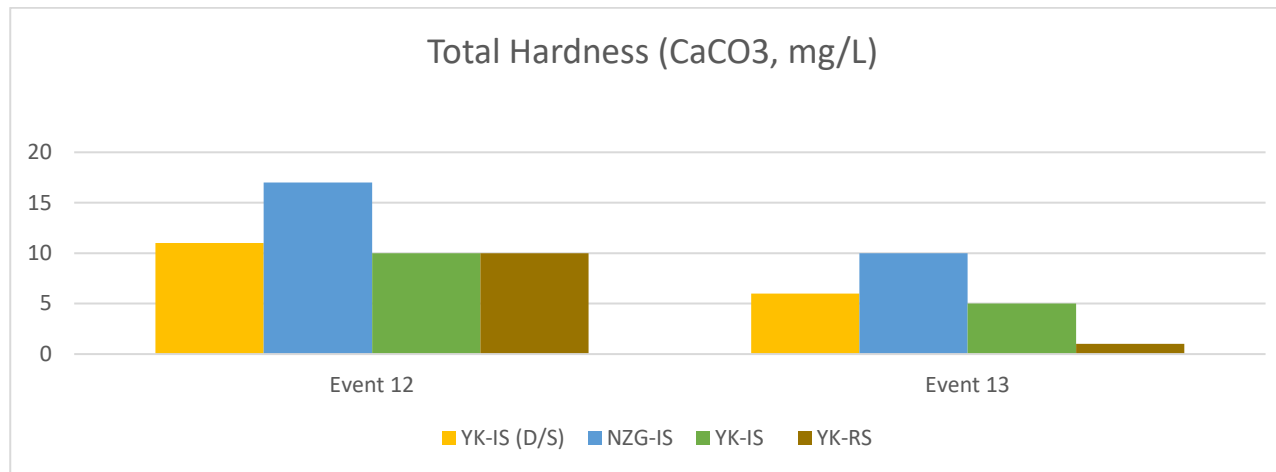


Figure 3-27 Total Hardness (CaCO_3) for the Yorkers Creek catchment

Total Kjeldahl Nitrogen (TKN, mg/L) has remained relatively consistent for the Talbingo Reservoir and Yorkers Creek catchments, with the exception of YR2-RS (7 mg/L), which registered a notable decrease when compared with the results from Event 12, refer to Figure 3-32 and Figure 3-33.

