Pre-construction Water Quality Monitoring Report

Event 17 2023

Project Number: 22-013

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Document verification

Project Title:	Event 17 2023
Project Number:	22-013
Project File Name:	22-013 Water Quality Monitoring Field and Laboratory Report Event 17 Final

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V1.0	12/10/2023	A. Gill	N. Smith	N. Smith
Final V1.0	12/10/2023	A. Gill	N. Smith	N. Smith

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W. www.nghconsulting.com.au

E. ngh@nghconsulting.com.au

BEGA - ACT & SOUTH EAST NSW
Suite 11, 89-91 Auckland Street
(PO Box 470) Bega NSW 2550
T. (02) 6492 8333

NEWCASTLE - HUNTER & NORTH COAST
Level 1, 31-33 Beaumont Street
Hamilton NSW 2303
T. (02) 4929 2301

BRISBANE
T3, Level 7, 348 Edward Street
Brisbane QLD 4000
T. (07) 3129 7633

SYDNEY REGION
Unit 17, 21 Mary Street
Surry Hills NSW 2010
T. (02) 8202 8333

CANBERRA - NSW SE & ACT
Unit 8, 27 Yallourn Street
(PO Box 62) Fyshwick ACT 2609
T. (02) 6280 5053

WAGGA WAGGA - RIVERINA & WESTERN NSW
35 Kincaid Street (PO Box 5464)
Wagga Wagga NSW 2650
T. (02) 6971 9696

GOLD COAST
2B 34 Tallebudgera Creek Road
Burleigh Heads QLD 4220
(PO Box 424 West Burleigh QLD 4219)
T. (07) 3129 7633

WODONGA
Unit 2, 83 Hume Street
(PO Box 506) Wodonga VIC 3690
T. (02) 6067 2533

NSW • ACT • QLD • VIC
W. www.nghconsulting.com.au
ABN 31 124 444 622 ACN 124 444 622

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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.

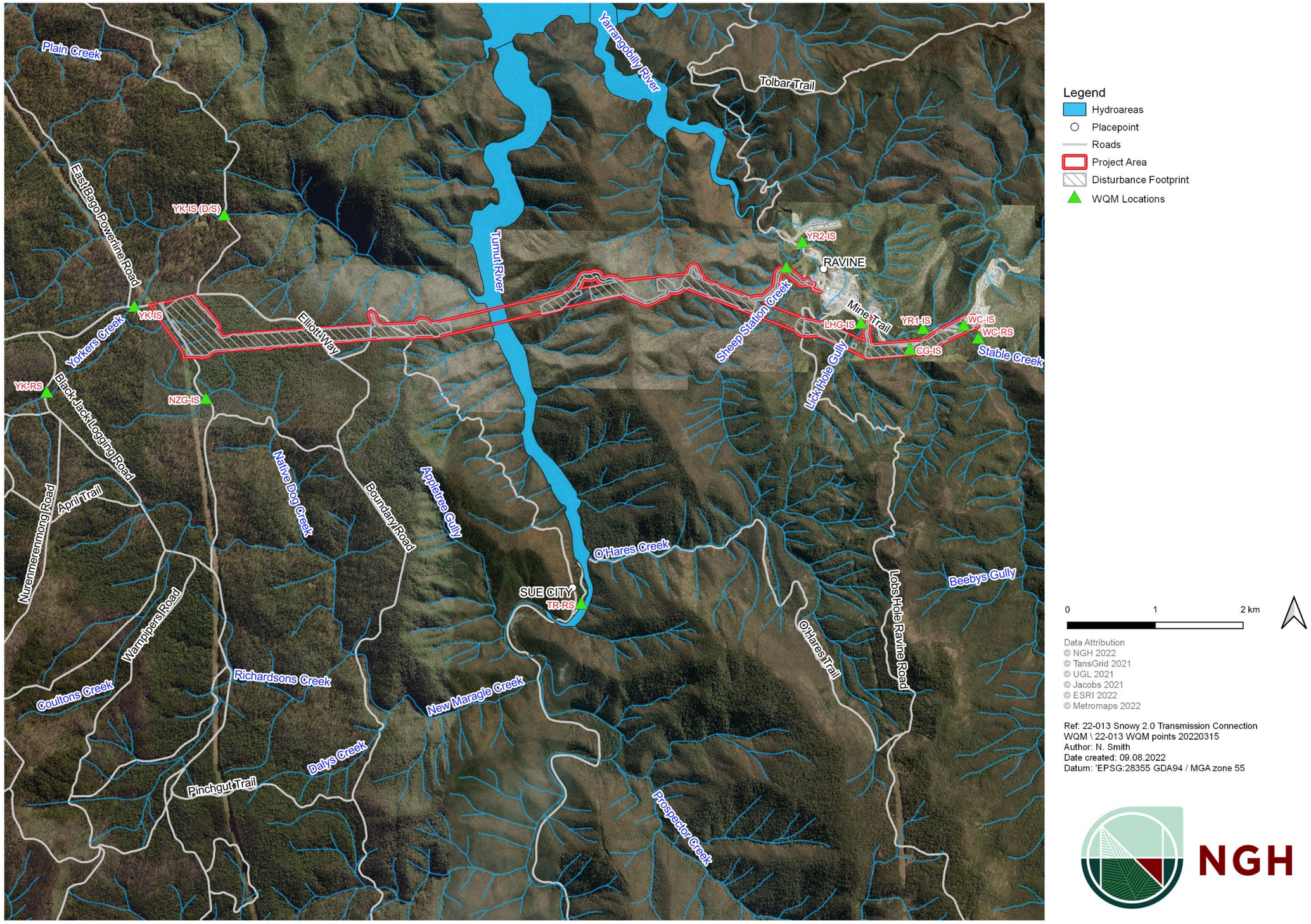

Figure 2-1 WQM locations

3. Monitoring event observations and results

Images for Wallaces Creek, Yarrangobilly River and New Zealand Gully are provided as Figure 3-1 to Figure 3-3. Water quality results for each site 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 17

NGH has conducted 17 monthly sampling events since March 2022 (Event 1). Reports for each event were prepared following receival of the laboratory results (NGH 2022a – 2023f). The results of Event 1 through to Event 16 have been compared in this report to the results of Event 17.

NGH Environmental Scientists, Nicola Smith and Martin Wyburn, conducted the Event 17 monitoring event with a UGL representative on 26 and 27 July 2023. The weather was sunny, with a slight breeze. Data from the Cabramurra SMHEA automatic weather station on 26 July 2023 (Station ID 072161) indicates that morning winds were from the northwest, with speeds of 9 km/hr. During the afternoon, winds were from the west, with speeds of 15 km/hr. Temperatures on the day included a low of 3.0°C and a high of 8.8°C. Data from the Tumbarumba weather station for 27 July 2023 (Station ID 072043) indicates that the weather was calm, with temperatures ranging from a low of -5.5°C to a high of 15.3°C.

Clear water flows were largely observed; however, turbid (cloudy) flows were noted at SSC-IS, 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 the Yorkers Creek reference site. Water was observed to be low and fast flowing; Talbingo Reservoir was observed to be at its lowest level since the sampling program commenced in March 2022.

Figure 3-1 Wallaces Creek (WC-IS)

Figure 3-2 Yarrangobilly River (YR2-RS)

Figure 3-3 New Zealand Gully (NZG-IS)

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
WC-RS	Aluminium mg/L	0.027	0.11	The results for Aluminium have decreased compared with results for Event 16. Results for Total Nitrogen are elevated, compared to prior sampling events, which is atypical of this location. Results for Total Phosphorous and Total Suspended Solids are consistent with prior sampling events.
	Total Nitrogen mg/L	0.25	1.0	
	Total Phosphorous mg/L	0.02	0.06	
	Total Suspended Solids mg/L	0.2	2	
CG-IS	Aluminium mg/L	0.027	0.03	The results for Aluminium have decreased compared with results for Event 16. Results for Total Nitrogen are elevated, compared to prior sampling events, which is atypical of this location. Results for Zinc are consistent with prior sampling events. Always returns a high total dissolved solid result.
	Total Nitrogen mg/L	0.25	1.3	
	Zinc mg/L	0.0024	0.004	
	Total Dissolved Solids (TDS) mg/L		232	
LHG-IS	Aluminium mg/L	0.027	0.09	The results for Aluminium have decreased compared with results for Event 16. Results for Total Phosphorus are elevated compared with prior sampling events. Results for Zinc and Total Suspended Solids are consistent with prior sampling events. Always returns a high total dissolved solid result.
	Total Phosphorous mg/L	0.02	0.03	
	Zinc mg/L	0.0024	0.005	
	Total Suspended Solids mg/L	0.2	5	
	Total Dissolved Solids (TDS) mg/L		272	
WC-IS	Aluminium mg/L	0.027	0.1	Results for Aluminium have decreased when compared with Event 16. Results for Total Nitrogen are elevated, when compared with prior sampling events.
	Total Nitrogen mg/L	0.25	1.1	

Site identification	Analyte	DGV	Result	Comment
YK-IS (D/S)	Aluminium mg/L	0.027	0.32	Results for Aluminium and Total Suspended Solids are consistent with prior sampling events. Results for Total Nitrogen are elevated, compared with prior sampling events, which is atypical of this location. Results for Nitrogen Oxides are above the Limit of Reporting (LOR), which is atypical of this location. Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken upstream of culvert.
	Total Nitrogen mg/L	0.25	1.1	
	Nitrogen oxides	0.015	0.1	
	Total Suspended Solids mg/L	0.2	5	
NZG-IS	Aluminium mg/L	0.027	0.15	Results for Aluminium have decreased, when compared with Event 16. Results for Total Nitrogen are elevated, compared with prior sampling events, which is atypical of this location. Results for Nitrogen Oxides are above the LOR, which is atypical of this location. Located within Bago State Forest. Sample taken upstream of timber supported unsealed track bridge. Banks heavily vegetated, shallow channel.
	Total Nitrogen mg/L	0.25	1.2	
	Nitrogen oxides	0.015	0.2	
YK-RS	Aluminium mg/L	0.027	0.28	Results for Aluminium have slightly decreased when compared with Event 16. 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.
YK-IS	Aluminium mg/L	0.027	0.25	Results for Aluminium have slightly decreased when compared with Event 16. Results for Nitrogen Oxides are above the LOR, which is atypical of this location.
	Nitrogen oxides	0.015	0.2	
YR1-RS	Aluminium mg/L	0.027	0.1	Results for Aluminium have decreased, when compared with Event 16. Results for Total Nitrogen are elevated, compared with prior sampling events, which is atypical of this location. Results for Nitrogen Oxides and Total
	Total Nitrogen mg/L	0.25	1.3	
	Total Phosphorous mg/L	0.02	0.18	

Site identification	Analyte	DGV	Result	Comment
	Nitrogen oxides	0.015	0.3	Phosphorous are above the LOR, which is atypical of this location.
YR2-RS	Aluminium mg/L	0.027	0.1	Result for Aluminium and Reactive Phosphorous have decreased since Event 16. Results for Reactive Phosphorous and Nitrogen Oxides are above the LOR, which is atypical of this location.
	Total phosphorous mg/L	0.02	0.017	
	Nitrogen oxides	0.015	0.1	
SSC-IS	Aluminium mg/L	0.027	0.74	Result for Aluminium and Iron have decreased since Event 16.
	Iron mg/L	0.3	0.3	
TR-RS	Aluminium mg/L	0.027	0.03	Result for Aluminium have decreased since Event 16. Results for Total Nitrogen, Total Phosphorus and Nitrogen Oxides are above the LOR, compared with prior sampling events, which is atypical of this location.
	Total Nitrogen mg/L	0.25	0.4	
	Total Phosphorous mg/L	0.02	0.05	
	Nitrogen oxides	0.015	0.4	

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

Water temperatures ranged from 3.0 degrees Celsius at YK-IS (D/S) to 9.0 degrees Celsius at LHG-IS.

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 figures, Figure 3-4 to Figure 3-23, display physico-chemical water quality through time for monitoring events 1 (March 2022) to 17 (July 2023). Where a DGV is available, these values are shown on the graph and have been included for dissolved oxygen (%), conductivity, pH and turbidity.

Although the Talbingo Reservoir is the ultimate catchment for both the Yarrangobilly River and tributaries, and Yorkers Creek and tributaries, the data has been divided into the Talbingo Reservoir catchment, which include the Talbingo Reservoir reference site sampling location and the Yarrangobilly River and its tributaries. These are all located in the Kosciuszko National Park. The Yorkers Creek catchment includes the three sampling locations along Yorkers Creek and New Zealand Gully, which are all located in the Bago State Forest. The confluence of Yorkers Creek with Tumut River (Talbingo Reservoir) is downstream of sampling location TR-RS but upstream of the confluence of the Yarrangobilly River and Tumut River.

Temperatures within the Talbingo Reservoir catchment have generally decreased since Event 12. YR2-RS recorded a notable increase in temperature, from 1.8°C during Event 16 to 6.1°C during Event 17, refer to Figure 3-4. Temperatures within the Yorkers Creek catchment have also decreased, refer to Figure 3-5.

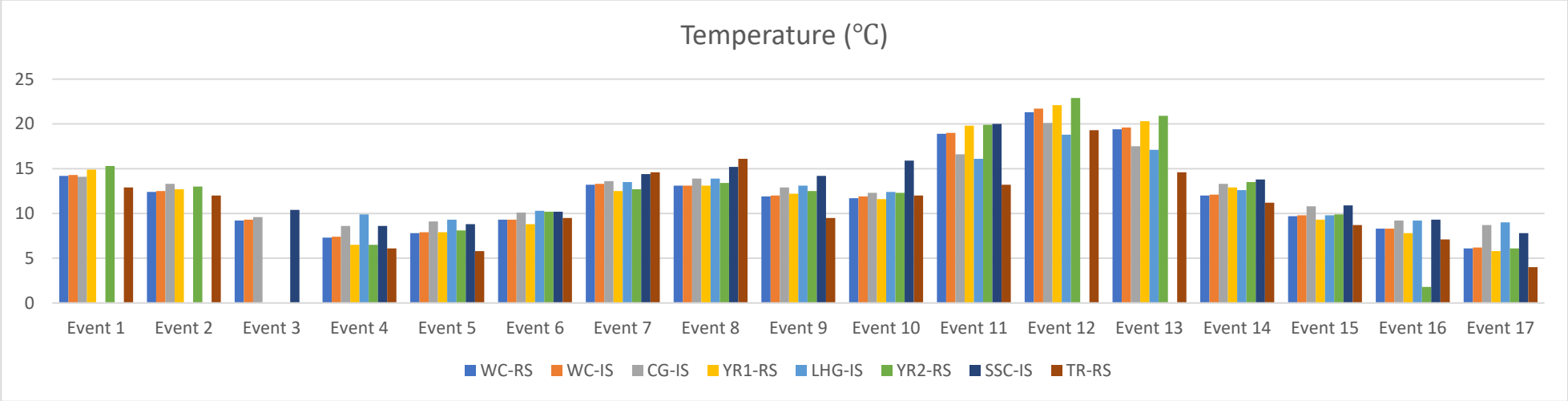

Figure 3-4 Temperature for Talbingo Reservoir catchment

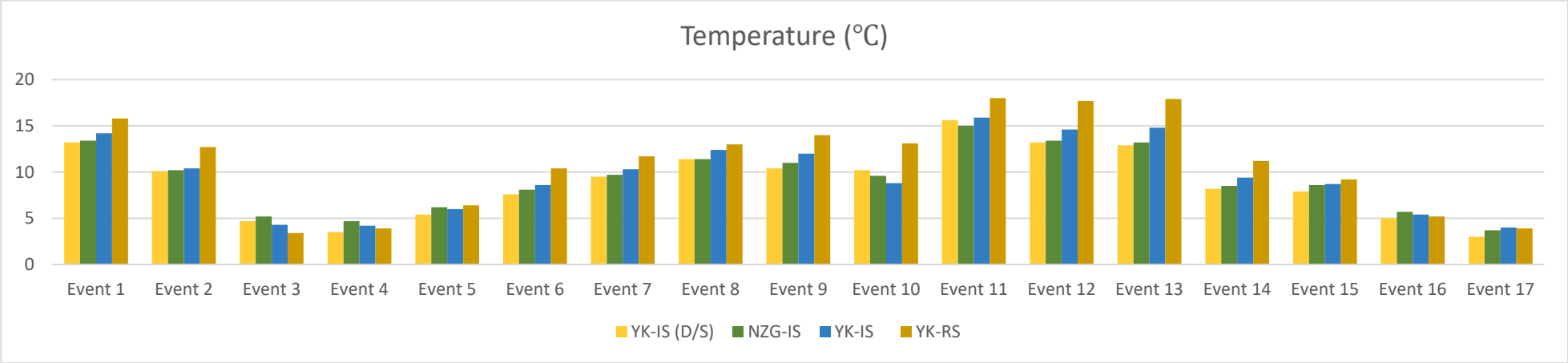

Figure 3-5 Temperature for Yorkers Creek catchment

DO (%) results for the Talbingo Reservoir catchment were within the acceptable DGV range (90-110%) for Event 17 with the exception of WC-RS (89.7%), LHG-IS (89.3%) and SSC-IS (88.9%), refer to Figure 3-6. DO (%) results for the Yorkers Creek catchment were all below the lower DGV value (90%), refer to Figure 3-7.