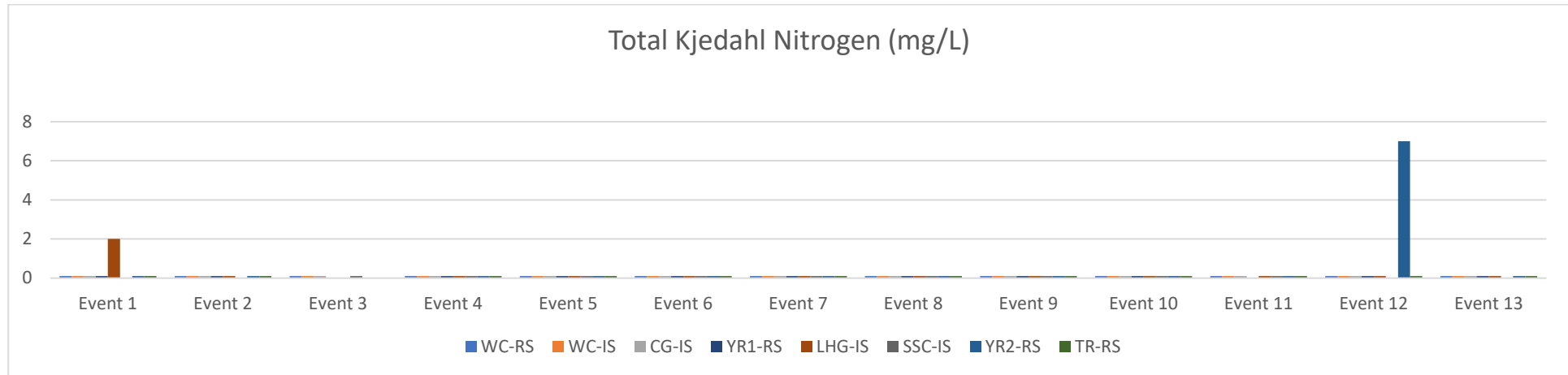


Figure 3-28 Total Kjeldahl Nitrogen (TKN) for the Talbingo Reservoir catchment

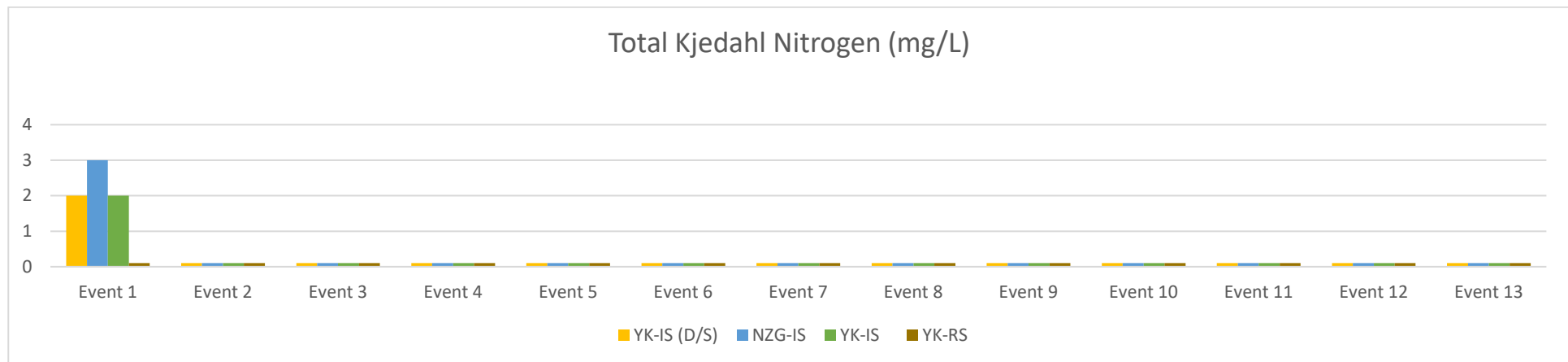


Figure 3-29 Total Kjeldahl Nitrogen (TKN) for the Yorkers Creek catchment

3.1.2. Quality Assurance / Quality Control

A Quality Assurance and Quality Control (QA/QC) program was undertaken as part of this investigation including:

- A field duplicate sample, at a rate of one per 20 samples, was taken (DUP01) from the WQM site WC-IS on 15 March 2023. DUP01 was analysed for metals and metalloids. The duplicate sample has been compared against the WC-IS sample by Relative Percentage Difference (RPD) and has returned within an acceptable range (less than 30% for inorganic or less than 5 times the laboratory limit of reporting (LOR)), with the exception of Aluminium, which returned an RPD of 33%. This has been assessed as an acceptable sample, due to consistently low detection levels (0.015 – 0.36 mg/L).
- A water blank was supplied by the laboratory. The water blank sample was analysed for metals and metalloids. There were no exceedances of the sample results above the LORs.

NGH consider the QA/QC program to have been effective and the data reliable and representative to achieve the objectives of the investigation.

Refer to Appendix C for the laboratory analysis certificate, Appendix D for the RPD Table and Appendix E for the calibration certificates.

4. Conclusion

Water temperatures for Event 13 have generally decreased across the sites compared to the water temperatures for Event 12. WQM results for Event 13 were generally consistent with Event 12.

Results for Event 13 indicate there has been a slight decrease in turbidity (NTU) and total suspended solids (TSS) within the Yorkers Creek catchment. There has been an increase in pH readings within both catchments, with the Talbingo Reservoir catchment registering readings above the upper DGV threshold (8.0 pH units).

There was a decrease in Oxygen Redox Potential (ORP) across both catchments, when compared to previous events. Results for Oxidation Redox Potential (ORP) for Event 13 were all positive, in comparison with Event 12, which registered the first negative value of -19.1 mv (LHG-IS). While the environment is no longer reducing, ORP values were notably lower than previous WQM events.

Results for Ammonia were relatively consistent across the catchments, with the exception of YR2-RS, which returned an elevated reading of 0.2 mg/L for Event 13.