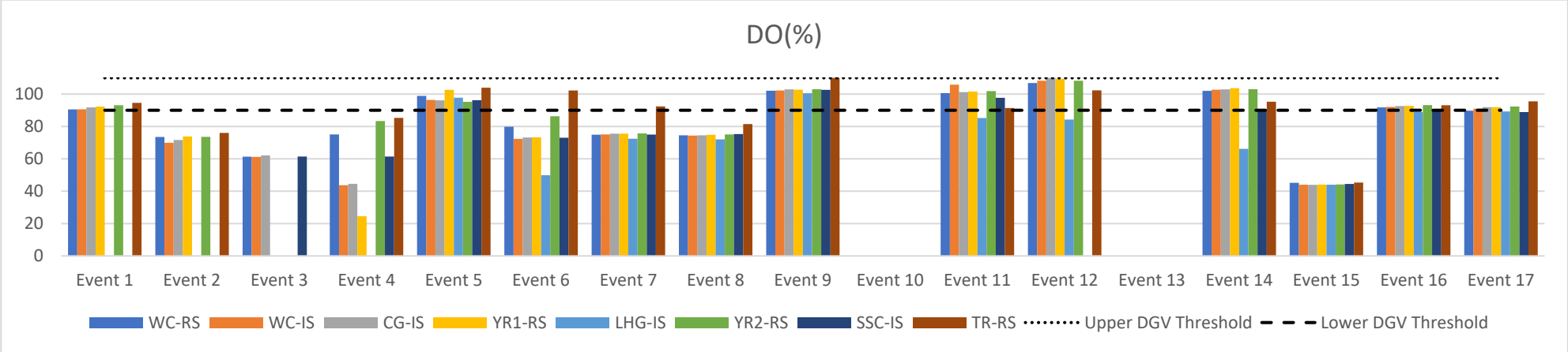

Figure 3-6 Dissolved oxygen (DO%) for Talbingo Reservoir catchment

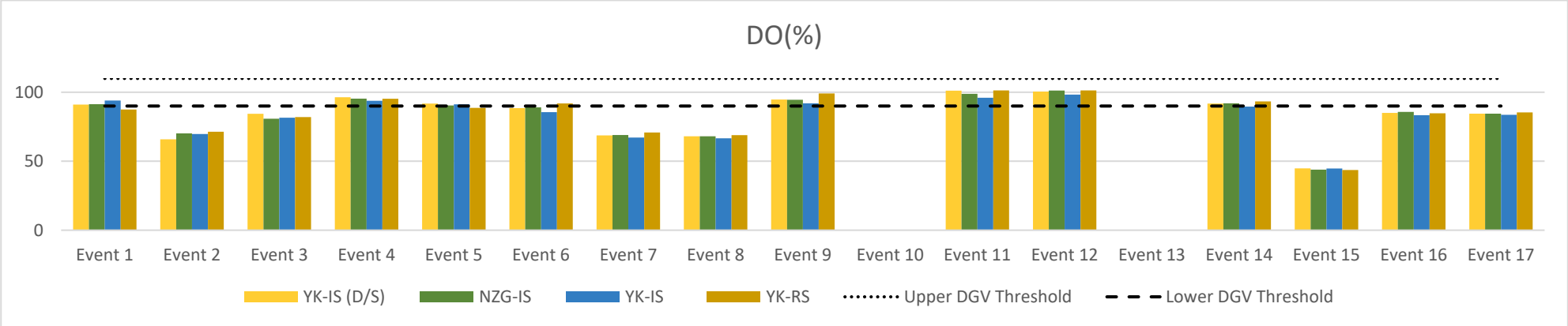

Figure 3-7 Dissolved oxygen (DO%) for Yorkers Creek catchment

The results for DO (ppm) for the Talbingo Reservoir catchment have remained consistent with Event 16, refer to Figure 3-8. The highest reading for DO (ppm) during Event 17 was recorded at TR-RS (12.5 ppm). Results for DO (ppm) within the Yorkers Creek catchment are also consistent with Event 16; the highest reading for DO (ppm) was at YK-IS (D/S) (11.36 ppm), refer to Figure 3-9.

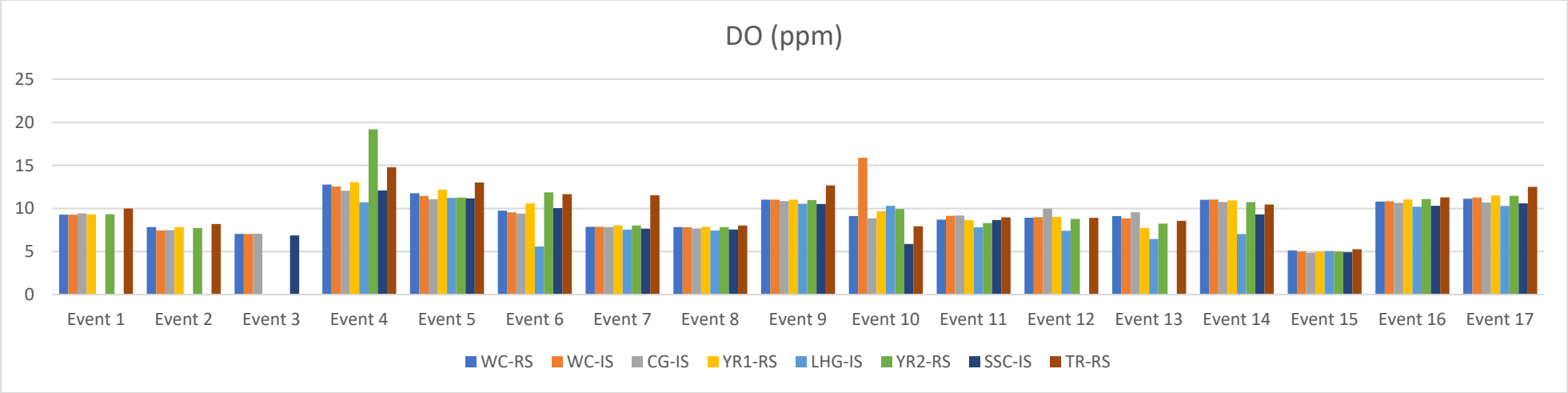

Figure 3-8 Dissolved Oxygen (ppm) for Talbingo Reservoir catchment

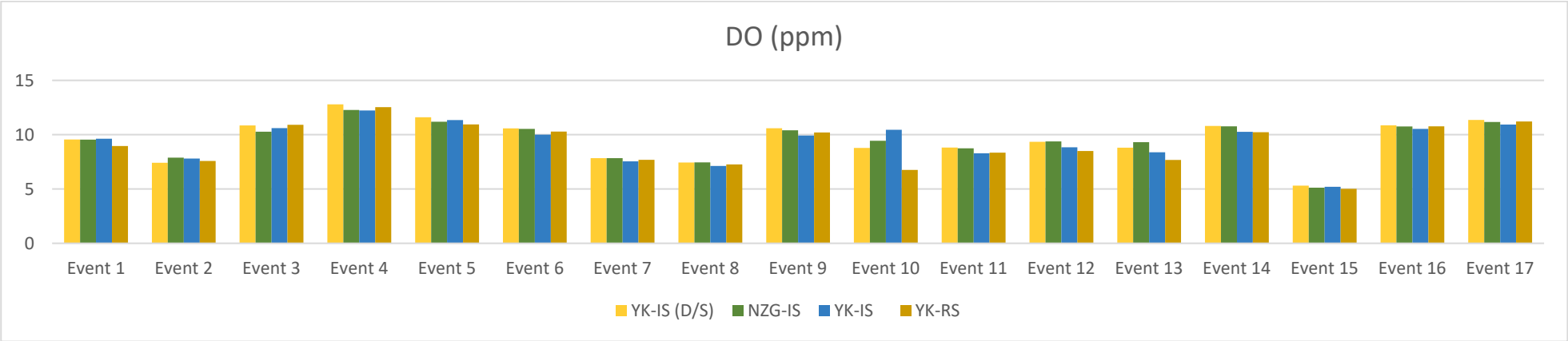

Figure 3-9 Dissolved Oxygen (ppm) for Yorkers Creek catchment

Results for specific conductance within the Talbingo Reservoir catchment have slightly increased since Event 16, refer to Figure 3-10. LHG-IS returned an elevated result of 511 µS/cm for Event 17, compared to 376.6 µS/cm for Event 16. Results for CG-IS remain consistent with Event 16. Results for specific conductance within the Yorkers Creek catchment for Event 17 have generally increased, refer to Figure 3-11.

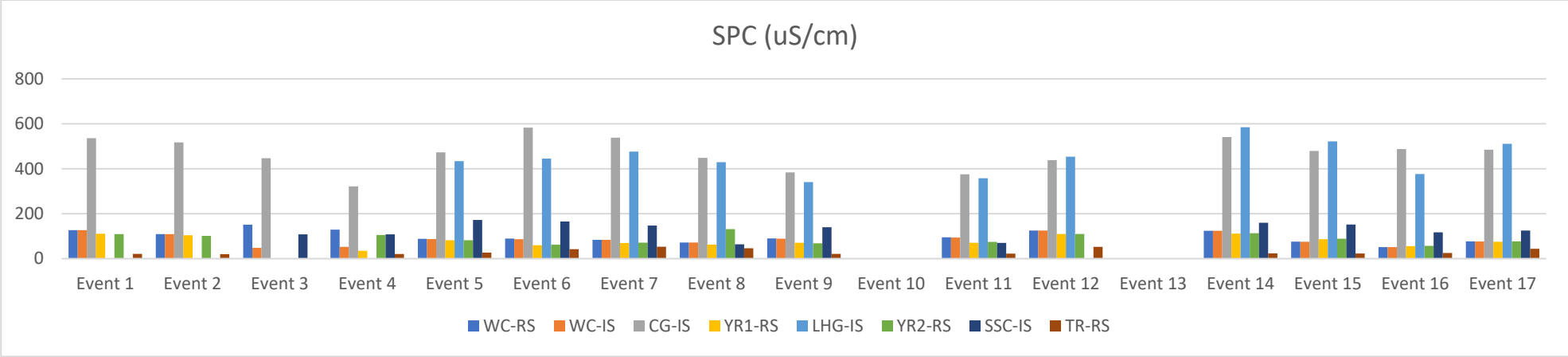

Figure 3-10 Specific Conductance (SPC µS/cm) for Talbingo Reservoir catchment

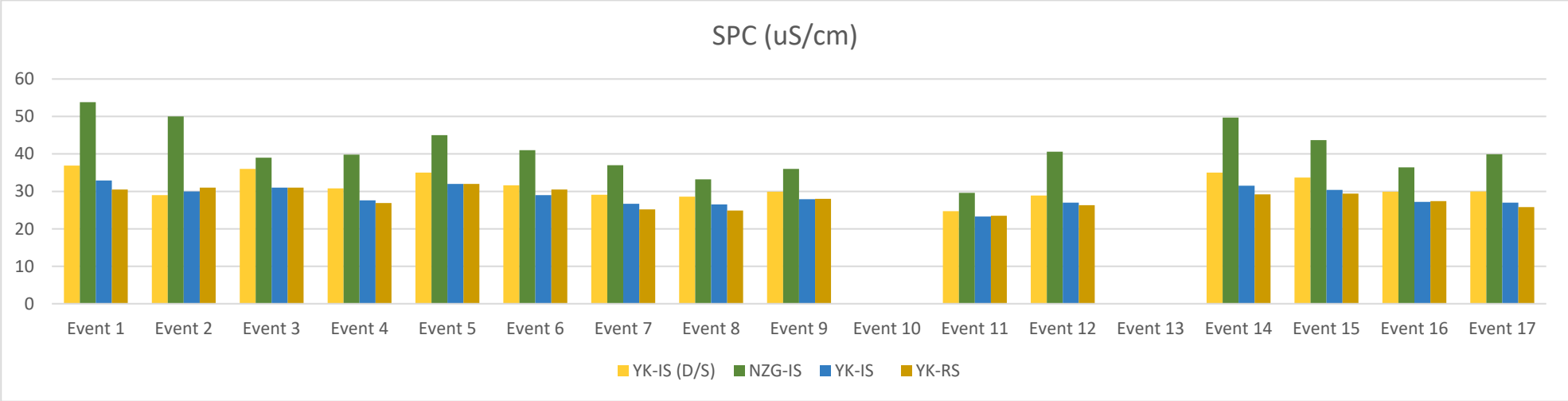

Figure 3-11 Specific Conductance (SPC µS/cm) for Yorkers Creek catchment

Conductivity readings within the Talbingo Reservoir catchment have slightly increased since Event 16, refer to Figure 3-12. Conductivity (µS/cm) results for CG-IS and LHG-IS continue to be notably higher than the other sites. Conductivity readings within the Yorkers Creek catchment have remained relatively consistent, refer to Figure 3-13. The pattern between sites is mostly reflective of the pattern for specific conductance.

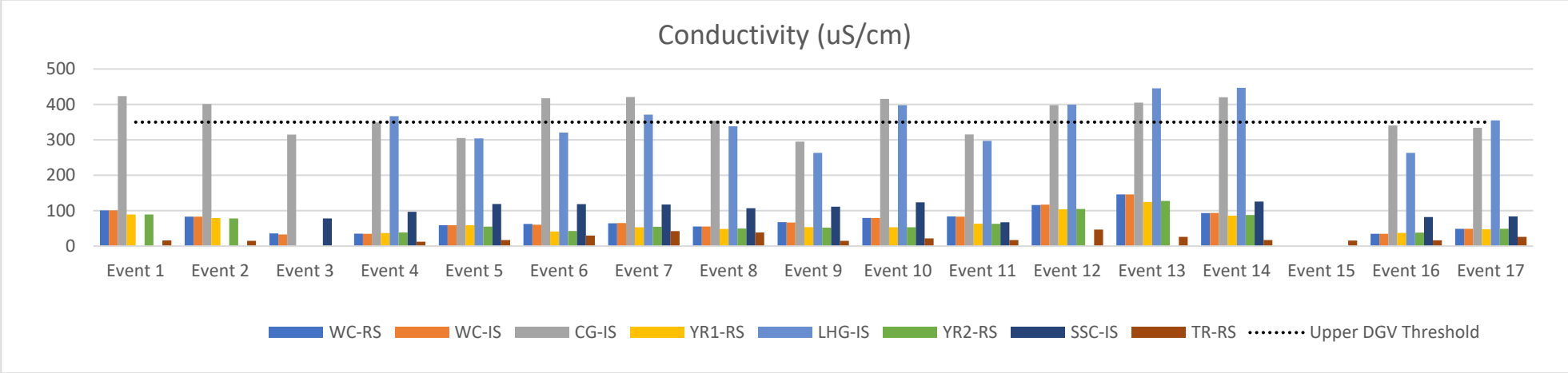

Figure 3-12 Conductivity (µS/cm) for Talbingo Reservoir catchment

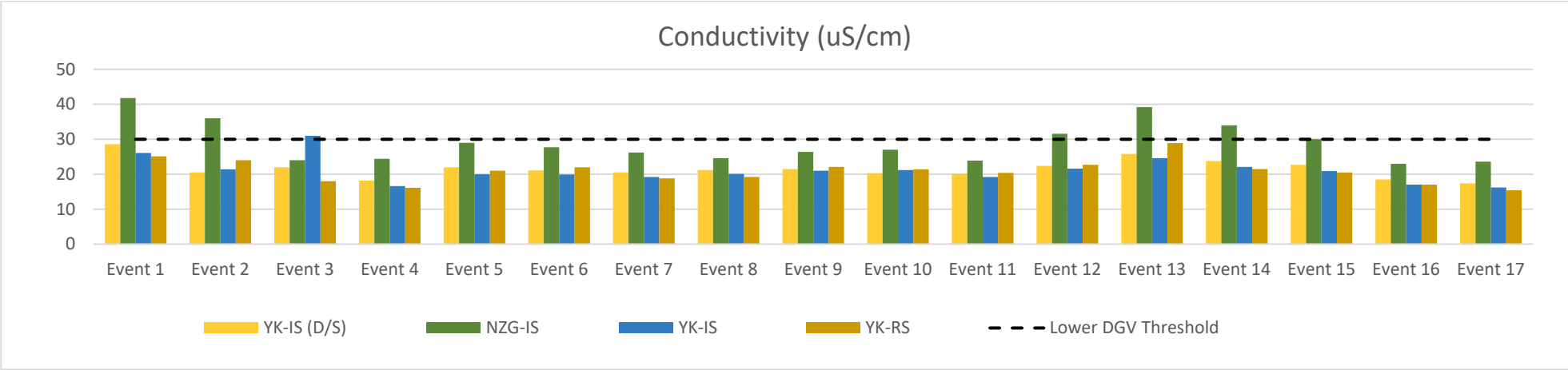

Figure 3-13 Conductivity (µS/cm) for Yorkers Creek catchment

Turbidity values were within the lower and upper DGV thresholds (2 - 25 NTU) for both catchments with the exception of CG-IS (0.002 NTU) for Event 17. Turbidity readings within the Talbingo Reservoir catchment have generally increased since Event 16, refer to Figure 3-14. SSC-IS recorded the highest reading (9.14 NTU). Note that the results for CG-IS have been provided in Figure 3-15 to more accurately display the other sampling locations in the Talbingo reservoir catchment.

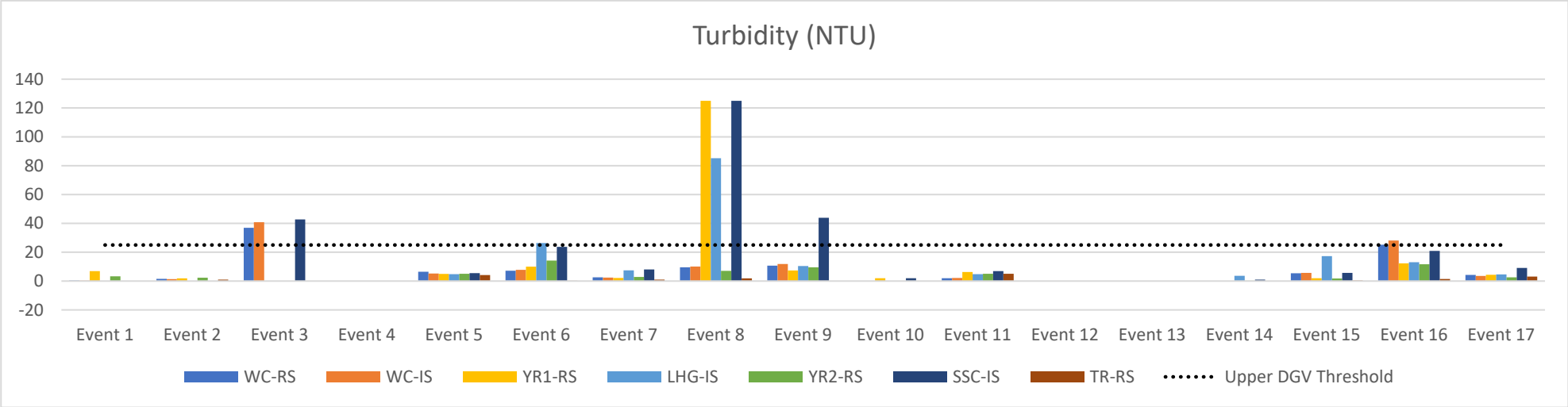

Figure 3-14 Turbidity (NTU) for the Talbingo Reservoir catchment

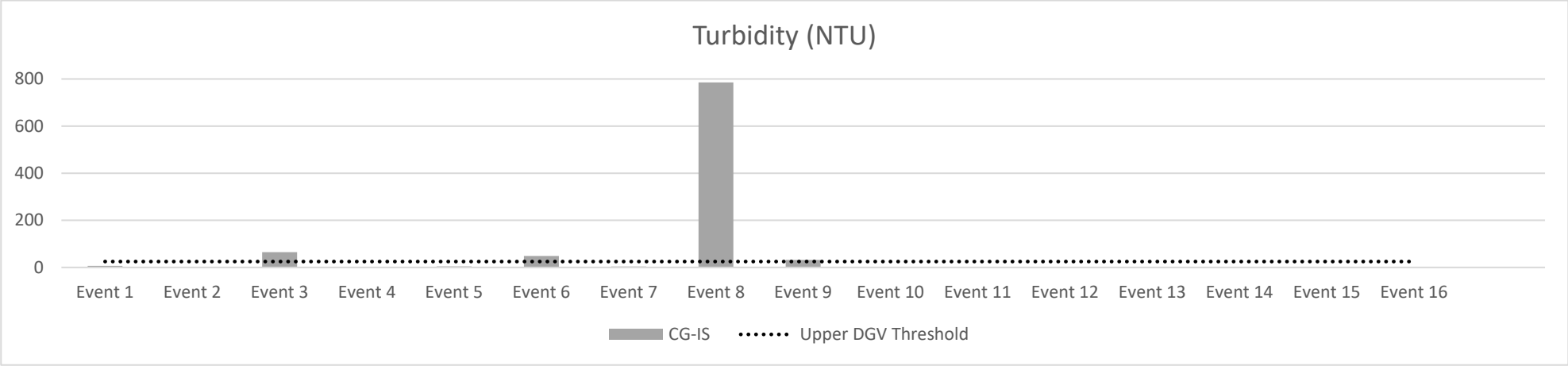

Figure 3-15 Turbidity (NTU) for CG-IS, within the Talbingo Reservoir catchment

Turbidity readings within the Yorkers Creek catchment have generally decreased since Event 15, refer to Figure 3-16. YK-IS (D/S) registered the highest reading of 8.93 NTU.

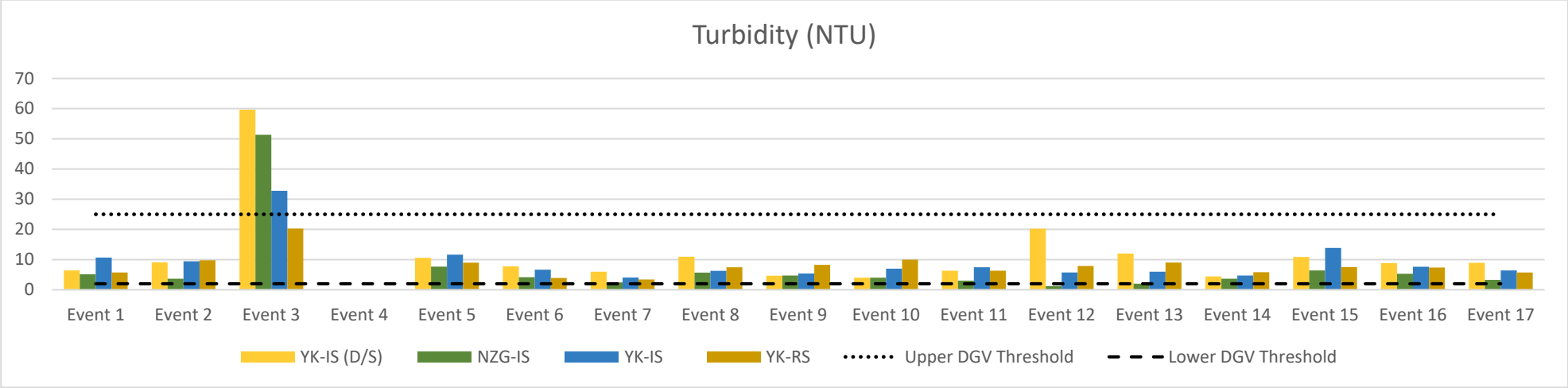

Figure 3-16 Turbidity (NTU) for the Yorkers Creek catchment

Results for total suspended solids (TSS) within the Talbingo Reservoir catchment for Event 17 have notably decreased since Event 16 and are consistent with results recorded during Event 13, 14 and 15, refer to Figure 3-17. Total suspended solids have remained consistent at CG-IS for Event 16, refer to Figure 3-18.

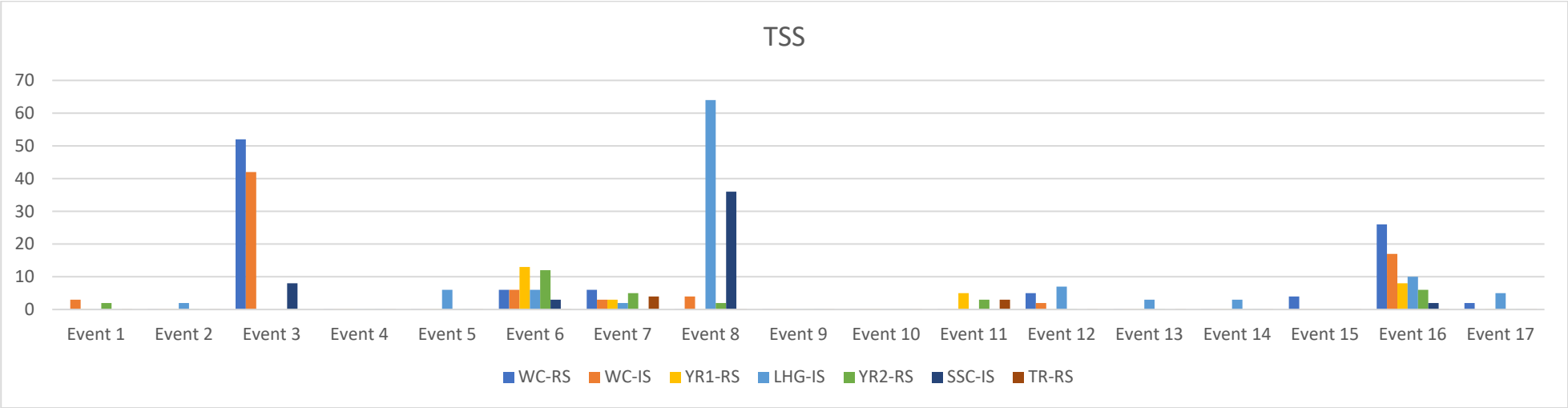

Figure 3-17 Total Suspended Solids for the Talbingo Reservoir catchment

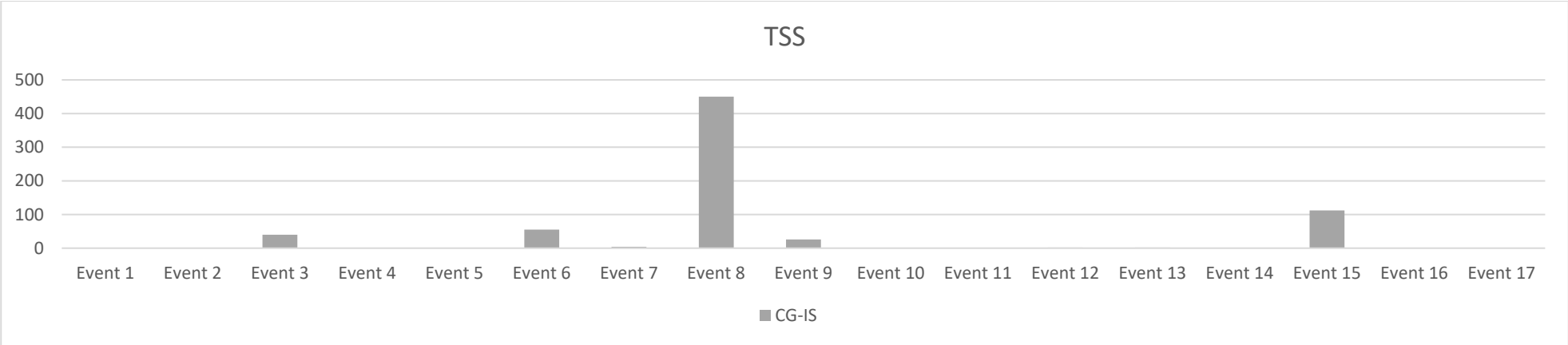

Figure 3-18 Total Suspended Solids for CG-IS, within the Talbingo Reservoir catchment

Total suspended solids have remained consistent at YK-IS (D/S) and decreased at YK-IS, NZG-IS and YK-RS, when compared with the results of Event 16, refer to Figure 3-19.

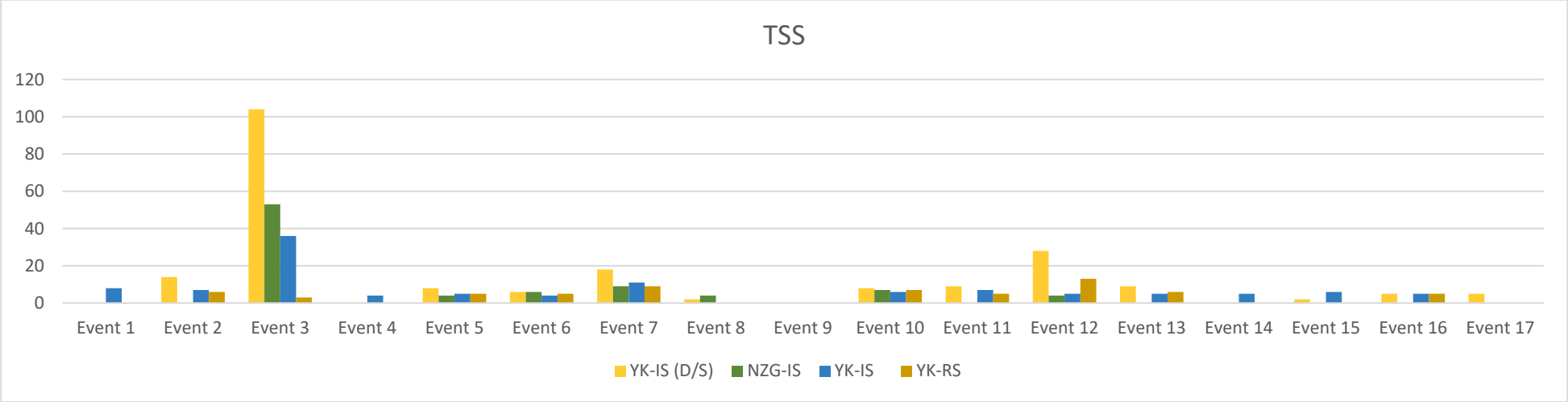

Figure 3-19 Total Suspended Solids for the Yorkers Creek catchment

Values of pH for the Talbingo Reservoir catchment have increased during Event 17. All sites had values of pH within the DGV range (6.5 – 8 pH units), refer to Figure 3-20. Values of pH for the Yorkers Creek catchment have also increased since Event 16, refer to Figure 3-21. All sites had values of pH within the DGV range (6.5 – 8 pH units).

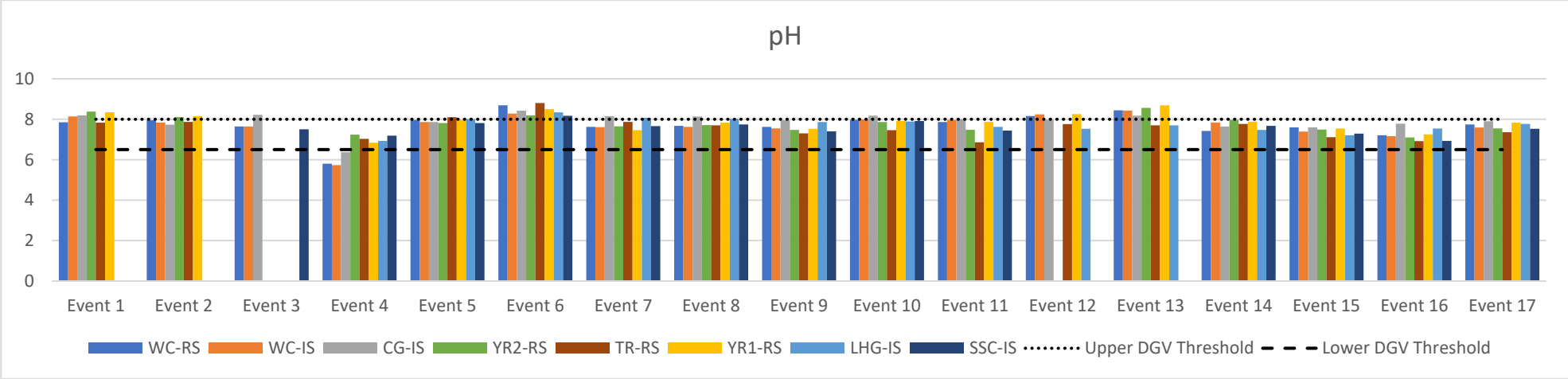

Figure 3-20 Potential of Hydrogen (pH) for Talbingo Reservoir catchment

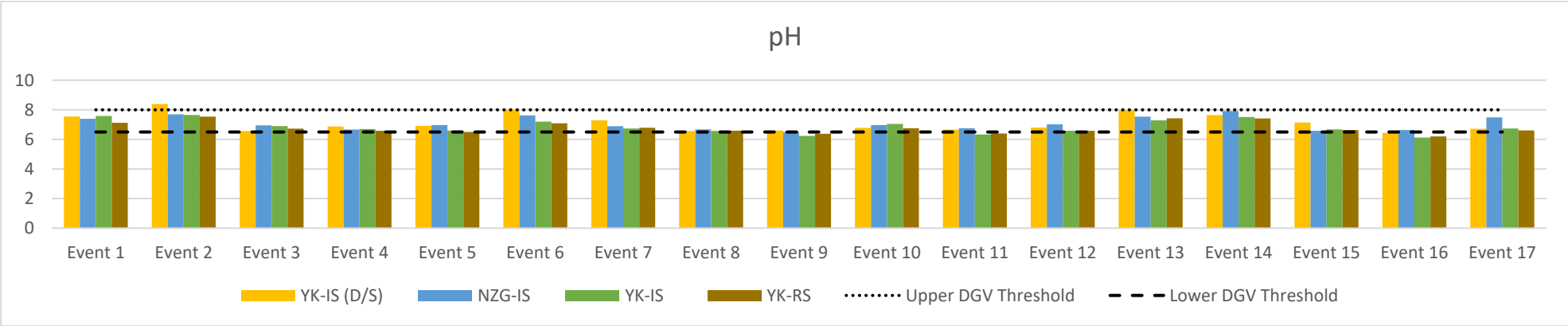

Figure 3-21 Potential of Hydrogen (pH) for Yorkers Creek catchment

The values for oxygen redox potential (ORP) within the Talbingo Reservoir catchment have decreased since Event 16, refer to Figure 3-22. Within the Yorkers Creek catchment, ORP has slightly increased at YK-IS (D/S) and decreased at NZG-IS, YK-IS and YK-RS, refer to Figure 3-23. NZG-IS recorded the notable decrease in ORP, from 105.6 mv during Event 16 to 35.5 mv during Event 17.