Similarly, results for Nitrogen Oxides were relatively consistent across the catchments, with the exception of YK-IS (D/S) and YK-RS, which returned readings of 0.1 mg/L for Event 13.

Reactive phosphorous has decreased across the catchments for Event 13.

Total Hardness (CaCO_3) generally increased within the Talbingo Reservoir catchment for Event 13, varying from very soft at TR-RS (6 mg/L) to hard at LHG-IS (270 mg/L). Total Hardness (CaCO_3) decreased at the Yorkers Creek catchment ranging from 1 – 10 mg/L (very soft).

Results for Total Kjeldahl Nitrogen (TKN) consistently registered very low readings for Event 13.

Laboratory results for Event 13 were generally consistent with the results of the previous monitoring events, with the majority of analytes reported below the Limit of Reporting. Results exceeded the DGV for:

- Total suspended solids (0.2 mg/L) at CG-IS, LHG-IS, YK-IS (D/S), YK-RS and YK-IS
- Iron (0.3 mg/L) at YK-IS (D/S), YK-IS and YK-RS
- Aluminium (0.027 mg/L) at LHG-IS, YK-IS (D/S), NZG-IS, YK-RS and YK-IS
- Zinc (0.0024 mg/L) at CG-IS, WC-IS and LHG-IS
- Total Nitrogen (0.015 mg/L) at CG-IS, YK-IS (D/S), YK-RS and YK-IS
- Nitrogen Oxides (mg/L) at YK-IS (D/S) and YK-RS.
- Total dissolved solids were elevated at CG-IS and LHG-IS, which is a pattern that has carried through all events.

All results and statistics are provided in Appendix A.

5. References

- Jacobs Pty Ltd. 2020. *Snowy 2.0 Transmission Connection Project EIS*.
- NGH Pty Ltd. 2022. *Pre-construction Water Quality Monitoring Program and Methodology*.
- NGH Pty Ltd. 2022a. *Pre-construction Water Quality Monitoring Report: Event 1 April 2022*.
- NGH Pty Ltd. 2022b. *Pre-construction Water Quality Monitoring Report: Event 2 April 2022*.
- NGH Pty Ltd. 2022c. *Pre-construction Water Quality Monitoring Report: Event 3 May and June 2022*.
- NGH Pty Ltd. 2022d. *Pre-construction Water Quality Monitoring Report: Event 4 June 2022*.
- NGH Pty Ltd. 2022e. *Pre-construction Water Quality Monitoring Report: Event 5 July 2022*.
- NGH Pty Ltd. 2022f. *Pre-construction Water Quality Monitoring Report: Event 6 August 2022*.
- NGH Pty Ltd. 2022g. *Pre-construction Water Quality Monitoring Report: Event 7 October 2022*.
- NGH Pty Ltd. 2022h. *Pre-construction Water Quality Monitoring Report: Event 8 October 2022*.
- NGH Pty Ltd. 2022i. *Pre-construction Water Quality Monitoring Report: Event 9 November 2022*.
- NGH Pty Ltd. 2022j. *Pre-construction Water Quality Monitoring Report: Event 10 December 2022*.
- NGH Pty Ltd. 2023a. *Pre-construction Water Quality Monitoring Report: Event 11 January 2023*.
- NGH Pty Ltd. 2023b. *Pre- construction Water Quality Monitoring Report: Event 12 February 2023*.
- TransGrid. 2021a. *Snowy 2.0 Transmission Connection Project Submissions Report*.
- TransGrid. 2021b. *Snowy 2.0 Transmission Connection Project Amendment Report*.

APPENDIX A EVENT DATA TABLE

[illegible]

APPENDIX B OBSERVATIONS AND FIELD DATA

Sunny, slight breeze. 15 March 2023 - Lobb's Hole. 16 March 2023 - Bago State Forest

22-013 Pre-construction WQM		Grease/oil/sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
WC-RS	Month	No	19.4	—	9.11	—	145.8	8.44	57.	lab
	Comment	low flow, clear.								
WC-IS	Month	No	19.6	—	8.85	—	146.1	8.43	5	lab
	Comment	DUPOL. As above.								
CG-IS	Month	No	17.5	—	9.56	—	404.9	8.18	10	lab
	Comment	low flow, clear, algae on surface in some locations refer to photos.								
YR1-RS	Month	No	20.3	—	7.73	—	124.6	8.69	7	lab.
	Comment	low flow, clear, some surface suds.								

8.30 - 8.40
6.30 to 6.40

2+ meters
box +
handheld
from
WACC.

22-013 Pre-construction WQM		Grease/oil/sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
LHG-IS	Month	No	17.1	—	6.45	—	445.6	7.70	6.	lab
	Comment	Very low flow.								
YR2-RS	Month	No	20.9	—	8.24	—	127.4	8.56	16	lab
	Comment	Low flow, similar to Event 12. Clear.								
SSC-IS	Month	—	—	—	—	—	—	—	—	—
	Comment	DRY / / / / / /								
TR-RS	Month	No	14.6	—	8.57	—	26.0	7.70	14	lab
	Comment	Low mark, similar to Event 12. Clear.								
YK-IS (D/S)	Month	No.	12.9	—	8.80	—	25.8	7.97	17	lab.
	Comment	Very low flow ~ 10 cm depth. Fast heavy run over spill. Cloudy.								

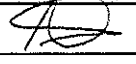
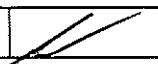
Sunny
breeze
dry
16/3/23

16/3/23. Tumba.

22-013 Pre-construction WQM		Grease/oil/sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
NZG-IS	Month	No	13.2	—	9.31	—	39.2	7.54	17.	lab
	Comment	low flow, depth < 10 cm. fast flowing								
YK-IS	Month	No	14.8	—	8.38	—	24.6	7.29	34	lab
	Comment	Cloudy, scum on surface of pooled areas. flowing.								
YK-RS	Month	No.	17.9	—	7.68	—	28.9	7.43	20	lab
	Comment	flowing, clear, scum on top of pooled water upstream.								

APPENDIX C LABORATORY CERTIFICATES

CLIENT: NGH Pty Ltd						ANALYTES REQUIRED <small>Complete & tick as required</small>																
CONTACT: Nicola Smith						Total Nitrogen	Total Phosphorus	Cyanide	Total Suspended Solids	Total Dissolved Solids	Dissolved Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)	Turbidity	Total Hardness	Ammonia	Reactive Phosphorus							
ADDRESS: 35 Kincaid Street Wagga Wagga NSW 2650 ABN: 31 124 444 622																						
TELEPHONE: 0410 411 660		E-mail: nicola.s@nghconsulting.com.au																				
SAMPLE IDENTIFICATION	NATURE OF SAMPLE	DATE SAMPLED	TIME SAMPLED	CONTAINER TYPE	NUMBER OF CONTAINERS																	
WC-RS	Water	15.3.23		1 Jar + 16 bottle	3	X	X	X	X	X	X	X	X	X	X	X						
WC-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
CG-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
YR1-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
LHG-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
YR2-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
SSC-IS	Water																					
TR-RS	Water	16.3.23		"	3	X	X	X	X	X	X	X	X	X	X	X						
YK-IS (d/s)	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
NZG-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
YK-IS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
YK-RS	Water	"		"	3	X	X	X	X	X	X	X	X	X	X	X						
DUP01	Water	15.3.23		16 Bottle	1						X											
WATER BLANK	Water	-		2 Jar + 16 bottle	3	X	X	X	X	X	X	X	X	X	X	X						

	NAME	SIGNATURE	ORGANISATION	DATE	TIME
RELINQUISHED BY:	Nicola Smith		NGH Pty Ltd	16.3.23	
Mode of Transport <small>Include Consignment Note # if applicable</small>	Delivery				
RECEIVED BY:	M. Glazer		EM	16/3/23	

NGH Environmental
Suite 1/39 Fitzmaurice Street
Wagga Wagga NSW 2650
Attention: Nicole Isles

Monday, April 24, 2023



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<u>Facility:</u>	<u>Order #</u>	<u>Date Analysis Commenced</u>
		17-March-2023
<u>Sample Type</u>	<u>Collected By</u>	<u>Date Received</u>
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0173	WC-RS 15.03.23	Aluminium (dissolved)	0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	25.4 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	74 mg/L	LTM-W-038	2
		Iron (dissolved)	0.02 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	2.68 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.03 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	129 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2