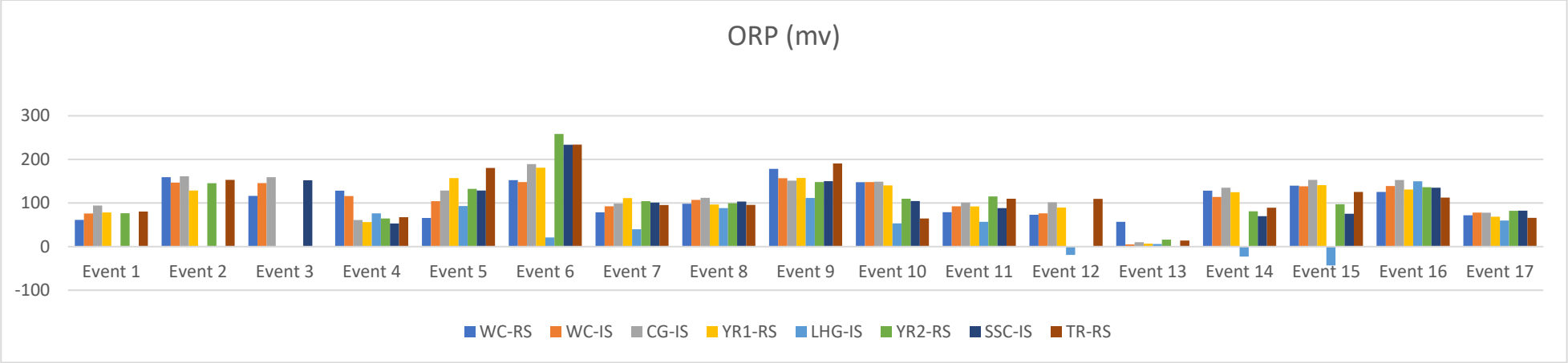

Figure 3-22 Oxygen Redox Potential (ORP) for Talbingo Reservoir catchment

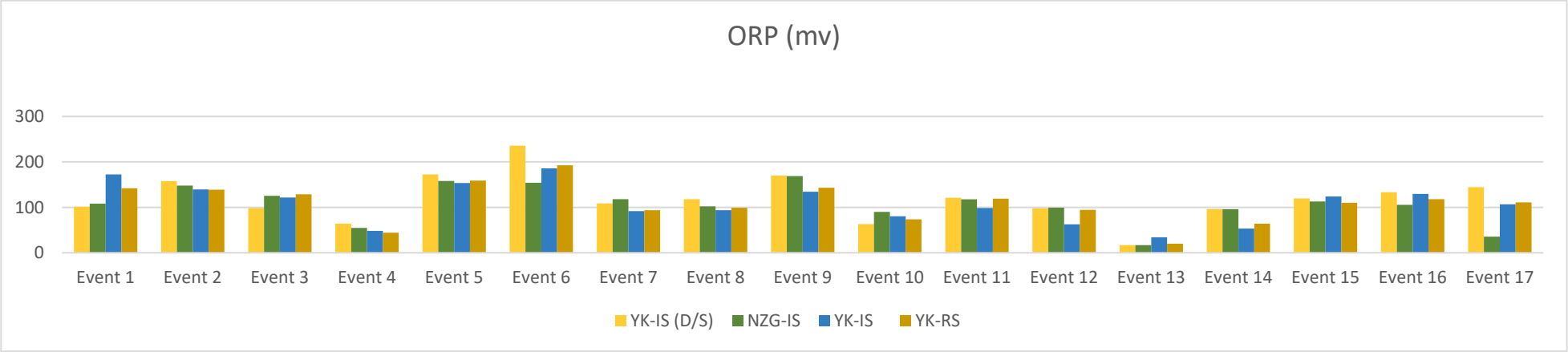

Figure 3-23 Oxygen Redox Potential (ORP) for Yorkers Creek catchment

Within the Talbingo Reservoir Catchment, Nitrogen Oxides (mg/L) were above the laboratory LOR for WC-IS, YR1-RS, YR2-RS and TR-RS, which is atypical of these locations, refer to Figure 3-24. Within the Yorkers Creek catchments, results were above the laboratory LOR for all sites except YK-RS, refer to Figure 3-25.

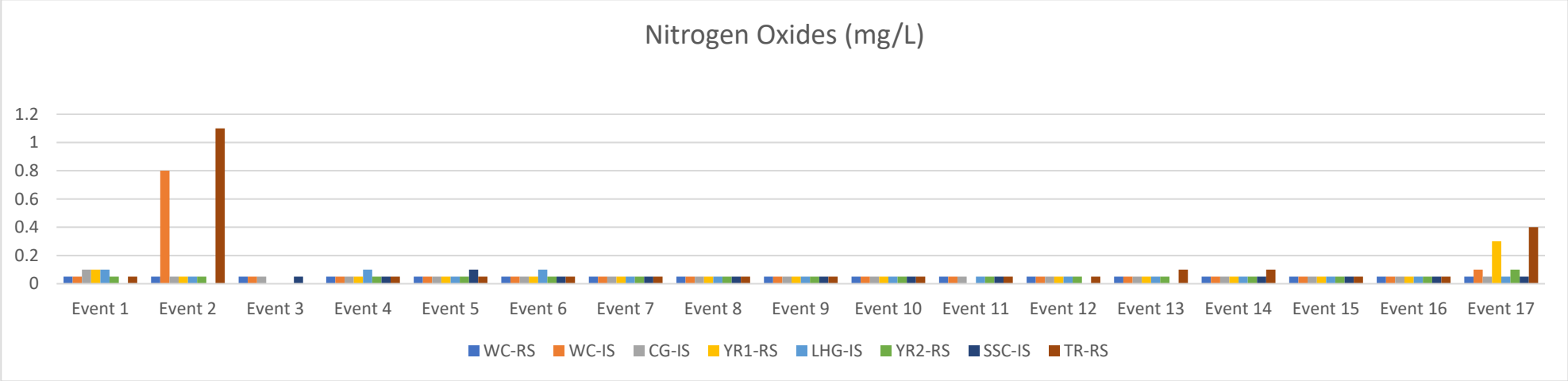

Figure 3-24 Nitrogen Oxides (mg/L) for the Talbingo Reservoir catchment

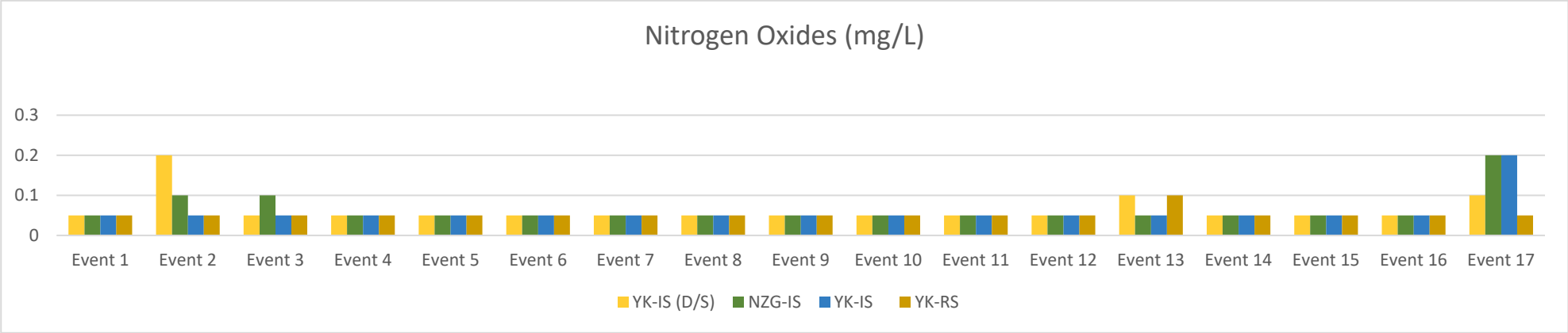

Figure 3-25 Nitrogen Oxides (mg/L) for the Yorkers Creek catchment

Reactive Phosphorous (mg/L) has notably decreased across the Talbingo Reservoir catchment, refer to Figure 3-26. All results were below the laboratory LOR, with the exception of WC-IS (0.05 mg/L). Results for Reactive Phosphorous have also notably decreased within the Yorkers Creek catchment; all results were below the laboratory LOR, refer to Figure 3-27.

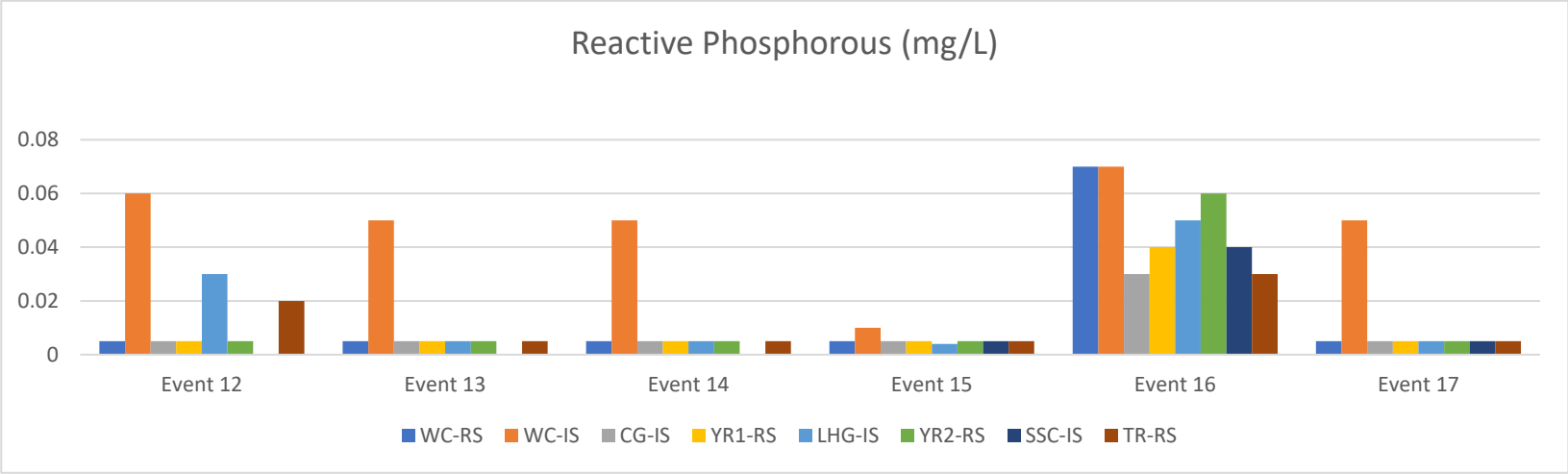

Figure 3-26 Reactive Phosphorous (mg/L) for the Talbingo Reservoir catchment

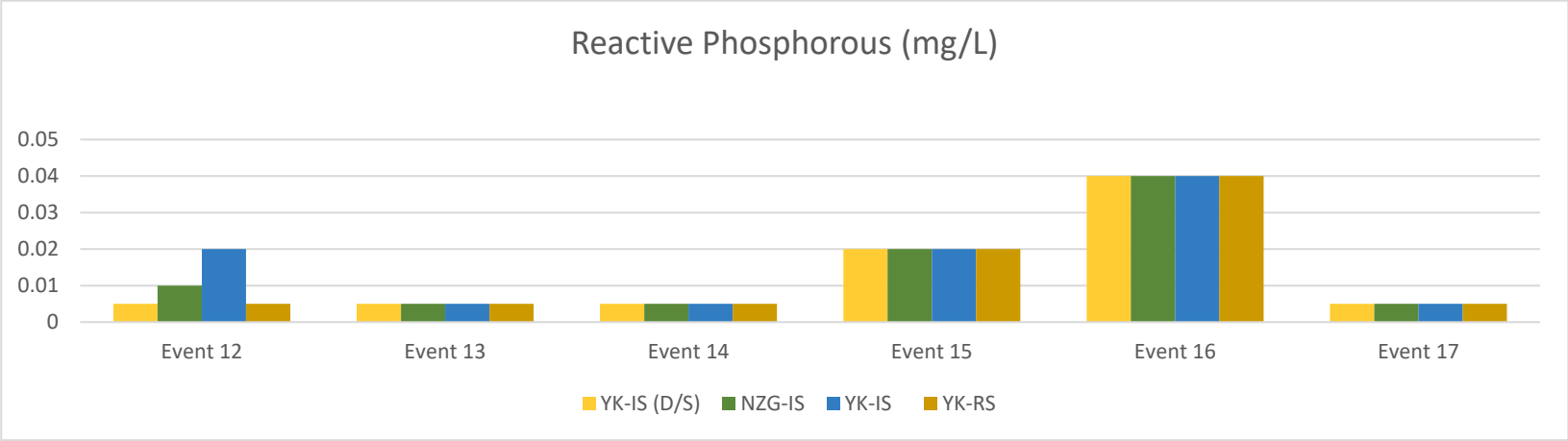

Figure 3-27 Reactive Phosphorous (mg/L) for the Yorkers Creek catchment

Total Hardness ($CaCO_3$, mg/L) within the Talbingo Reservoir catchment has remained consistent, with results varying from very soft at TR-RS (8 mg/L) to hard at LHG-IS (281 mg/L), refer to Figure 3-28. Results for Total Hardness ($CaCO_3$, mg/L) within the Yorkers Creek catchment were also consistent (very soft), ranging from 8 - 14 mg/L, refer to Figure 3-29.