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		17-March-2023

Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting
23Mar-0173	WC-RS 15.03.23	Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0174	WC-IS 15.03.23	Aluminium (dissolved)	<0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	25.2 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	74 mg/L	LTM-W-038	2
		Iron (dissolved)	0.02 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	2.65 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1

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		17-March-2023

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Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0174	WC-IS 15.03.23	Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.01 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	94 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0175	CG-IS 15.03.23	Aluminium (dissolved)	0.11 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	84.6 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	234 mg/L	LTM-W-038	2
		Iron (dissolved)	<0.01 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	5.59 mg/L	APHA 3030 B/3120 B	2

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		17-March-2023

Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0175	CG-IS 15.03.23	Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	<0.01 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	271 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	0.005 mg/L	APHA 3030 B/3120 B	0.002

23Mar-0176	YR1-IS 15.03.23	Aluminium (dissolved)	<0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	21.1 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002

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Facility:	Order #	Date Analysis Commenced
		17-March-2023

Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting
23Mar-0176	YR1-IS 15.03.23	Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	53 mg/L	LTM-W-038	2
		Iron (dissolved)	0.01 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.01 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	73 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	0.002 mg/L	APHA 3030 B/3120 B	0.002

23Mar-0177	LHG-IS 15.03.23	Aluminium (dissolved)	0.13 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1

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		17-March-2023
<u>Sample Type</u>	<u>Collected By</u>	<u>Date Received</u>
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0177	LHG-IS 15.03.23	Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	99.2 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	270 mg/L	LTM-W-038	2
		Iron (dissolved)	0.08 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	5.43 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	0.080 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	3 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.02 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	293 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	3 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1

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Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting
23Mar-0177	LHG-IS 15.03.23	Zinc (dissolved)	0.005 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0178	YR2-IS 15.03.23	Aluminium (dissolved)	<0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	0.2 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	21.3 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	61 mg/L	LTM-W-038	2
		Iron (dissolved)	0.01 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.01 mg/L	LTM-W-030	0.01

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Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0178	YR2-IS 15.03.23	Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	72 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	0.002 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0179	TR-RS 16.03.23	Aluminium (dissolved)	<0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	2.27 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	6 mg/L	LTM-W-038	2
		Iron (dissolved)	0.05 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000

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Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting
23Mar-0179	TR-RS 16.03.23	Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.02 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	41 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002

23Mar-0180	YK-IS(d/s) 16.03.23	Aluminium (dissolved)	0.26 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	2.25 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	6 mg/L	LTM-W-038	2

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Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting
23Mar-0180	YK-IS(d/s) 16.03.23	Iron (dissolved)	0.31 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	9 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.02 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	<2 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	9 mg/L	APHA 2540 D	0.2
		Turbidity	12 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0181	NZG-IS 16.03.23	Aluminium (dissolved)	0.11 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000

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Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0181	NZG-IS 16.03.23	Calcium (dissolved)	4.17 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	10 mg/L	LTM-W-038	2
		Iron (dissolved)	0.14 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.02 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	<2 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	2 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002

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<u>Sample Type</u>	<u>Collected By</u>	<u>Date Received</u>
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0182	YK-IS 16.03.23	Aluminium (dissolved)	0.32 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	2.00 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	5 mg/L	LTM-W-038	2
		Iron (dissolved)	0.35 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	5 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.02 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	<2 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2

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Sample Type	Collected By	Date Received
Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0182	YK-IS 16.03.23	Total Suspended Solids	5 mg/L	APHA 2540 D	0.2
		Turbidity	6 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0183	YK-RS 16.03.23	Aluminium (dissolved)	0.36 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	<2 mg/L	LTM-W-038	2
		Iron (dissolved)	0.37 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	0.003 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	6 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	0.1 mg/L	LTM-W-014	0.1