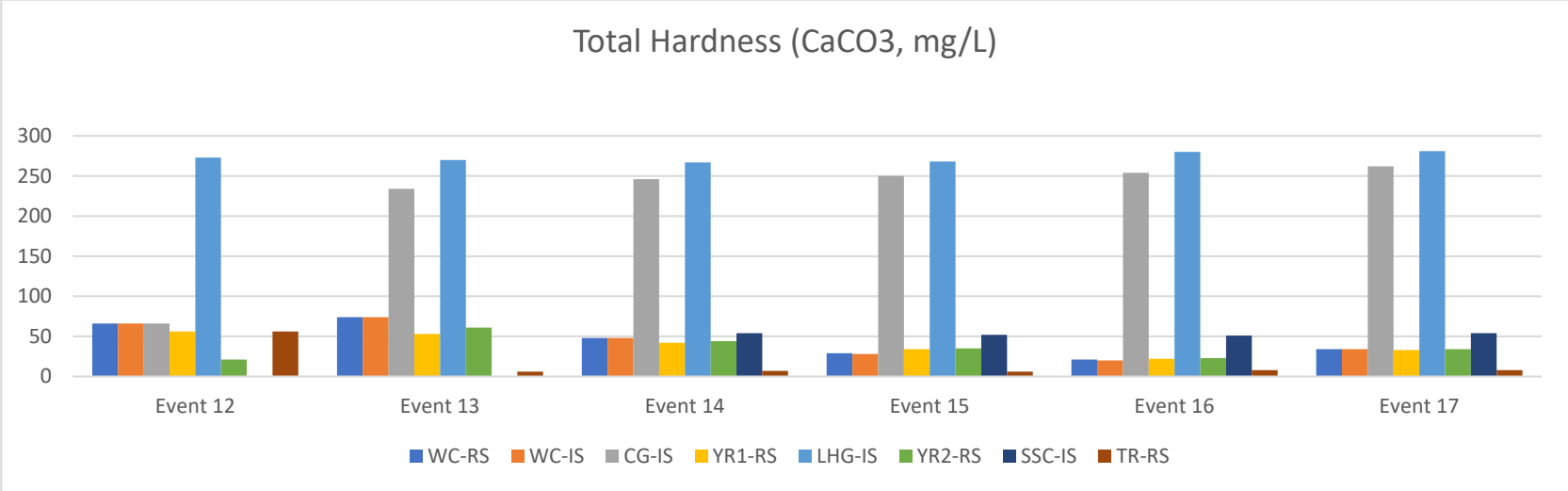

Figure 3-28 Total Hardness ($CaCO_3$) for the Talbingo Reservoir catchment

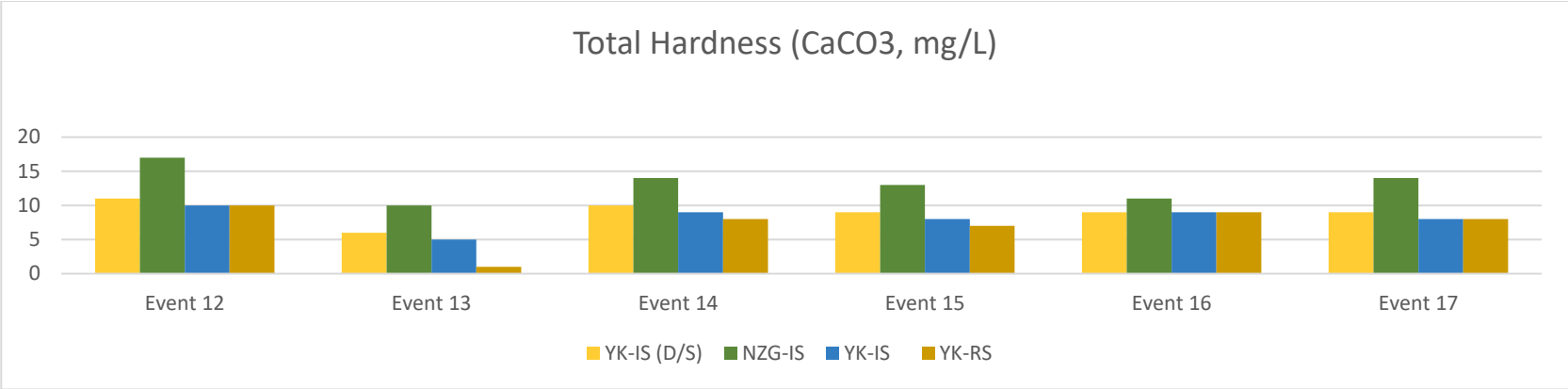

Figure 3-29 Total Hardness ($CaCO_3$) for the Yorkers Creek catchment

Within the Talbingo Reservoir catchment, results for Total Kjedahl Nitrogen (TKN, mg/L) were above the laboratory LOR at WC-RS, WC-IS, CG-IS, YR1-RS and LHG-IS, which is atypical for these sites, refer to Figure 3-30. Similarly, results for TKN were above the laboratory LOR at YK-IS (D/S) and NZG-IS, which is atypical for these sites, refer to Figure 3-31.

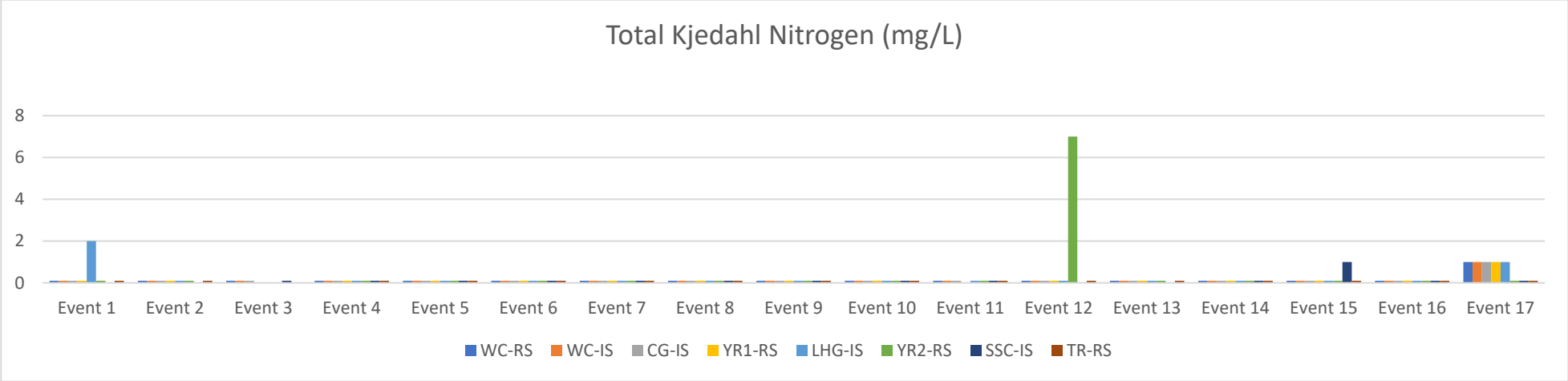

Figure 3-30 Total Kjedahl Nitrogen (TKN) for the Talbingo Reservoir catchment

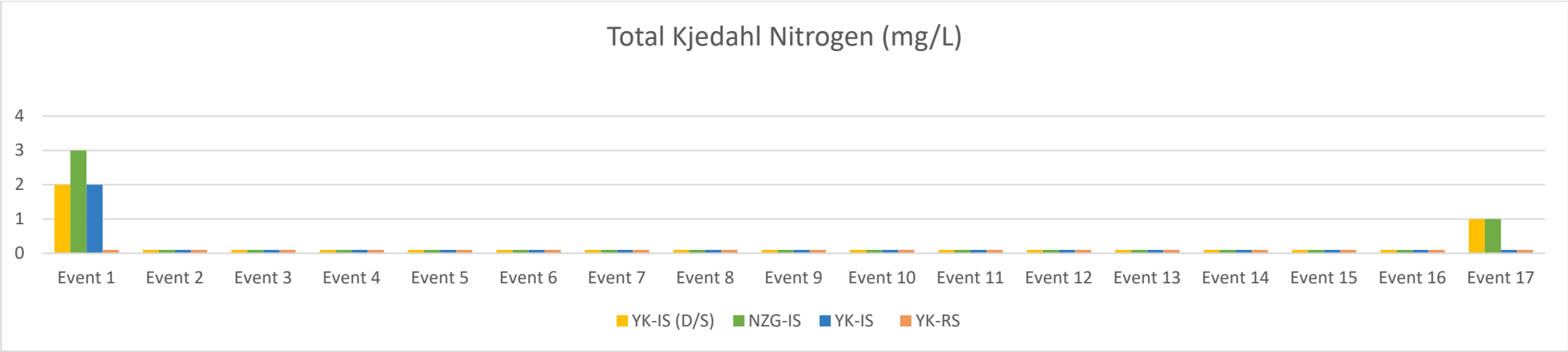

Figure 3-31 Total Kjedahl Nitrogen (TKN) for the Yorkers Creek catchment

Ammonia (mg/L) levels were below the LOR for all sites within the Talbingo and Yorkers Creek catchments for Event 17, refer to Figure 3-32 and Figure 3-33

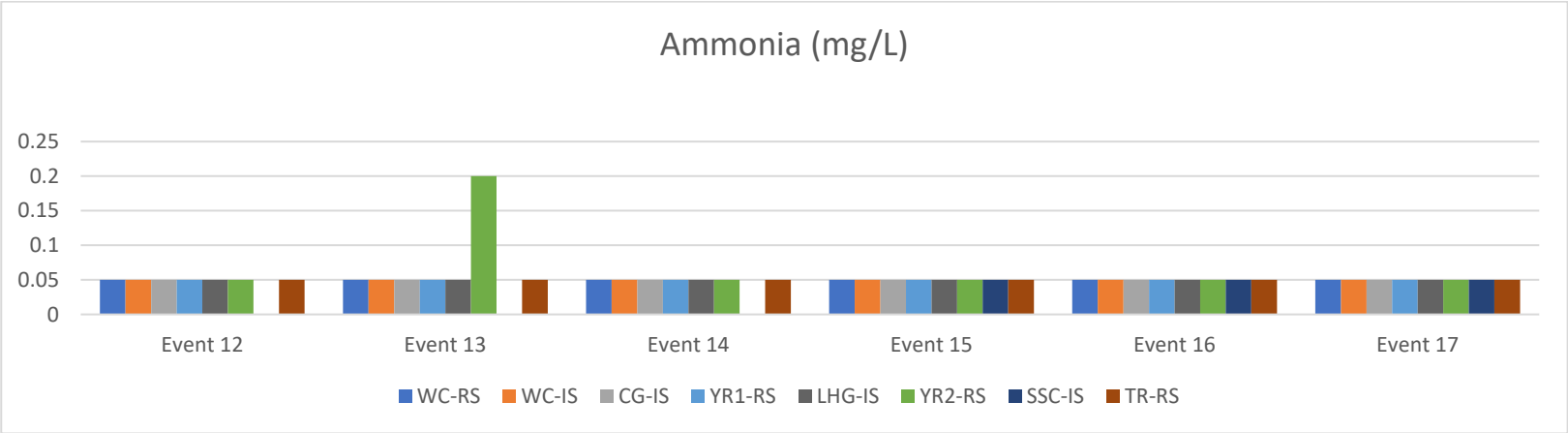

Figure 3-32 Ammonia (mg/L) for the Talbingo Reservoir catchment

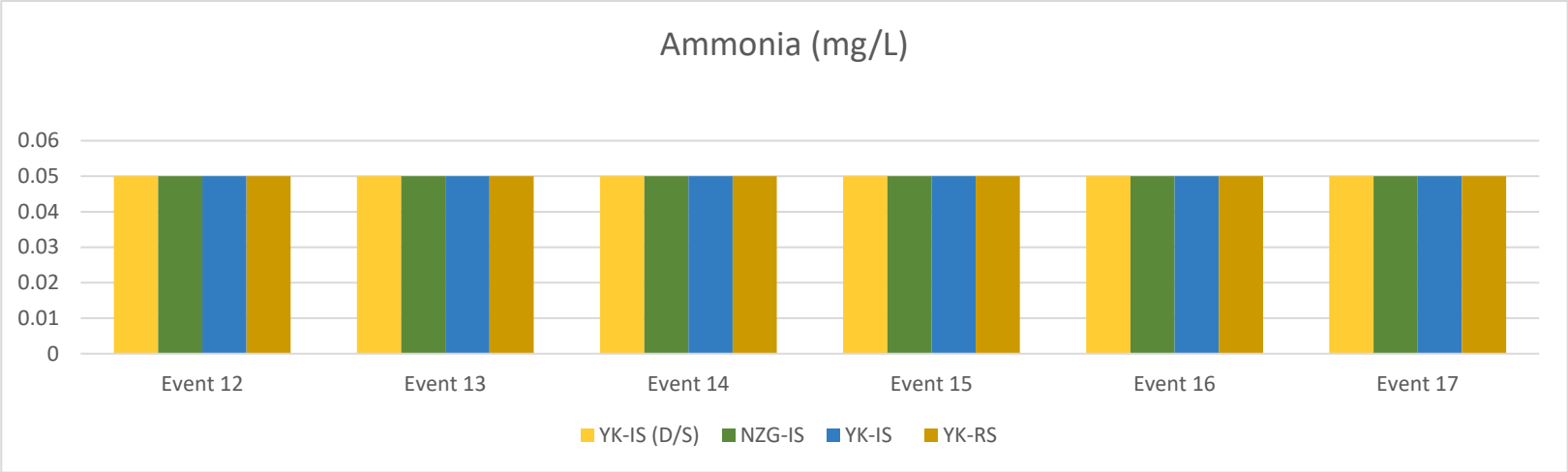

Figure 3-33 Ammonia (mg/L) for the Yorkers Creek catchment

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 YK-RS on 27 July 2023. DUP01 was analysed for metals and metalloids. The duplicate sample has been compared against the YK-RS 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 LOR.
- 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 17 have generally decreased across the sites, when compared to water temperatures for Event 16. This has been a consistent trend (since Event 12) and can be attributed to seasonal changes.

Results for DO (%) and DO (ppm) for Event 17 were consistent across both catchments.

Total Hardness ($CaCO_3$) remained consistent within the Talbingo Reservoir catchment for Event 15, varying from very soft at TR-RS (8 mg/L) to hard at LHG-IS (281 mg/L). Similarly, total Hardness ($CaCO_3$) remained consistent within the Yorkers Creek catchment, ranging from 8 – 14 mg/L (very soft).

Results for ammonia were below the LOR for both catchments, which has been a consistent trend across sampling events.

Specific conductance (µS/cm) and conductivity readings have slightly increased across both catchments, when compared with results for Event 16. The pattern between sites is mostly reflective of the pattern for specific conductance.

pH has increased within the Talbingo Reservoir and Yorkers Creek catchments. All sites had values of pH within the DGV range (6.5 – 8 pH units).

Turbidity (NTU) readings have notably decreased across the Talbingo Reservoir catchment, while slight decreases in turbidity were recorded across the Yorker's Creek catchment. Similarly, reactive phosphorus has notably decreased across the Talbingo Reservoir catchment, with all results (apart from WC-IS) below the laboratory LOR. Results for Reactive Phosphorous have also notably decreased within the Yorkers Creek catchment, with all results below the laboratory LOR.

Results for ORP and TSS have generally decreased within the Talbingo Reservoir and Yorkers Creek catchments, when compared to previous events.

Results for Nitrogen Oxides were above the laboratory LOR for WC-IS, YR1-RS, YR2-RS, TR-RS (Talbingo Reservoir catchment) and YK-IS (D/S), NZG-IS and YK-IS (Yorkers Creek catchment), which is atypical of these locations.

Similarly, results for Total Kjedahl Nitrogen (TKN, mg/L) were above the laboratory LOR at WC-RS, WC-IS, CG-IS, YR1-RS and LHG-IS (Talbingo Reservoir catchment) and YK-IS (D/S) and NZG-IS (Yorkers Creek catchment), which is atypical for these sites.

Laboratory results for Event 17 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:

- Aluminium (0.027 mg/L) at all sites
- Iron (0.3 mg/L) at SSC-IS
- Zinc (0.0024 mg/L) at CG-IS and LHG-IS
- Total Phosphorous (0.02 mg/L) at WC-RS, LHG-IS, YR1-RS, YR2-RS and TR-RS
- Total Nitrogen (0.25 mg/L) at WC-RS, CG-IS, WC-IS, YK-IS (D/S), NZG-IS, YR1-RS and TR-RS
- Nitrogen Oxides (0.015 mg/L) at YK-IS (D/S), NZG-IS, YK-IS, YR1-RS, YR2-RS and TR-RS
- Total suspended solids (0.2 mg/L) at YK-IS (D/S), LHG-IS and WC-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.*

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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.*

NGH Pty Ltd. 2023c. *Pre- construction Water Quality Monitoring Report: Event 13 March 2023.*

NGH Pty Ltd. 2023d. *Pre- construction Water Quality Monitoring Report: Event 14 April 2023.*

NGH Pty Ltd. 2023e. *Pre- construction Water Quality Monitoring Report: Event 15 June 2023.*

NGH Pty Ltd. 2023f. *Pre- construction Water Quality Monitoring Report: Event 16 June 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

22-013 Pre-construction WQM		Sheen/ oil/ grease	°C Temp. ( )	Dissolved Oxygen (DO %)	DO (ppm)	Specific EC (SPC uS/cm)	EC (uS/cm)	pH	Redox (mV)	Turbidity (NTU)	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)	TN (mg/L)	TP (mg/L)	Ag (mg/L)	Zn (mg/L)	Ammonia (mg/L)	Nitrogen Oxides	Reactive Phosphorous	Total Hardness (CaCO3)	Total Kjedahl Nitrogen (TKN)	TDS mg/L	TSS (mg/L)
DGV (Default Guideline Value)		No	-	90-110	-	-	30-350	6.5-8	-	2-25	0.027	0.0008	0.00006	0.00001	0.001	0.004	0.3	0.001	1.2	0.00006	0.008	0.25	0.02	0.00002	0.0024	0.013	0.015	0.015	-	-	-	0.2
WC-RS	Event 1	No	14.2	90.5	9.28	126.8	100.7	7.85	61.2	0.37	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.011	0.000015	0.0005	3	0.005	0.00001	0.001		0.05			0.1	12	0.1
	Event 2	s but on sedime	12.4	73.5	7.84	109	83.1	7.95	159.4	1.49	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	0.1
	Event 3	No	9.2	61.3	7.05	151	36	7.64	116.3	36.96	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	50	52
	Event 4	No	7.3	75.1	12.78	128.9	35.3	5.8	128.4		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	19	0.1
	Event 5	No	7.8	98.9	11.76	88	59	7.96	65.8	6.45	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	56	0.1
	Event 6	No	9.3	79.86	9.74	89.6	62.7	8.69	152.6	7.15	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	44	6
	Event 7	no	13.2	74.9	7.87	83.5	64.6	7.62	78.7	2.62	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	53	6
	Event 8	no	13.1	74.5	7.84	71.8	55.4	7.67	98.4	9.52	0.079	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	39	0.1
	Event 9	No	11.9	102.1	11.02	90	67.5	7.62	178.4	10.72	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	24	0.1
	Event 10	No	11.7		9.12		79.5	7.97	147.8	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.005	0.00001	0.019		0.05			0.1	74	0.1
	Event 11	No	18.9	100.6	8.7	94.9	83.9	7.86	79.1	1.94	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	52	0.1
	Event 12	No	21.3	106.8	8.92	124.9	116.1	8.16	73.1	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	66	0.1	1	5
	Event 13	No	19.4		9.11		145.8	8.44	57	0.05	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.003	0.05	0.05	0.005	74	0.1	129	0.1
	Event 14	No	12	102	11	124.1	93.2	7.42	128.3	0.08	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.5	0.00001	0.002	0.05	0.05	0.005	48	0.1	79	0.1
	Event 15	No	9.7	45.2	5.13	75.6		7.6	139.9	5.39	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.001	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.005	29	0.1	1	4
	Event 16	No	8.3	91.8	10.8	51.3	34.9	7.21	125.5	25.22	0.75	0.00015	0.00001	0.000005	0.0001	0.001	0.46	0.0005	0.004	0.000015	0.0005	0.1	0.05	0.00001	0.002	0.05	0.05	0.07	21	0.1	1	26
	Event 17	No	6.1	89.7	11.13	76.7	49	7.74	71.9	4.29	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.003	0.000015	0.0005	1	0.06	0.00001	0.001	0.05	0.05	0.005	34	1	178	2
	Min		6.10	45.20	5.13	51.30	34.90	5.80	57.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	21.00	0.10	1.00	0.10
	Max		21.30	106.80	12.78	151.00	145.80	8.69	178.40	36.96	0.75	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.01	0.00	0.00	3.00	0.50	0.00	0.02	0.05	0.05	0.07	74.00	1.00	178.00	52.00
	Mean		12.11	84.45	9.36	99.07	72.92	7.72	109.52	7.21	0.10	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.28	0.05	0.00	0.00	0.05	0.05	0.02	45.33	0.15	47.82	6.25
	Count		17.00	15.00	17.00	15.00	16.00	17.00	17.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	6.00	17.00	17.00	16.00
	St. Dev		4.37	17.32	1.92	27.23	30.69	0.61	38.92	10.23	0.19	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.72	0.12	0.00	0.00	0.00	0.00	0.03	21.18	0.22	47.99	13.43
WC-IS	Event 1	No	14.3	90.6	9.28	126.7	100.8	8.14	76	0.32	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.011	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	80	3
	Event 2	No	12.5	69.9	7.44	109	83.3	7.84	146.8	1.39	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.8	0.005	0.00001	0.001		0.8			0.1	63	0.1
	Event 3	No	9.3	61.2	7.03	48	33	7.64	145.8	40.77	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	41	42
	Event 4	No	7.4	43.7	12.55	52.3	35	5.73	115.9		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	27	0.1
	Event 5	No	7.9	96.4	11.45	87	59	7.86	104.3	5.24	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	48	0.1
	Event 6	No	9.3	72.36	9.55	86.6	60.3	8.28	148	7.78	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	47	6
	Event 7	No	13.3	75.1	7.86	83.8	65.1	7.61	92.6	2.41	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	4	3
	Event 8	No	13.1	74.4	7.82	71.7	55.4	7.62	107.1	10.1	0.076	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	1	4
	Event 9	No	12	102.2	11.02	88.7	66.6	7.55	156.8	11.79	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	6	0.1
	Event 10	No	11.9		15.88		79.2	7.99	148	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.005	0.00001	0.02		0.05			0.1	68	0.1
	Event 11	No	19	105.8	9.15	94	83.2	7.96	92.6	2.15	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	0.1
	Event 12	No	21.7	108.2	8.98	125	117.1	8.24	76.2	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.02	0.05	0.05	0.06	66	0.1	80	2
	Event 13	No	19.6		8.85		146.1	8.43	5	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.004	0.000015	0.0005	0.1	0.01	0.00001	0.003	0.05	0.05	0.05	74	0.1	94	0.1
	Event 14	No	12.1	102.7	11.03	124	93.5	7.84	114.1	0.03	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.002	0.05	0.05	0.05	48	0.1	57	0.1
	Event 15	No	9.8	44	4.99	75.3		7.39	138.4	5.64	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.001	0.000015	0.0005	0.1	0.13	0.00001	0.001	0.05	0.05	0.01	28	0.1	1	0.1
	Event 16	No	8.3	92.1	10.82	51.2	34.9	7.16	138.9	28.1	0.67	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.004	0.000015	0.0005	0.1	0.15	0.00001	0.001	0.05	0.05	0.07	20	0.1	9	17
	Event 17	No	6.2	91	11.27	76.4	48.9	7.59	78.2	3.54	0.1	0.00015	0.00001	0.000005	0.004	0.001	0.06	0.0005	0.002	0.000015	0.0005	1.1	0.07	0.00001	0.002	0.05	0.1	0.05	34	1	44	0.1
	Min		6.20	43.70	4.99	48.00	33.00	5.73	5.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	20.00	0.10	1.00	0.10
	Max		21.70	108.20	15.88	126.70	146.10	8.43	156.80	40.77	0.67	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.01	0.00	0.00	1.10	0.15	0.00	0.02	0.05	0.80	0.07	74.00	1.00	94.00	42.00
	Mean		12.22	81.98	9.70	86.65	72.59	7.70	110.86	7.47	0.09	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.20	0.03	0.00	0.00	0.05	0.10	0.05	45.00	0.15	41.94	4.59
	Count		17.00	15.00	17.00	15.00	16.00	17.00	17.00	15.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		4.42	21.12	2.50	25.94	31.17	0.61	39.03	11.39	0.17	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.29	0.04	0.00	0.01	0.00	0.18	0.02	21.57	0.22	30.02	10.52
CG-IS	Event 1	No	14.1	91.8	9.43	536	423.6	8.19	94.3	6.47	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	317	0.1
	Event 2	No	13.3	71.6	7.48	517	401.2	7.73	161.4	1.36	0.015	0.00015	0.00001	0.000005	0.005	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	0.1
	Event 3	No	9.6	62.1	7.07	447	315	8.22	159.2	65.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	270	40
	Event 4	No	8.6	44.57	12.06	321.3	349	6.37	61.1		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.05	0.00001	0.001		0.05			0.1	266	0.1
	Event 5	No	9.1	96.1	11.07	473	305	7.86	128.7	4.22	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	0.1
	Event 6	No	10.1	73.2	9.4	583	417.2	8.42	189.2	48.5	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	55
	Event 7	No	13.6	75.5	7.84	538	420.8	8.15	98.8	3.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	243	4
	Event 8	No	13.9	74.5	7.68	448.3	353.6	8.13	111.9	785.48	1.06	0.00015	0.00001	0.000005	0.0001	0.001	0.52	0.0005	0.011	0.000015	0.0005	0.1	0.35	0.00001	0.002		0.05			0.1	277	450
	Event 9	No	12.9	102.9	10.86	384	294.9	7.95	151.2	32.04	0.44	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.002	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	232	26
	Event 10	No	12.3		8.87		415.7	8.18	149.1	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.042		0.05			0.1	299	0.1
	Event 11	No	16.6	101.2	9.17	375.2	315.2	8	101.1	1.2	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.005	0.000015	0.0005	0.1	0.005	0.00001	0.004		0.05			0.1	288	0.1
	Event 12	No	20.1	116.9	9.98	438.4	397.7	7.97	101.5	0.1	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.005	66	0.1	292	2
	Event 13	No	17.5		9.56		404.9	8.18	10	0.05	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	2	0.005	0.00001	0.005	0.05	0.05	0.005	234	0.1	271	2
	Event 14	No	13.3	102.9	10.75	541	420.2	7.64	135	0.01	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	2	0.005	0.00001	0.004	0.05	0.05	0.005	246	0.1	271	0.1
	Event 15	No	10.8	43.9	4.86	479.3		7.6	153.2	0.001	0.005	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.1	0.00001	0.004	0.05	0.05	0.005	250	0.1	161	112
	Event 16	No	9.2	92.6	10.64	487.5	340.3	7.78	152.8	2.65	0.16	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.0005	0.000015	0.002	0.1	0.005	0.00001	0.005	0.05	0.05	0.03	254	0.1	242	0.1
	Event 17	No	8.7	91.9	10.68	484.7	334.1	7.9	77.8	0.002	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.001	1.3	0.005	0.00001	0.004	0.05	0.05	0.005	262	1	232	0.1
	Min		8.60	43.90	4.86	321.30	294.90	6.37	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	66.00	0.10	161.00	0.10
	Max		20.10	116.90	12.06	583.00	423.60	8.42	189.20	785.48	1.06	0.00	0.00	0.00	0.01	0.00	0.52	0.00	0.01	0.00	0.00	2.00	0.35	0.00	0.04	0.05	0.10	0.03	262.00	1.00	317.00	450.00
	Mean		12.57	82.78	9.26	470.25	369.28	7.90	119.78	59.44	0.12	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.39	0.03	0.00	0.00	0.05	0.05	0.01	218.67	0.15	267.06	40.70
	Count		17.00	15.00	17.00	15.00	16.00	17.00	17.00	16.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		3.32	21.53	1.81	70.77	47.62	0.45	44.41	194.62	0.26	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.67	0.08	0.00	0.01	0.00	0.01	0.01	75.36	0.22	36.78	109.60
YR1-RS	Event 1	No	14.9	92.2	9.31	110.7	89.3	8.35	78.3	6.94	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	69	0.1
	Event 2	No	12.7	73.8	7.83	104	79.2	8.15	128.8	1.85	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	50	0.1
	Event 3	No sample																														
	Event 4	No	6.5	24.6	13.05	34.7	36.9	6.84	56.3		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	33	0.1
	Event 5	No	7.9	102.6	12.18	82	59	7.97	157.1	5	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	53	0.1
	Event 6	No	8.8	73.3	10.59	59.7	41.2	8.5	180.9	10	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	36	13
	Event 7	No	12.5	75.5	8.03	69.6	53.1	7.46	111.4	2.19	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	3
	Event 8	No	13.1	74.8	7.86	62.9	48.6	7.83	96.6	124.93	0.088	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	35	0.1
	Event 9	No	12.2	102.7	11.02	70.8	53.5	7.53	157.4	7.3	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	30	0.1
	Event 10	No	11.6		9.68		53.1	7.91	140.3	2	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.003	0.000015	0.0005	0.1	0.01	0.00001	0.006		0.05			0.1	67	0.1
	Event 11	No	19.8	101.6	8.64	70.5	63.5	7.87	92.3	6.31	0.22	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002						50	5
	Event 12	No	22.1	109.4	9.01	109.7	103.7	8.25	89.5	0.1	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	56	0.1	12	0.1
	Event 13	No	20.3		7.73		124.6	8.69	7	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	53	0.1	73	0.1
	Event 14	No	12.9	103.6	10.93	111.7	85.9	7.88	124.8	-0.1	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	42	0.1	58	0.1
	Event 15	No	9.3	44.1	5	86.3		7.54	141	1.97	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.001	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.005	34	0.1	21	0.1
	Event 16	No	7.8	92.7	11.04	55.6	37.3	7.25	131.1	12.25	0.47	0.00015	0.00001	0.000005	0.0001	0.001	0.3	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.04	22	0.1	6	8
	Event 17	No	5.8	91.9	11.5	75	47.5	7.83	68.7	4.33	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.002	0.000015	0.0005	1.3	0.18	0.00001	0.001	0.05	0.3	0.005	33	1	41	0.1
	Min		5.80	24.60	5.00	34.70	36.90	6.84	7.00	-0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	22.00	0.10	6.00	0.10
	Max		22.10	109.40	13.05	111.70	124.60	8.69	180.90	124.93	0.47	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	1.30	0.18	0.00	0.01	0.05	0.30	0.04	56.00	1.00	73.00	13.00
	Mean		12.39	83.06	9.59	78.80	65.09	7.87	110.09	12.34	0.09	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.18	0.02	0.00	0.00	0.05	0.07	0.01	40.00	0.16	42.00	1.89
	Count		16.00	14.00	16.00	14.00	15.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	6.00	15.00	6.00	6.00	15.00	16.00	16.00
	St. Dev		4.91	24.37	2.06	23.35	25.95	0.47	44.35	31.37	0.13	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.30	0.04	0.00	0.00	0.00	0.06	0.01	12.95	0.23	19.64	3.74
LHG-IS	Event 1	No									0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.001	0.000015	0.0005	2	0.005	0.00001	0.001		0.1			2	348	0.1
	Event 2	No									0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	353	2
	Event 3	No sample																														
	Event 4	No	9.9	0	10.71	0	366.9	6.93	76.3		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.1			0.1	295	0.1
	Event 5	No	9.3	97.8	11.22	434	304	8.01	93.1	4.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	319	6
	Event 6	No	10.3	49.9	5.59	445.4	320.5	8.34	20.9	26.33	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	268	6
	Event 7	No	13.5	72.4	7.54	476.2	371.3	8.07	39.9	7.45	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	271	2
	Event 8	No	13.9	72	7.43	429.4	338.3	8.02	88.4	85.15	0.41	0.00015	0.00001	0.000005	0.0001	0.001	0.11	0.0005	0.005	0.000015	0.0005	0.1	0.07	0.00001	0.002		0.05			0.1	273	64
	Event 9	No	13.1	100.5	10.55	340.6	263.3	7.86	111.7	10.46	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	200	0.1
	Event 10	No	12.4		10.31		397.9	7.89	53.5	0.05	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.1	0.0005	0.017	0.000015	0.0005	0.1	0.005	0.00001	0.005		0.05			0.1	310	0.1
	Event 11	No	16.1	85.2	7.8	357.9	297	7.62	56.9	4.82	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.005	0.000015	0.0005	0.1	0.005	0.00001	0.003		0.05			0.1	311	0.1
	Event 12	No	18.8	84.3	7.4	453.4	399.3	7.53	-19.1	0.1	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.13	0.0005	0.073	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.03	273	0.1	280	7
	Event 13	No	17.1		6.45		445.6	7.7	6	0.05	0.13	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.08	0.000015	0.0005	0.1	0.02	0.00001	0.005	0.05	0.05	0.005	270	0.1	293	3
	Event 14	No	12.6	66.2	7.03	585	446.8	7.47	-22.7	3.65	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.13	0.0005	0.039	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.005	267	0.1	293	3
	Event 15	No	9.8	44	5.04	522		7.21	-43.2	17.27	0.07	0.00015	0.00001	0.000005	0.002	0.001	0.04	0.0005	0.007	0.000015	0.0005	0.1	0.03	0.00001	0.004	0.05	0.05	0.004	268	0.1	316	0.1
	Event 16	No	9.2	88.9	10.2	376.6	263.2	7.54	149.8	13.03	0.38	0.00015	0.00001	0.000005	0.013	0.001	0.19	0.0005	0.013	0.000015	0.006	0.1	0.01	0.00001	0.008	0.05	0.05	0.05	280	0.1	228	10
	Event 17	No	9	89.3	10.29	511	355	7.77	59.7	4.57	0.09	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.005	0.000015	0.002	1	0.03	0.00001	0.005	0.05	0.05	0.005	281	1	272	5
	Min		9.00	0.00	5.04	0.00	263.20	6.93	-43.20	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.00	267.00	0.10	200.00	0.10
	Max		18.80	100.50	11.22	585.00	446.80	8.34	149.80	85.15	0.41	0.00	0.00	0.00	0.01	0.00	0.19	0.00	0.08	0.00	0.01	2.00	0.07	0.00	0.01	0.05	0.10	0.05	281.00	2.00	353.00	64.00
	Mean		12.50	70.88	8.40	410.96	351.47	7.71	47.94	13.67	0.10	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.02	0.00	0.00	0.28	0.01	0.00	0.00	0.05	0.06	0.02	273.17	0.28	289.38	6.79
	Count		14.00	12.00	14.00	12.00	13.00	14.00	14.00	13.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	6.00	16.00	6.00	6.00	16.00	16.00	16.00
	St. Dev		3.16	28.39	2.08	147.27	61.21	0.37	55.13	22.78	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.03	0.00	0.00	0.51	0.02	0.00	0.00	0.00	0.02	0.02	6.05	0.51	39.35	15.56
YR2-RS	Event 1	No	15.3	93.1	9.32	109.4	89.2	8.38	76.5	3.28	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	74	2
	Event 2	No	13	73.6	7.74	101	78.3	8.11	145.4	2.29	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	39	0.1
	Event 3	No sample																														
	Event 4	No	6.5	83.35	19.18	105.2	38.4	7.24	64.5		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	0.1
	Event 5	No	8.1	95.2	11.26	82	55	7.81	132.6	5.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	57	0.1
	Event 6	No	10.2	86.3	11.87	62	42.9	8.19	258.3	14.21	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	47	12
	Event 7	No	12.7	75.7	8.02	71.3	54.6	7.65	104.3	2.84	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	67	5
	Event 8	No	13.4	75.1	7.84	131.6	49.7	7.71	99.5	7.06	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	48	2
	Event 9	No	12.5	103	10.97	68.4	52.1	7.47	148.1	9.56	0.29	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	22	0.1
	Event 10	No	12.3		9.94		53.3	7.86	109.8	0.05	0.22	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	63	0.1
	Event 11	No	19.9	101.8	8.3	74.5	63.1	7.48	115	5.07	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.004		0.05			0.1	92	3
	Event 12	No	22.9	108.2	8.79	109.7	105			0.1	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	21	7	1	0.1
	Event 13	No	20.9		8.24		127.4	8.56	16	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.2	0.05	0.005	61	0.1	72	0.1
	Event 14	No	13.5	103	10.74	112.9	88	7.97	81.1	0.18	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	44	0.1	59	0.1
	Event 15	No	9.9	44.2	5	88.7		7.49	97.2	1.83	0.07	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	35	0.1	56	0.1
	Event 16	No	1.8	93.2	11.1	56.9	38.2	7.1	136.4	11.65	0.46	0.00015	0.00001	0.000005	0.0001	0.001	0.29	0.0005	0.003	0.000015	0.001	0.1	0.05	0.00001	0.002	0.05	0.05	0.06	23	0.1	11	6
	Event 17	No	6.1	92.3	11.46	76.6	49	7.55	82.3	2.59	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.002	0.000015	0.0005	0.1	0.017	0.00001	0.001	0.05	0.1	0.005	34	0.1	51	0.1
	Min		1.80	44.20	5.00	56.90	38.20	7.10	16.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.05	0.05	0.01	21.00	0.10	1.00	0.10
	Max		22.90	108.20	19.18	131.60	127.40	8.56	258.30	14.21	0.46	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.10	0.05	0.00	0.00	0.20	0.10	0.06	61.00	7.00	92.00	12.00