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Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0183	YK-RS 16.03.23	Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.04 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	<2 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2
		Total Suspended Solids	6 mg/L	APHA 2540 D	0.2
		Turbidity	9 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
23Mar-0184	DUP01 15.03.23	Aluminium (dissolved)	0.03 mg/L	APHA 3030 B/3120 B	0.03
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Iron (dissolved)	0.02 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Zinc (dissolved)	0.002 mg/L	APHA 3030 B/3120 B	0.002

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Water	N. Smith	17-March-2023

<u>EAL ID</u>	<u>Client ID.</u> Date/Time sample taken	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
23Mar-0185	Water Blank				
		Aluminium (dissolved)	<0.03 mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	<0.1 mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	<0.0003 mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	<0.00002 mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	<0.00001 mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	<0.002 mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO ₃	<2 mg/L	LTM-W-038	2
		Iron (dissolved)	<0.01 mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	<2.00 mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	<0.00003 mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	<0.001 mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	<0.2 mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	<0.1 mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	<0.01 mg/L	LTM-W-030	0.01
		Phosphorus, Total	0.03 mg/L	LTM-W-030	0.01
		Silver (dissolved)	<0.00002 mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	<2 mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	<0.2 mg/L	LTM-W-034	0.2

NGH Environmental
Suite 1/39 Fitzmaurice Strret
Wagga Wagga NSW 2650
Attention: Nicole Isles

Monday, April 24, 2023

NATA Accredited Laboratory
Number: 9597Accredited for compliance with
ISO/IEC 17025 - Testing

LABORATORY ANALYSIS REPORT

Report Number: 2303-0072

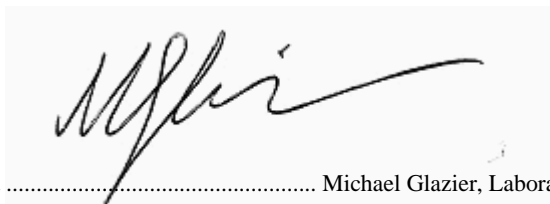
Page 16 of 16

For all enquiries related to this report please quote document number: 2303-0072

<u>Facility:</u>		<u>Order #</u>	<u>Date Analysis Commenced</u>		
			17-March-2023		
<u>Sample Type</u>		<u>Collected By</u>	<u>Date Received</u>		
Water		N. Smith	17-March-2023		
<u>EAL ID</u>	<u>Client ID.</u>	<u>Test</u>	<u>Result (units)</u>	<u>Method Reference</u>	<u>Limit of Reporting</u>
Date/Time sample taken					
23Mar-0185	Water Blank				
		Total Suspended Solids	<0.2 mg/L	APHA 2540 D	0.2
		Turbidity	<1 NTU	APHA 2130 B	1
		Zinc (dissolved)	<0.002 mg/L	APHA 3030 B/3120 B	0.002

Note:

* NATA Accreditation does not cover the performance of this service.



Signed Michael Glazier, Laboratory Manager.

All samples analysed as received.
All soil results are reported on a dry basis.
The EAL takes no responsibility for the end use of results within this report.
This report shall not be reproduced except in full.
This report replaces any previously issued report

APPENDIX D RPD TABLE

			Al (mg/L)	As (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Cyanide (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Hg (mg/L)	Ni (mg/L)	Ag (mg/L)	Zn (mg/L)
DUP01	Event 1	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		YR1-IS	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 2	DUP01	<0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		WC-IS	<0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range except Mn	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	0%	0%
	Event 3	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		YH-IS (D/S)	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 4	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 5	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 6	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 7	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 8	DUP01	1.79	0.00015	0.00001	0.000005	0.0001	0.001	0.73	0.0005	0.011	0.000015	0.0005	0.00001	0.002
		SSC-IS	1.73	0.00015	0.00001	0.000005	0.0001	0.001	0.69	0.0005	0.011	0.000015	0.0005	0.00001	0.002
		RPD% - Acceptable Range	3.4090909	0%	0%	0%	0%	0%	5.633802817	0%	0%	0%	0%	0%	0%
	Event 9	DUP01	0.35	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		WC-RS	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	2.82	0%	0%	0%	0%	0%	28.57	0%	0%	0%	0%	0%	0%
	Event 10	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.005	0.000015	0.0005	0.00001	0.008
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.00001	0.019
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	11.76	0%	0%	0%	0%	0%	0%
	Event 11	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 12	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.006	0.000015	0.0005	0.00001	0.002
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - Acceptable Range	0%	0%	0%	0%	0%	0%	60%	0%	85%	0%	0%	0%	33%
	Event 13	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.002
		WC-IS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.003
		RPD% - Acceptable Range	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
Water Blank	Event 1	Nothing above LOR	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 2	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 3	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 4	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 5	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 6	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 7	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 8	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 9	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 10	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 11	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 12	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 13	Nothing above LOR	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002