	Mean		12.44	87.72	9.99	89.30	65.61	7.77	111.13	4.39	0.10	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.08	0.05	0.01	36.33	0.53	49.81	1.94
	Count		16.00	14.00	16.00	14.00	15.00	15.00	15.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	6.00	16.00	6.00	6.00	16.00	16.00	16.00
	St. Dev		5.58	16.73	3.06	22.44	26.32	0.41	53.35	4.44	0.13	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.01	0.02	14.75	1.73	23.71	3.29
SSC-IS	Event 1	No flow																														
	Event 2	No flow																														
	Event 3	No	10.4	61.4	6.87	108	78	7.5	152.2	42.72	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	84	8
	Event 4	No	8.6	61.4	12.09	108	96.9	7.19	53.1		0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	69	0.1
	Event 5	No	8.8	96.2	11.17	172	119	7.81	128.7	5.49	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.1			0.1	84	0.1
	Event 6	No	10.2	73	10.04	165.5	118.7	8.17	233.8	23.7	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	81	3
	Event 7	No	14.4	75	7.66	147.5	117.6	7.66	101.1	8.09	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.25	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	96	0.1
	Event 8	No	15.2	75.3	7.56	63.8	106.9	7.74	103.3	124.93	1.73	0.00015	0.00001	0.000005	0.0001	0.001	0.69	0.0005	0.011	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	81	36
	Event 9	No	14.2	102.6	10.52	140.1	111.2	7.4	150.1	43.88	1.58	0.00015	0.00001	0.000005	0.0001	0.001	0.56	0.0005	0.019	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	47	0.1
	Event 10	No	15.9		5.87		123.7	7.91	104.5	2	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.007		0.05			0.1	189	0.1
	Event 11	No	20	97.7	8.66	69.9	67.3	7.44	88.5	6.93	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	0.1
	Event 12	No flow																														
	Event 13	No flow																														
	Event 14	No	13.8	89.9	9.31	159.9	125.6	7.67	69.8	1	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.001	0.000015	0.0005	0.1	0.05	0.00001	0.001		0.05		54	0.1	38	0.1
	Event 15	No	10.9	44.5	4.92	151.7		7.29	75.4	5.7	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.0005	0.000015	0.0005	1	0.01	0.00001	0.001	0.05	0.05	0.005	52	1	83	0.1
	Event 16	No	9.3	89.8	10.31	117.4	82.2	6.93	135	20.87	1.49	0.00015	0.00001	0.000005	0.0001	0.001	0.72	0.0005	0.007	0.000015	0.003	0.1	0.005	0.005	0.003	0.05	0.05	0.04	51	0.1	24	2
	Event 17	No	7.8	88.9	10.59	125	83.8	7.53	82.6	9.14	0.74	0.00015	0.00001	0.000005	0.0001	0.001	0.3	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.005	0.001	0.05	0.05	0.005	54	0.1	7	0.1
	Min		7.80	44.50	4.92	63.80	67.30	6.93	53.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	51.00	0.10	7.00	0.10
	Max		20.00	102.60	12.09	172.00	125.60	8.17	233.80	124.93	1.73	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.02	0.00	0.00	1.00	0.05	0.01	0.01	0.05	0.10	0.04	54.00	1.00	189.00	36.00
	Mean		12.27	79.64	8.89	127.40	102.58	7.56	113.70	24.54	0.47	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.17	0.01	0.00	0.00	0.05	0.05	0.02	52.75	0.17	70.85	3.84
	Count		13.00	12.00	13.00	12.00	12.00	13.00	13.00	12.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	3.00	13.00	3.00	4.00	13.00	13.00	13.00
	St. Dev		3.61	17.60	2.18	35.50	20.17	0.32	47.37	34.90	0.67	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.01	0.00	0.00	0.25	0.01	0.00	0.00	0.00	0.01	0.02	1.50	0.25	44.99	9.92
TR-RS	Event 1	No	12.9	94.6	9.99	21.1	16.2	7.83	80.5	0.07	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	0.1
	Event 2	No	12	76	8.2	20	15	7.87	153	1.02	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	1.1	0.005	0.00001	0.001		1.1			0.1	12	0.1
	Event 3	No Sample																														
	Event 4	No	6.1	85.3	14.78	20.55	12.3	7.03	67.6		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	7	0.1
	Event 5	No	5.8	103.9	13.01	27	17	8.1	180.3	4.15	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	20	0.1
	Event 6	No	9.5	102.2	11.66	42.4	29.8	8.8	233.9	0.2	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	27	0.1
	Event 7	No	14.6	92.4	11.53	52.9	42.5	7.87	95.4	1.01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	52	4
	Event 8	No	16.1	81.5	8.02	46.4	38.6	7.7	95.7	1.84	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	37	0.1
	Event 9	No	9.5	111	12.67	21.5	15.1	7.3	190.8	0	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	12		7.92		22	7.46	64.6	0.05	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.007		0.05			0.1	37	0.1
	Event 11	No	13.2	91.4	8.97	22.3	17.2	6.86	109.9	5.08	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	3
	Event 12	No	19.3	102.3	8.91	52.3	46.7	7.76	109.6	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.003	0.000015	0.0005	7	0.005	0.00001	0.001	0.05	0.05	0.02	56	0.1	1	0.1
	Event 13	No	14.6		8.57		26	7.7	14	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.002	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.1	0.005	6	0.1	41	0.1
	Event 14	No	11.2	95.3	10.46	23.4	17.2	7.77	89.3	-0.31	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.1	0.005	7	0.1	9	0.1
	Event 15	No	8.7	45.3	5.27	22.7	15.7	7.11	125.3	0.42	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.002	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	6	0.1	1	0.1
	Event 16	No	7.1	93.1	11.29	25.3	16.6	6.92	112.6	1.42	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.002	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.03	8	0.1	3	0.1
	Event 17	No	4	95.5	12.5	43.8	26.2	7.36	66.1	3.15	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.005	0.000015	0.0005	0.4	0.05	0.00001	0.001	0.05	0.4	0.005	8	0.1	5	0.1
	Min		4.00	45.30	5.27	20.00	12.30	6.86	14.00	-0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	6.00	0.10	1.00	0.10
	Max		19.30	111.00	14.78	52.90	46.70	8.80	233.90	5.08	0.08	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.00	7.00	0.05	0.00	0.01	0.05	1.10	0.03	56.00	0.10	52.00	4.00
	Mean		11.04	90.70	10.23	31.55	23.38	7.59	111.79	1.22	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.61	0.01	0.00	0.00	0.05	0.14	0.01	15.17	0.10	18.56	0.53
	Count		16.00	14.00	16.00	14.00	16.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	6.00	16.00	6.00	6.00	16.00	16.00	16.00
	St. Dev		4.13	15.96	2.44	12.80	10.75	0.50	55.12	1.66	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	1.72	0.01	0.00	0.00	0.00	0.27	0.01	20.02	0.00	18.07	1.18
YK-IS (D/S)	Event 1	No	13.2	91.1	9.56	36.9	28.6	7.55	101.4	6.42	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.006	0.000015	0.0005	2	0.005	0.00001	0.001		0.05			2	22	0.1
	Event 2	No	10.1	65.9	7.42	29	20.5	8.39	157.8	9.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.001	0.000015	0.0005	0.2	0.005	0.00001	0.001		0.2			0.1	1	14
	Event 3	No	4.7	84.4	10.85	36	22	6.56	98.2	59.63	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.17	0.00001	0.001		0.05			0.1	44	104
	Event 4	No	3.5	96.4	12.79	30.8	18.2	6.87	64		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	18	0.1
	Event 5	No	5.4	91.8	11.6	35	22	6.91	172.4	10.56	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	31	8
	Event 6	No	7.6	88.5	10.58	31.6	21.1	8.02	235.6	7.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	24	6
	Event 7	No	9.5	68.7	7.84	29.1	20.5	7.29	108.6	6	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	18
	Event 8	No	11.4	68.1	7.44	28.6	21.2	6.57	118	10.96	0.16	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	27	2
	Event 9	No	10.4	94.7	10.59	29.9	21.5	6.6	170	4.67	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.1	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	10.2		8.78		20.3	6.78	63.1	4	0.25	0.00015	0.00001	0.000005	0.0001	0.001	0.23	0.0005	0.004	0.000015	0.0005	0.1	0.01	0.00001	0.003		0.05			0.1	30	8
	Event 11	No	15.6	101.1	8.82	24.7	20.2	6.66	121.2	6.32	0.42	0.00015	0.00001	0.000005	0.0001	0.001	0.47	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	12	9
	Event 12	No	13.2	100.5	9.34	28.9	22.4	6.8	97.8	20.22	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0005	0.006	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	11	0.1	1	28
	Event 13	No	12.9		8.8		25.8	7.97	17	12	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0005	0.003	0.000015	0.0005	9	0.02	0.00001	0.001	0.05	0.1	0.005	6	0.1	1	9
	Event 14	No	8.2	91.8	10.81	35	23.8	7.64	96.2	4.41	0.27	0.00015	0.00001	0.000005	0.0001	0.001	0.27	0.0005	0.005	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	25	0.1
	Event 15	No	7.9	44.8	5.31	33.7	22.7	7.14	119.6	10.85	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0005	0.005	0.000015	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.02	9	0.1	1	2
	Event 16	No	5	85	10.86	29.9	18.5	6.44	133.3	8.79	0.4	0.00015	0.00001	0.000005	0.005	0.001	0.27	0.0005	0.005	0.000015	0.001	0.1	0.05	0.00001	0.003	0.05	0.05	0.04	9	0.1	1	5
	Event 17	No	3	84.5	11.36	30	17.4	6.72	144.4	8.93	0.32	0.00015	0.00001	0.000005	0.0001	0.001	0.25	0.0005	0.002	0.000015	0.0005	1.1	0.005	0.00001	0.001	0.05	0.1	0.005	9	1	12	5
	Min		3.00	44.80	5.31	24.70	17.40	6.44	17.00	4.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	6.00	0.10	1.00	0.10
	Max		15.60	101.10	12.79	36.90	28.60	8.39	235.60	59.63	0.42	0.00	0.00	0.00	0.01	0.00	0.47	0.00	0.01	0.00	0.00	9.00	0.17	0.00	0.00	0.05	0.20	0.04	11.00	2.00	44.00	104.00
	Mean		8.93	83.82	9.57	31.27	21.57	7.11	118.74	11.91	0.19	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.80	0.03	0.00	0.00	0.05	0.06	0.01	9.00	0.26	17.29	12.85
	Count		17.00	15.00	17.00	15.00	17.00	17.00	17.00	16.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		3.73	15.53	1.88	3.37	2.73	0.60	49.86	13.32	0.15	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	2.17	0.04	0.00	0.00	0.00	0.04	0.01	1.67	0.50	14.99	24.62
NZG-IS	Event 1	No	13.4	91.3	9.54	53.8	41.8	7.39	108.1	5.14	0.14	0.00015	0.00001	0.000005	0.0001	0.001	0.21	0.0005	0.005	0.000015	0.0005	3	0.005	0.00001	0.001		0.05			3	43	0.1
	Event 2	No	10.2	70.2	7.89	50	36	7.69	148	3.67	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	52	0.1
	Event 3	No	5.2	80.8	10.27	39	24	6.95	125.4	51.33	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	48	53
	Event 4	No	4.7	95.4	12.28	39.8	24.4	6.67	54.6		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	22	0.1
	Event 5	No	6.2	90.4	11.19	45	29	6.97	158	7.68	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	34	4
	Event 6	No	8.1	89	10.53	41	27.7	7.62	154.2	4.18	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	31	6
	Event 7	No	9.7	69	7.84	37	26.2	6.89	117.9	2.46	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	44	9
	Event 8	No	11.4	68.1	7.45	33.2	24.6	6.68	102.2	5.7	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	27	4
	Event 9	No	11	94.5	10.41	36	26.4	6.5	168.8	4.7	0.19	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	13	0.1
	Event 10	No	9.6		9.44		27	6.97	90	4	0.17	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	39	7
	Event 11	No	15	98.8	8.74	29.6	23.9	6.75	117.8	3.03	0.23	0.00015	0.00001	0.000005	0.0001	0.001	0.22	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	79	0.1
	Event 12	No	13.4	101.2	9.38	40.6	31.6	7.02	99.3	1.2	0.12	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.01	17	0.1	1	4
	Event 13	No	13.2		9.31		39.2	7.54	17	2	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	1	0.1
	Event 14	No	8.5	92	10.77	49.7	34	7.92	95.8	3.68	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.2	0.0005	0.003	0.000015	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.005	14	0.1	32	0.1
	Event 15	No	8.6	43.9	5.12	43.7	30	6.58	112.8	6.41	0.21	0.00015	0.00001	0.000005	0.004	0.001	0.18	0.0005	0.005	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.02	13	0.1	8	0.1
	Event 16	No	5.7	85.7	10.76	36.4	23	6.63	105.6	5.3	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.21	0.0005	0.004	0.000015	0.002	0.1	0.05	0.00001	0.001	0.05	0.05	0.04	11	0.1	9	0.1
	Event 17	No	3.7	84.5	11.17	39.9	23.6	7.49	35.5	3.29	0.15	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.006	0.000015	0.0005	1.2	0.07	0.00001	0.001	0.05	0.2	0.005	14	1	23	0.1
	Min		3.70	43.90	5.12	29.60	23.00	6.50	17.00	1.20	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	10.00	0.10	1.00	0.10
	Max		15.00	101.20	12.28	53.80	41.80	7.92	168.80	51.33	0.30	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.01	0.00	0.00	3.00	0.07	0.00	0.00	0.05	0.20	0.04	17.00	3.00	79.00	53.00
	Mean		9.27	83.65	9.53	40.98	28.96	7.07	106.53	7.11	0.12	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.34	0.02	0.00	0.00	0.05	0.06	0.01	13.17	0.32	29.76	5.18
	Count		17.00	15.00	17.00	15.00	17.00	17.00	17.00	16.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		3.39	15.18	1.74	6.57	5.74	0.44	41.38	11.91	0.10	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.74	0.02	0.00	0.00	0.00	0.04	0.01	2.48	0.72	20.45	12.67
YK-IS	Event 1	No	14.2	94	9.63	32.9	26.1	7.58	172.4	10.66	0.41	0.00015	0.00001	0.000005	0.0001	0.001	0.49	0.0005	0.011	0.000015	0.0005	2	0.005	0.00001	0.001		0.05			2	20	8
	Event 2	No	10.4	69.7	7.8	30	21.4	7.65	139.3	9.44	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.2	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	24	7
	Event 3	No	4.3	81.5	10.6	31	31	6.9	121.6	32.77	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	46	36
	Event 4	No	4.2	93.8	12.23	27.6	16.6	6.7	48.1		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	14	4
	Event 5	No	6	91.2	11.35	32	20	6.6	153.5	11.62	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	19	5
	Event 6	No	8.6	85.6	10	29	19.9	7.2	185.8	6.67	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	34	4
	Event 7	No	10.3	67.2	7.54	26.7	19.2	6.74	91.7	4.04	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	39	11
	Event 8	No	12.4	66.6	7.12	26.5	20.1	6.57	93.8	6.29	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	27	0.1
	Event 9	No	12	92	9.92	27.9	21	6.24	134.2	5.39	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.12	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	8.8		10.45		21.2	7.05	80.5	7	0.33	0.00015	0.00001	0.000005	0.0001	0.001	0.26	0.0005	0.006	0.000015	0.0005	0.1	0.01	0.00001	0.002		0.05			0.1	35	6
	Event 11	No	15.9	96	8.29	23.3	19.2	6.33	98.6	7.47	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.4	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	2	7
	Event 12	No	14.6	98.3	8.84	27	21.6	6.58	62.5	5.72	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.007	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.02	10	0.1	1	5
	Event 13	No	14.8		8.38		24.6	7.29	34	6	0.32	0.00015	0.00001	0.000005	0.0001	0.001	0.35	0.0005	0.003	0.000015	0.0005	5	0.02	0.00001	0.001	0.05	0.05	0.005	5	0.1	1	5
	Event 14	No	9.4	89.6	10.26	31.5	22.1	7.51	53.3	4.7	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.29	0.0005	0.007	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	9	0.1	21	5
	Event 15	No	8.7	44.7	5.2	30.4	20.9	6.68	123.8	13.88	0.42	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0005	0.006	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.02	8	0.1	1	6
	Event 16	No	5.4	83.4	10.54	27.2	17	6.12	129.5	7.61	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.26	0.0005	0.007	0.000015	0.0005	0.1	0.05	0.00001	0.001	0.05	0.05	0.04	9	0.1	9	5
	Event 17	No	4	83.6	10.94	27	16.2	6.74	106.7	6.41	0.25	0.00015	0.00001	0.000005	0.0001	0.001	0.2	0.0005	0.007	0.000015	0.0005	0.2	0.01	0.00001	0.001	0.05	0.2	0.005	8	0.1	5	0.1
	Min		4.00	44.70	5.20	23.30	16.20	6.12	34.00	4.04	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	5.00	0.10	1.00	0.10
	Max		15.90	98.30	12.23	32.90	31.00	7.65	185.80	32.77	0.42	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.01	0.00	0.00	5.00	0.05	0.00	0.00	0.05	0.20	0.04	10.00	2.00	46.00	36.00
	Mean		9.65	82.48	9.36	28.67	21.06	6.85	107.61	9.10	0.22	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.51	0.01	0.00	0.00	0.05	0.06	0.02	8.17	0.21	17.59	6.72
	Count		17.00	15.00	17.00	15.00	17.00	17.00	17.00	16.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		3.95	14.64	1.78	2.59	3.61	0.46	43.50	6.84	0.16	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	1.25	0.01	0.00	0.00	0.00	0.04	0.01	1.72	0.46	14.95	8.06
YK-RS	Event 1	No	15.8	87.5	8.96	30.5	25.1	7.12	142	5.71	0.35	0.00015	0.00001	0.000005	0.0001	0.001	0.45	0.0005	0.005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	20	0.1
	Event 2	No	12.7	71.4	7.58	31	24	7.54	138.9	9.77	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.19	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	30	6
	Event 3	No	3.4	82	10.91	31	18	6.73	128.8	20.28	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	40	3
	Event 4	No	3.9	95.3	12.53	26.9	16.1	6.58	44.2		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	15	0.1
	Event 5	No	6.4	88.7	10.95	32	21	6.5	158.8	8.97	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	25	5
	Event 6	No	10.4	91.9	10.29	30.5	22	7.09	192.4	3.93	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	18	5
	Event 7	No	11.7	70.8	7.69	25.2	18.8	6.79	93.8	3.41	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.12	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	40	9
	Event 8	No	13	68.9	7.26	24.9	19.2	6.59	99.1	7.45	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	1	0.1
	Event 9	No	14	99.1	10.2	28	22.1	6.38	143.2	8.25	0.32	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	13.1		6.76		21.4	6.75	73.6	10	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0005	0.009	0.000015	0.0005	0.1	0.01	0.00001	0.002		0.05			0.1	31	7
	Event 11	No	18	101.3	8.35	23.5	20.4	6.4	119.1	6.3	0.37	0.00015	0.00001	0.000005	0.0001	0.001	0.54	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	78	5
	Event 12	No	17.7	101.3	8.5	26.3	22.7	6.58	94.6	7.89	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.41	0.0005	0.004	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	1	13
	Event 13	No	17.9		7.68		28.9	7.43	20	9	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0005	0.003	0.000015	0.0005	6	0.04	0.00001	0.001	0.05	0.1	0.005	1	0.1	1	6
	Event 14	No	11.2	93.3	10.23	29.2	21.5	7.42	64	5.82	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.32	0.0005	0.005	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	8	0.1	25	0.1
	Event 15	No	9.2	43.6	5.02	29.4	20.5	6.63	110.1	7.48	0.47	0.00015	0.00001	0.000005	0.0001	0.001	0.41	0.0005	0.012	0.000015	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.02	7	0.1	10	0.1
	Event 16	No	5.2	84.7	10.77	27.4	17	6.2	118	7.37	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.28	0.0005	0.013	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.04	9	0.1	6	5
	Event 17	No	3.9	85.4	11.22	25.8	15.4	6.61	111	5.72	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.23	0.0005	0.009	0.000015	0.0005	0.1	0.008	0.00001	0.001	0.05	0.05	0.005	8	0.1	16	0.1
	Min		3.40	43.60	5.02	23.50	15.40	6.20	20.00	3.41	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	1.00	0.10	1.00	0.10
	Max		18.00	101.30	12.53	32.00	28.90	7.54	192.40	20.28	0.47	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.01	0.00	0.00	6.00	0.06	0.00	0.00	0.05	0.10	0.04	10.00	0.10	78.00	13.00
	Mean		11.03	84.35	9.11	28.11	20.83	6.78	108.92	7.96	0.23	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.45	0.02	0.00	0.00	0.05	0.05	0.01	7.17	0.10	21.06	3.81
	Count		17.00	15.00	17.00	15.00	17.00	17.00	17.00	16.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	6.00	17.00	6.00	6.00	17.00	17.00	17.00
	St. Dev		5.01	15.43	1.98	2.63	3.38	0.40	42.65	3.80	0.17	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	1.43	0.02	0.00	0.00	0.00	0.01	0.01	3.19	0.00	19.69	3.82

sed are half the Limit of reporting for statistical use (LOR/2)

APPENDIX B OBSERVATIONS AND FIELD DATA

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	~~6.19~~ 6.1	89.7	11.13	76.7	49.0	7.74	71.9	4.29
	Comment	Clear, fast flowing.								
WC-IS	Month	No	6.2	91.0	11.27	76.4	48.9	7.59	78.2	3.54
	Comment	Clear, lower flow than E16.								
CG-IS	Month	No	8.7	91.9	10.68	484.7	334.1	7.90	77.8	0.02
	Comment	Clear, Water vegetation.								
YR1-RS	Month	No	~~8~~ 75.8	91.9	11.50	75.0	47.5	7.83	68.7	4.33
	Comment	Clear, fast flowing.								

26 July 2023 E17 – Sunny clear skies, light breeze @ Gdehave

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	~~5.8~~ 9.0	89.3	10.29	511.0	355.0	7.77	59.7	4.57
	Comment	Aquatic vegetation. Clear.								
YR2-RS	Month	No	6.1	92.3	11.46	76.6	49.0	7.55	82.3	2.59
	Comment	Fast flowing – rock bar not covered.								
SSC-IS	Month	No	7.8	88.9	10.59	125.0	83.8	7.53	82.6	9.14
	Comment	Flowing. Milkiness/cloudiness								
TR-RS	Month	No	4.0	95.5	12.50	43.8	26.2	7.36	66.1	3.15
	Comment	Reservoir very low – lowest since sampling commenced March 2022 → Snags visible.								
YK-IS (D/S)	Month	No.	3.0	89.5	11.36	30.0	17.4	6.72	114.4	8.93
	Comment	Milkiness to flow.								

27 July 2023 - Sunny, cold slight breeze.

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.	3.7	84.5	11.17	39.9	23.6	7.49	35.5	3.29
	Comment	Evidence of animal use on banks.								
YK-IS	Month	No	4.0	83.6	10.94	27.0	16.2	6.74	106.7	6.41
	Comment	Cold, fast flowing, milkiness to water colour. Evidence of animal use.								
YK-RS	Month	No	3.9	85.4	11.22	25.8	15.4	6.61	111.0	5.72
	Comment	DUP01. Cold, fast flowing.								

APPENDIX C LABORATORY CERTIFICATES

ENVIRONMENTAL AND ANALYTICAL LABORATORIES

Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

Attention: Nicole Isles

Wednesday, August 23, 2023

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

LABORATORY ANALYSIS REPORT

Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0264	**WC-RS** 26.07.23					
		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)	**10.6**	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 CaCO3	**34**	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)	**<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	**1.0**	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	**0.06**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**178**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2

Charles Sturt University

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Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

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Wednesday, August 23, 2023

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092
Page 2 of 17
For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0264	**WC-RS** 26.07.23					
		Total Suspended Solids	**2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0265	**WC-IS** 26.07.23					
		Aluminium (dissolved)	**0.10**	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)	**10.4**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**34**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.06**	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)	**0.002**	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	**1.1**	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

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Wagga Wagga NSW 2678

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0265	**WC-IS** 26.07.23					
		Phosphorus, Total	**0.07**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**44**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0266	**CG-IS** 26.07.23					
		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)	**96.6**	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 CaCO3	**262**	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)	**4.96**	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

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:

Order #

Date Analysis Commenced
28-July-2023

Sample Type
Water

Collected By
Client

Date Received
28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0266	**CG-IS** 26.07.23					
		Nickel (dissolved)	**0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**1.3**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**0.3**	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	**232**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0267	**YR1-RS** 26.07.23					
		Aluminium (dissolved)	**0.10**	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)	**10.6**	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 CaCO3	**33**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.07**	mg/L	APHA 3030 B/3120 B	0.01

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Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

Attention: Nicole Isles

Wednesday, August 23, 2023

NATA Accredited Laboratory Number: 9597

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092
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For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0267	**YR1-RS** 26.07.23					
		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)	**0.002**	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	**1.3**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**0.3**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**<0.01**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.18**	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	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0268	**LHG-IS** 26.07.23					
		Aluminium (dissolved)	**0.09**	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)	**104**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000

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Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092
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For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0268	**LHG-IS** 26.07.23					
		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	**281**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.04**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**4.91**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.005**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**1.0**	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	**272**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**5**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.005**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0269	**YR2-RS** 26.07.23					
		Aluminium (dissolved)	**0.10**	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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Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0269	**YR2-RS** 26.07.23					
		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)	**10.9**	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	**34**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.07**	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)	**0.002**	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	**0.17**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**51**	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
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002

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Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0270	**SSC-IS** 26.07.23					
		Aluminium (dissolved)	**0.74**	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)	**13.4**	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 CaCO3	**54**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.30**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**5.04**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.002**	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	**7**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2

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Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
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Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092
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For all enquiries related to this report please quote document number: 2307-0092

Facility:

Order #

Date Analysis Commenced
28-July-2023

Sample Type
Water

Collected By
Client

Date Received
28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0270	**SSC-IS** 26.07.23					
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0271	**TR-RS** 27.07.23					
		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)	**2.05**	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	**8**	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)	**0.005**	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	**0.4**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**0.4**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**<0.01**	mg/L	LTM-W-030	0.01

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Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
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Email: eal@csu.edu.au
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NGH Environmental

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Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0271	**TR-RS** 27.07.23					
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**5**	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
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0272	**YK-IS(d/s)** 27.07.23					
		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 CaCO3	**9**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.25**	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)	**0.006**	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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Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0272	**YK-IS(d/s)** 27.07.23					
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**1.1**	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	**12**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**5**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0273	**NZG-IS** 27.07.23					
		Aluminium (dissolved)	**0.15**	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)	**3.38**	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	**14**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.16**	mg/L	APHA 3030 B/3120 B	0.01

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Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0273	**NZG-IS** 27.07.23					
		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)	**0.006**	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	**1.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**0.2**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**<0.01**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.07**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**23**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**1**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0274	**YK-IS** 27.07.23					
		Aluminium (dissolved)	**0.25**	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

Charles Sturt University

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Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

Suite 1/39 Fitzmaurice Strret

Wagga Wagga NSW 2650

Attention: Nicole Isles

Wednesday, August 23, 2023

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

LABORATORY ANALYSIS REPORT

Report Number:2307-0092
Page 13 of 17
For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0274	**YK-IS** 27.07.23					
		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	**8**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.20**	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)	**0.007**	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	**0.2**	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	**5**	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
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jul-0275	**YK-RS** 27.07.23					
		Aluminium (dissolved)	**0.28**	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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Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0275	**YK-RS** 27.07.23					
		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)	**<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 CaCO3	**8**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.23**	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)	**0.009**	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	**16**	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
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002

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LABORATORY ANALYSIS REPORT

Report Number:2307-0092
Page 15 of 17
For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0276	**DUP01** 27.07.23					
		Aluminium (dissolved)	**0.40**	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)	**0.30**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.011**	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
23Jul-0277	**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

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Report Number:2307-0092

For all enquiries related to this report please quote document number: 2307-0092

Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jul-0277	**WATER BLANK**					
		Total Hardness as CaCO3	**<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	**<0.01**	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
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002

Note:

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

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Facility:	Order #	Date Analysis Commenced
		28-July-2023
Sample Type	**Collected By**	**Date Received**
Water	Client	28-July-2023

EAL ID	Client ID. Date/Time sample taken	Test	Result (units)	Method Reference	Limit of Reporting

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
		Yk-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%
	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**	3.409090909	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	0.006
		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%
	Event 14	DUP01	0.04	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-RS	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.00001	0.05
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	92%
	Event 15	DUP01	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		WC-RS	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	16%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
	Event 16	DUP01	0.67	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.004	0.000015	0.0005	0.00001	0.001
		WC-IS	0.6	0.00015	0.00001	0.000005	0.0001	0.001	0.34	0.0005	0.004	0.000015	0.0005	0.00001	0.002
		RPD% - **Acceptable Range**	6%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	33%
	Event 17	DUP01	0.4	0.00015	0.00001	0.000005	0.0001	0.001	0.3	0.0005	0.011	0.000015	0.0005	0.00001	0.001
		YK-RS	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.23	0.0005	0.009	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	18%	0%	0%	0%	0%	0%	13%	0%	10%	0%	0%	0%	0%
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
	Event 14	**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 15	**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 16	**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 17	**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

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

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

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **15J100066**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
7.Turbidity		100NTU		396426	101.1NTU
1. EC		2.760mS		401089	2.766mS
3. pH 4		pH 4.00		399527	pH 4
4. pH 7		pH 7.00		399304	pH 6.88
5. Temperature		19.6°C		Reading	19.5°C
6. DO		0%		399958	-0.2%
8. mV		241.1mV		A393379/B398193	241mV

Calibrated by: **Jesse Stenroos**

Calibration date: **14/07/2023**

Next calibration due: **13/08/2023**