$$RPD \% = |(x_2 - x_1)| / ((x_2 + x_1) / 2)$$

How to calculate the Relative Percent Difference (RPD)

The basic equation for RPD is

$$RPD = \left(\frac{|R1 - R2|}{\frac{R1 + R2}{2}} \right) \times 100,$$

where

R1 is sample 1, and

R2 is sample 2.

R1 and R2 are your sample and duplicate values. Basically, this equation has you calculate the RPD by dividing the difference between the sample and duplicate by the average of the two. Using absolute value signs ensures the RPD doesn't end up as a negative percentage, which wouldn't make sense when looking for a percent difference.

The equation you plug into Excel looks like this:

$$=ABS((B3-C3)/AVERAGE(B3:C3)*100)$$

ABS stands for Absolute Value. Using the cell labels in the equation, as seen above (B3, C3), allows you to use the equation down for all your sample/duplicate pairs so you don't have to write a new equation each time. You can do this by clicking on the cell with the equation in it, then click and drag the bottom right corner of the cell down for the rest of your samples.

APPENDIX E CALIBRATION CERTIFICATES

90FLMV V7.1 U2037 @ 17/02/2022 11:25

Oxygen Zero= 3.3% @ 17/02/2022 11:15

Oxygen Span= 96.5% @ 17/02/2022 11:20

Conductivity Zero= 0.1uS @ 17/02/2022 11:13

Conductivity k= 10.7 @ 17/02/2022 11:21

TDS Zero= 0.0ppM @ 17/02/2022 11:13

TDS k= 10.0 @ 00/00/0000 00:00

pH Asy= -0.02pH @ 17/02/2022 11:21

pH Slope= 95.2% @ 17/02/2022 11:21

Temperature Offset= -2.2oC @ 17/02/2022 11:20

17/02/2022 11:16:03	1	-0*3%S	0*0uS	6*87pH	664mV	23.0oC
17/02/2022 11:16:08	2	-0*3%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:13	3	-0*4%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:18	4	-0*1%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:23	5	-0*5%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:28	6	-0*5%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:33	7	-0*5%S	0*0uS	6*87pH	665mV	23.0oC
17/02/2022 11:16:38	8	-0*5%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:16:43	9	-0*6%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:16:48	10	-0*6%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:16:53	11	-0*6%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:16:58	12	-0*7%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:17:03	13	-0*7%S	0*0uS	6*87pH	666mV	23.0oC
17/02/2022 11:17:08	14	-0*7%S	0*0uS	6*87pH	666mV	23.0oC

17/02/2022 11:21:30	22	100.1%S	2750.uS	4.00pH	669mV	23.7oC
17/02/2022 11:21:35	23	100.1%S	2750.uS	4.00pH	669mV	23.7oC
17/02/2022 11:21:40	24	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:21:45	25	100.1%S	2750.uS	4.00pH	669mV	23.7oC
17/02/2022 11:21:50	26	100.1%S	2760.uS	3.99pH	669mV	23.7oC
17/02/2022 11:21:55	27	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:00	28	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:05	29	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:10	30	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:15	31	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:20	32	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:25	33	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:30	34	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:35	35	100.1%S	2750.uS	3.99pH	669mV	23.7oC
17/02/2022 11:22:40	36	100.2%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:22:45	37	100.1%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:22:50	38	100.1%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:22:55	39	100.0%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:00	40	100.1%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:05	41	100.2%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:10	42	100.2%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:15	43	100.2%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:20	44	100.2%S	2750.uS	3.98pH	669mV	23.7oC
17/02/2022 11:23:25	45	100.2%S	2750.uS	3.98pH	669mV	23.7oC